MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Agricultural Land Classification Surveys

Deadline: Deadline 1
Application Reference: EN020028

Document Numbers:
MRCNS-J3303-RPS-19049
MOR001-FLO-CON-CAG-RPT-0059

Document Reference: S_D1_5.7
Rev: F01

20 May 2025

Document status					
Version	Purpose of document	Approved by	Date	Approved by	Date
F01	Deadline 1	HK	May 2025	IM	May 2025

Prepared by:

RPS

Prepared for:

Morgan Offshore Wind Limited, Morecambe Offshore Windfarm Ltd

Contents

Tables

Glossary

Term	Meaning
Applicants	Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).
Commitment	This term is used interchangeably with mitigation and enhancement measures. The purpose of commitments is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects. Primary and tertiary commitments are taken into account and embedded within the assessment set out in the ES.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Mitigation measures	This term is used interchangeably with Commitments. The purpose of such measures is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects.
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 OWL	Morecambe Offshore Windfarm Ltd is a joint venture between Zero-E Offshore Wind S.L.U. (Spain) (a Cobra group company) (Cobra) and Flotation Energy Ltd.
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore export cables, landfall, and onshore infrastructure for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. 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.
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 OWL	Morgan Offshore Wind Limited is a joint venture between bp Alternative Energy Investments Ltd. and Energie Baden-Württemberg AG (EnBW).
Onshore export cables	The cables which would bring electricity from the landfall to the onshore substations.

Term	Meaning
Onshore Infrastructure Area	The area within the Transmission Assets Order Limits landward of MHWS. Comprising the offshore export cable corridor from MHWS to the transition joint bay, onshore export cable corridor, onshore substations and 400 kV grid connection cable corridor, and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses. Those parts of the Transmission Assets Order Limits proposed only for ecological mitigation and/or biodiversity benefit are excluded from this area.
Onshore Order Limits	See Transmission Assets Order Limits: Onshore (below).
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.
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.
Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of electrical transformers.
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 (such as construction compounds).
Transmission Assets Order Limits: Onshore	The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds). Also referred to in this report as the Onshore Order Limits, for ease of reading.

Acronyms

Acronym	Meaning
BMV	Best and Most Versatile
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report

1 ALC Survey Coverage

1.1 Introduction

1.1.1.1 This technical note provides a response to Hearing Action Point 45 and a request from the ExA to produce a note *"explaining how the applicants' soil surveys meet the tests at paragraph 5.11 of NPS EN-1 and give examples of other DCO projects that have taken the same approach as the applicants"*.

1.1.1.2 **Section 1.3** describes the approach to survey work adopted for the Transmission Assets and how this meets the requirements of Section 5.11 of NPS EN-1. **Section 1.3** goes on to provide a justification of the data collated in order to enable a robust assessment of the likely significant effects of Transmission Assets on agricultural land quality in Table 6.25 of Volume 3, Chapter 6: Land use and recreation (APP-104) and to inform appropriate mitigation measures.

1.1.1.3 **Section 1.4** provides a summary of the approach taken to Agricultural Land Classification (ALC) surveys and the proposed mitigation measures by other offshore wind farm DCOs.

1.2 Response received from Natural England in regard to soil surveys

1.2.1.1 Natural England in their combined relevant and written representation RR-1601, Appendix G, point G6 (RR-1601.G.6) noted:

"From the information provided Natural England does not consider there to be reasonable justification for the lack of Agricultural Land Classification (ALC) survey effort to date. A detailed ALC and soil survey of the agricultural land should be undertaken across the full Study Area to inform the Application. Based on the information provided there is a large proportion of the proposed development site yet to be surveyed, an ALC survey should be undertaken for these areas as part of the baseline soil and ALC information given that soil disturbance will take place in these areas."

1.2.1.2 NE also raise the following matter in in RR-1601.G.48 in relation to soils and the best and most versatile land:

Natural England notes that the document section states initial survey work will be supplemented by further soils surveys pre-construction undertaken at a density of one observation per hectare (ha), but with additional data as required to capture soil data. This is insufficient survey effort and further surveying is required. Whilst this may make the mitigation precautionary, currently the information provided means that the project is unable to show how it avoids impacts to best and most versatile (BMV) soils nor the design of potential mitigation to safeguard the soil resources.

1.2.1.3 In light of these concerns, **section 1.3** explains how the baseline surveys including the detailed ALC surveys undertaken provide the information required to provide a robust environmental assessment of the effects of the scheme on best and most versatile land and to develop appropriate mitigation measures to safeguard agricultural land quality and soil resources.

1.2.1.4 **Section 1.4** provides examples of other DCO applications for offshore wind farms where either the same approach to surveys has been applied or no survey work has been undertaken and the response that has been received from Natural England in relation to these.

1.3 ALC Data Collection

Desk Study of Agricultural Land Classification and Soils

1.3.1.1 The area within the order limits for Transmission Assets is unusual in that it is fully covered by Soil Survey Memoirs (Soils of the Lancashire Coastal Plain and Soils of Preston District) which were produced by the Soil Survey of England and Wales at a scale of 1 inch to 1 mile (1:63,360) ((MAFF, 1966) and (MAFF, 1967)). For much of England and Wales the most detailed soils mapping available is produced at a scale of 1:250,000. Therefore, the soil memoirs include a more detailed level of information and are able to provide suitable baseline data to identify the distribution of soil types across Transmission Assets. The description of the published baseline soils and ALC data is included in Volume 3, Annex 6.1 Published agricultural and soils data (APP-105).

Site Specific Soil Surveys

1.3.1.2 The proposed approach to ALC and soil surveys was presented for comment at both the Scoping and Preliminary Environmental Information Report (PEIR) stage of the application process, in the form of the Morgan and Morecambe Offshore Wind Farms: Transmission Assets EIA Scoping Report (APP-230) and Land use and Recreation chapter of the PEIR. This included setting out the methodology for baseline studies which included site-specific surveys. The site-specific soil survey methodology proposed and subsequently undertaken included:

- Reconnaissance surveys of soils to confirm the nature and ALC of soil types (identified as part of the desk study) identified within the land use study area. Reconnaissance surveys included the use of hand auger borings and soil pits to confirm the characteristics of soil profiles within each of the soil types and assist in the development of the Outline Soil Management Plan; and
- A detailed ALC survey for areas within the land use study area where there would be permanent loss of agricultural land (at the substation sites). These detailed ALC surveys included hand auger borings taken at approximately 100 m intervals across the areas experiencing permanent land take, with soil pits as necessary.

1.3.1.3 The Applicants can confirm that the surveys undertaken were in line with the methodology proposed and the results of these have been used as the basis for the assessment of effects on ALC and the development of the Outline Soil Management Plan (APP-200). The requirement to provide detailed Soil Management Plan(s) is secured by Requirement 8 of Schedules 2A & 2B of the draft DCO (AS-004). In its approval of the Soil Management Plan, pursuant to Requirement 8, the relevant local planning authority may consult with Natural England as appropriate.

1.3.1.4 Volume 3, Annex 6.2: Agricultural land classification survey results (APP-105) confirms that auger boring surveys were undertaken in areas where there would be a permanent loss of agricultural land (e.g., Onshore Substations) and representative locations of several main soil types within the Onshore Order Limits, according to the desktop information presented in Volume 3, Annex 6.1: Published agricultural land classification and soils data (document reference APP-105). The locations of the auger borings and resulting ALC grades are shown on Figures 1.1 to 1.6 within Annex 6.1 (APP-105). The auger boring data has been supplemented by the examination of the physical soil profile characteristics within dug archaeological trenches available at the time of survey, together with the excavation of six further soil pits to identify soil structural characteristics and other soil profile characteristics noted during the auger boring survey in the main soil types. The descriptions of the soil pits are included in Volume 3, Annex 6.2: Agricultural land classification survey results (document reference APP-105).

1.3.1.5 It is important to emphasise that all of the survey work undertaken both within the onshore substation areas and areas of representative soil types was carried out at a detailed scale, that is at a density of 1 auger boring/ha in accordance with the guidance in Natural England Technical Note TIN049 (Natural England, 2012). None of the survey work undertaken has been at a semi-detailed scale.

1.3.1.6 Based on the detailed survey of the areas of permanent agricultural loss at the onshore substations, together with the conservative assumption that the link boxes would all be located in best and most versatile (BMV) agricultural land, Paragraph 6.11.2.13 of Volume 3, Chapter 6: Land use and recreation (APP-104) concludes that the potential impact of permanent loss of agricultural land, including BMV land during construction of the Transmission Assets will result in a major adverse effect which is considered significant in EIA terms. As such, further ALC and soils surveys would not change the likely significance of the effect reported in Volume 3, Chapter 6: Land use and recreation (APP-104). No further survey is therefore required to inform the EIA.

1.3.1.7 Taking the above information into account, the information that has been provided with respect to the type and quality of soils within the study area has enabled a robust assessment of the likely significant effects of the Transmission Assets on agricultural land quality and informed the mitigation reported in Volume 3, Chapter 6: Land use and recreation (APP-104) and Outline Soil Management plan (APP-200).

1.3.1.8 Table 1.1 provides a summary of the relevant points of Section 5.11 of NPS EN-1 and how the Transmission Assets fully meet/address these requirements.

Table 1.1: Summary of relevant points from Section 5.11 of NPS EN-1

NPS EN-1 provision	How this has been addressed.
Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5). [Paragraph 5.11.12 of NPS EN-1]. The Secretary of State should ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. Where schemes are to be sited on best and most versatile agricultural land the Secretary of State should take into account the economic and other benefits of that land. Where development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. [Paragraph 5.11.34 of NPS EN-1].	The installation of the onshore cable corridor would only result in the temporary loss of agricultural land including best and most versatile land. This is because the cables will be buried for their entire length and the land reinstated post-construction. The only areas where there is permanent loss of agricultural land is at the onshore substation sites and link boxes along the onshore cable corridor. Justification for the location of the Transmission Assets, including a description of the design and/or environmental constraints considered as part of the iterative design process, is set out in Volume 1, Chapter 4: Site selection and consideration of alternatives (AS-026). Volume 1, Annex 4.3 sets out the stages of siting and design iterations for Transmission Assets. In relation to the permanent loss of the best and most versatile land, Table 4.7 (AS-026) contains the BRAG assessment of the Onshore Substations zones. All zones were identified to have intermediate potential to constrain development meaning that the impact to Best and Most Versatile Land could not be avoided. However the highest quality Grade 1 within the definition of best and most versatile land was avoided and the detailed survey work undertaken at the onshore substation sites has identified them to comprise only areas of Subgrade 3a land which comprises the lowest quality land within the definition of best and most versatile land.
Applicants should also identify any effects and seek to minimise impacts on soil health and protect and maintain soil quality taking into account any mitigation measures proposed. [Paragraph 5.11.13 of NPS EN-1].	The impacts of the Transmission Assets with respect to agricultural land, including best and most versatile agricultural land, are identified in section 6.6 and assessed in section 6.11 of Volume 3, Chapter 6: Land

NPS EN-1 provision	How this has been addressed.
Applicants are encouraged to develop and implement Soil Management Plans which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance where large quantities of soils are surplus to requirements or are affected by contamination. [Paragraph 5.11.14 of NPS EN-1]	use and recreation (APP-104) and summarised in paragraph **1.3.1.6** above. Measures adopted as part of the Transmission Assets to mitigate impacts on land use and recreation are provided in section 6.8 of Volume 3, Chapter 6: Land use and recreation (APP-104). This includes a commitment to develop detailed Soil Management Plan(s) in accordance with the Outline Soil Management Plan (APP-200) secured by Requirement 8 of Schedules 2A & 2B of the draft DCO (AS-004). The outline soil management plan and the measures contained within it has been developed in accordance with recognised best practice guidance in the Department for Environment and Rural Affairs (Defra) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) and Institute of Quarrying (IoQ) Good Practice Guide for Handling Soils in Mineral Workings (2021). The outline Soil Management Plan at Section 1.6 identifies that, in addition to the soil survey data that has been undertaken to inform the ES, further soil surveys will be undertaken at a density of 1 auger boring/ha to inform the detailed soil management plan(s).

1.4 Examples of Offshore Wind Farm DCOs and Approach to ALC Survey

1.4.1.1 Examples of ALC survey work undertaken on the onshore elements of other offshore wind farm DCOs are provided below, together with the responses from Natural England in relation to each project.

1.4.2 Hornsea Project Three Offshore Wind Farm

Survey work

1.4.2.1 This project included the same approach to ALC survey as the Transmission Assets. The project used 1:250,000 soils mapping (as noted in **paragraph 1.3.1.1**, this mapping is at a less detailed scale than that available for the Transmission Assets) along with ALC surveys undertaken in representative soil types together with detailed ALC surveys within the areas of permanent land take at the onshore substation. The order limits includes an estimated 57 ha of Grade 2 land, 147 ha of Grade 3a land, 79 ha of Grade 3b land and 4 ha of Grade 4 land. The assessment is contained in ES Volume 3 Chapter 6 Land Use and Recreation. Table 6.6 of the chapter contains the approach to surveys (APP-078).

Natural England representation

1.4.2.2 No comments were made in relation to the methodology, survey work undertaken or the assessment of effects on agricultural land quality. The comments received by Natural England therefore differ between the Transmission Assets and the Hornsea Project Three Offshore Wind Farm where a similar soil survey methodology has been applied.

1.4.3 Hornsea Project Four Offshore Wind Farm

ALC Survey Work

1.4.3.1 No ALC survey work was undertaken in relation to this project. The order limits included an estimated 300.85 ha of Grade 2 land and 133 ha of Grade 3 land, based on Provisional 1 inch mapping and 1:250,000 soils mapping (as noted in **paragraph 1.3.1.1**, this mapping is at a less detailed scale than that available for the Transmission Assets). The study area included soils with peaty topsoils. The onshore substation was assessed to comprise approximately 18.9 ha of best and most versatile Grade 2 land, based on published data. The assessment is contained in ES Volume 3 Chapter 6 Land Use and Agriculture. Section 6.6.2 of the chapter describes the site survey work undertaken (APP-030).

Natural England position

1.4.3.2 The Statement of Common ground with Natural England (REP7-062) on onshore matters acknowledged the lack of survey data and was flagged as an “amber” rated issue where the issue was not agreed but had no material impact. Natural England stated that “no site data was collected which makes the baseline assessment difficult…. However, we are satisfied that this can be dealt with by condition”. Commitment 61 in Table 6.13 of the ES Chapter identifies that *“Prior to the commencement of works, the contractor (or project appointed Agricultural Liaison Officer) will undertake soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles.”*

1.4.3.3 The nature of the comments received by Natural England differs between the Transmission Assets and the Hornsea Project Four Offshore Wind Farm where there was no survey work undertaken in comparison to the approach to the Transmission Assets where representative detailed survey work has been carried out.

1.4.4 North Falls Offshore Wind Farm

ALC Survey Work

1.4.4.1 No ALC survey work has been undertaken to date in relation to this project. The project area is assessed to contain approximately 103 ha of Grade 1 land and 78 ha of Grade 2 land together with 159 ha of Grade 3 land (assumed for assessment purposes that this is all

Subgrade 3a land). This was done in line with 1:250,000 soils mapping (as noted in **paragraph 1.3.1.1**, this mapping is at a less detailed scale than that available for the Transmission Assets) and MAFF (1988) ALC grades and descriptions. The assessment of the Grades of land within the onshore project area is included at Table 22.12 in Chapter 22 of the ES Land Use and Agriculture (APP-036)

Natural England position

The Natural England relevant representation at point A8 identifies that the soil management plan should be provided as a named requirement. There is no comment on the adequacy of assessment of ALC and no issues related to the adequacy of soils data were included in the initial risks and issues log (REP1-070) issued at Deadline 1.

1.4.4.2 The nature of the comments received by Natural England differ between the Transmission Assets and the North Falls Offshore Wind Farm where there was no survey work undertaken in comparison to the Transmission Assets, where representative detailed survey work has been carried out.

1.4.5 Five Estuaries Offshore Wind Farm

ALC Survey Work

1.4.5.1 No survey work was undertaken and the project's assessments were based on provisional ALC mapping. The Agricultural assessment includes the permanent loss of approximately 23 ha of Grade 1 land as identified at paragraph 5.13.9 in Volume 6 Part 3, Chapter 5: Ground Conditions and Land Use at the onshore substation (APP-087). This loss was identified in line with 1:250,000 soils mapping (as noted in **paragraph 1.3.1.1**, this mapping is at a less detailed scale than that available for the Transmission Assets).

Natural England Position

1.4.5.2 The relevant representation (RR-081) at section 5.10 states, in relation to other matters relating to Natural England's remit – the following features are those which may be significantly affected by the proposed Five Estuaries project based on the information provided to date:

"Soils and best and most versatile agricultural land - where significant development of agricultural land is demonstrated to be necessary, applicants should seek to use areas of poorer quality land in preference to that of higher quality and protect soils during development"

1.4.5.3 No issues were then included in the Risks and Issues Logs as principal or other issues and no comments were made on the ALC data presented as part of the ES, including the lack of survey of the permanent onshore infrastructure on Grade 1 land.

1.4.5.4 The nature of the comments received by Natural England differ between the Transmission Assets and the Five Estuaries Offshore Wind Farm where there was no survey work undertaken in comparison to the

Transmission Assets where representative detailed survey work has been carried out.

1.4.6 Mona Offshore Wind Project

ALC Survey Work

1.4.6.1 This project adopted the same approach to ALC survey as the Transmission Assets. The project used 1:250,000 soils mapping (as noted in **paragraph 1.3.1.1**, this mapping is at a less detailed scale than that available for the Transmission Assets) alongside some soils mapping at 1:63,360 (same as Transmission Assets but not full coverage). Representative detailed ALC surveys were undertaken in representative soil types together with detailed ALC surveys within the areas of permanent land take at the onshore substation. The assessment is contained in ES Volume 3 Chapter 7: Land Use and Recreation (REP7-048) .

Welsh Government Agricultural Land Classification & Soil Specialists

1.4.6.2 The Welsh Government agricultural land classification and soil specialist (REP1-051) requested some technical clarification of the ALC data which were provided within the ES Chapter 7. These clarifications were provided by the Applicant, and the survey results were validated by Welsh Government in November 2024. No further comments were raised by the Welsh Government specialists as to the content of the survey work or the assessment in ES Chapter 7 based on this data.

The approach taken by the Welsh government in relation to this project, does not therefore align with the approach being taken by NE in relation to Transmission Assets where a similar soil survey methodology has been applied.

2 References

Institute of Quarrying (IQ) (2021) Good Practice Guide for Handling Soils in Mineral Workings (IQ, 2021).

MAFF (1966) Soil Survey of Great Britain, Soils of the Preston District of Lancashire, Sheet 75, 1:63,360 and accompanying Memoir 1966.

MAFF (1967) Soil Survey of Great Britain, Soils of the South-West Lancashire Coastal Plain, Sheets 74 and 83, 1:63,360 and accompanying Memoir 1967.

Natural England (2012) Agricultural Land Classification: protecting the best and most versatile agricultural land (TIN049) [online]. Available at: [redacted] (Accessed May 2025).