Partners in UK offshore wind

# MONA OFFSHORE WIND PROJECT

## Outline Soil Management Plan

## F02_F03 (Tracked)

**Deadline: ~~2~~6**

**Application Reference: EN010137**

**Document Reference: J26.8 ~~F02~~F03**

**Document Number: MOCNS-J3303-RPS-10169**

**20 December~~27 August~~ 2024**

**~~F02~~F02_F03**

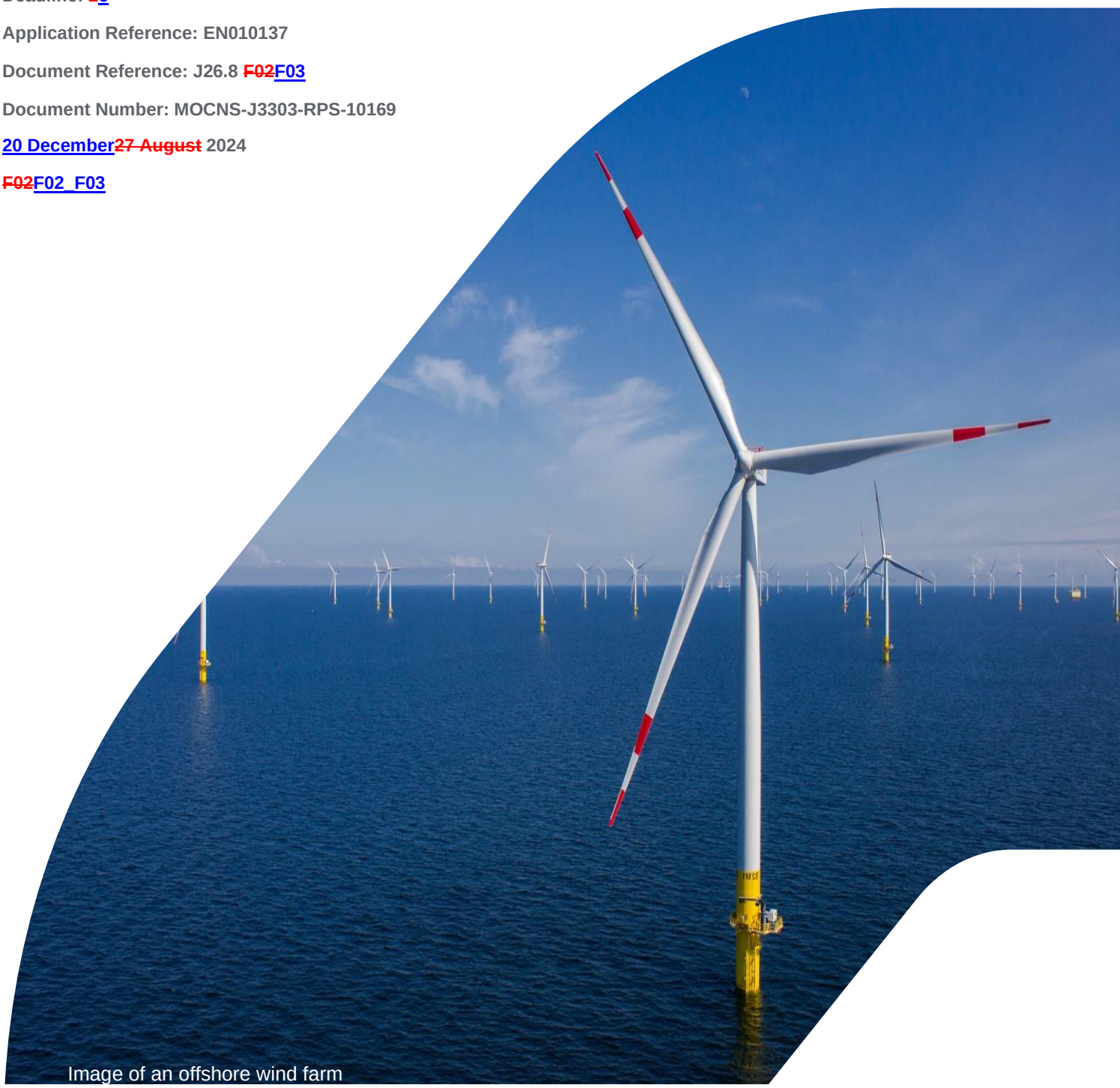

Image of an offshore wind farm

**www.morganandmona.com/en**

## Document status

| Version | Purpose of document | Authored by | Reviewed by | Approved by | Review date |
|---|---|---|---|---|---|
| F01 | Application | RPS | Mona Offshore Wind Ltd | Mona Offshore Wind Ltd | February 2024 |
| F02 | Submission at Deadline 2 | RPS | Mona Offshore Wind Ltd | Mona Offshore Wind Ltd | 27 August 2024 |
| F03 | Submission at Deadline 6 | RPS | Mona Offshore Wind Ltd | Mona Offshore Wind Ltd | 20 August 2024 |

**Prepared by:**

**RPS**

**Prepared for:**

**Mona Offshore Wind Ltd.**

# Contents

# Glossary

| Term | Meaning |
|---|---|
| Local Authority | A body empowered by law to exercise various statutory functions for a particular area of the United Kingdom. This includes County Councils, District Councils and County Borough Councils. |
| Mona Offshore Wind Project | The Mona Offshore Wind Project is comprised of both the generation assets and offshore and onshore transmission assets and associated activities. |
| Mona Onshore Development Area | The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction compounds), and the connection to National Grid infrastructure will be located. |

# Acronyms

| Acronym | Description |
|---|---|
| ALC | Agricultural Land Classification |
| ALO | Agricultural Liaison Officer |
| CoCP | Outline Code of Construction Practice |
| DCO | Development Consent Order |
| Defra | Department for Environment, Food & Rural Affairs |
| EIA | Environmental Impact Assessment |
| INNS | Invasive and Non-Native Species |
| IQ | Institute of Quarrying |
| MLWS | Mean Low Water Springs |

# Units

| Unit | Description |
|---|---|
| cm | Centimetre |
| kV | Kilovolt |
| mm | millimetre |

# 1 Outline Soil Management Plan

## 1.1 Overview

1.1.1.1 This Outline Soil Management Plan sets out the key management measures that will be implemented during the construction phase of the Mona Offshore Wind Project. The Outline Soil Management Plan is provided as an appendix to the Outline Code of Construction Practice (CoCP) (document reference: J26), which seeks to manage the environmental impacts of the construction process.

1.1.1.2 This Outline Soil Management Plan seeks to manage potential impacts that occur from the construction of the onshore and intertidal elements of the Mona Offshore Wind Project. These elements occur landward of Mean Low Water Springs (MLWS) and comprise:

- Mona Landfall
- Onshore Cable Corridor
- Onshore Substation and associated land reprofiling.
- 400 kV Grid Connection Cable Corridor.

1.1.1.3 In addition to these elements, the Outline Soil Management Plan also considers the temporary construction compounds, storage areas and accesses required to support the construction of the Mona Offshore Wind Project.

1.1.1.4 The onshore elements of the Mona Offshore Wind Project will be constructed within the local authority areas of Conwy County Borough Council and Denbighshire County Council.

## 1.2 Purpose of the Outline Soil Management Plan

1.2.1.1 The draft Development Consent Order (DCO) (Document Reference C1) includes a requirement for the preparation of a final CoCP. The final CoCP will be supported by a series of management plans including an Outline Soil Management Plan (Document Reference J26.8), which must be submitted to and approved by the relevant planning authority prior to the commencement of onshore works.

1.2.1.2 The purpose of this Outline Soil Management Plan is to set out the approach to managing impacts on soil resources within the Mona Onshore Development Area during construction of the Mona Offshore Wind Project, as far as possible.

1.2.1.3 This is an outline document based on the design set out in Volume 1, Chapter 3: Project Description of the Environmental Statement (Documents reference F1.3) and includes measures that have been identified as part of the EIA process.

1.2.1.4 The Outline Soil Management Plan should be read in conjunction with the Outline Code of Construction Practice (document reference: J26) and its supporting appendices. In addition, the following documents provide further information regarding agricultural land and soils:

- Volume 3, Chapter 7: Land use and recreation of the Environmental Statement
- Volume 7, Annex 7.1: Published soil and agricultural land classification data technical report of the Environmental Statement

- Volume 7, Annex 7.2: Soil survey data technical report of the Environmental Statement.

## 1.3 Scope of this Outline Soil Management Plan

1.3.1.1 The scope of this Outline Soil Management Plan applies to the onshore site preparation works and construction activities of the Mona Offshore Wind Project located landward of MLWS. The Plan does not apply to activities associated with offshore works, (i.e. seaward of MLWS).

1.3.1.2 Onshore site preparation works will be undertaken prior to the commencement of construction. These works will be undertaken in line with the following sections of this Outline Soil Management Plan as certified through the DCO:

- Section 1.4: Roles and responsibilities
- Section 1.5: Regulatory framework and guidance
- Section 1.7: Management and supervision of the soil handling process
- Section 1.10.1: Soil stripping operations
- Section 1.10.3: Soil stripping – temporary access road
- Section 1.11..2: Soil storage – temporary and permanent access roads.

1.3.1.3 The final Soil Management Plan will be in ~~general~~ accordance with the principles established in the Outline Soil Management Plan and will be agreed with the relevant authority prior to commencing construction of the relevant stage of the onshore and intertidal works (above MLWS). For the purpose of this strategy, the term 'construction' includes all related engineering, construction and restoration activities as authorised by the Development Consent Order (DCO) within the Order Limits.

## 1.4 Roles and responsibilities

1.4.1.1 Although the construction team has not been appointed at the time of writing this plan, the key roles and associated responsibilities with regard to this Outline Soil Management Plan are set out below. The Construction (Design and Management) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

1.4.1.2 The responsibilities of each role will be refined in the detailed Soil Management Plan.

### Applicant

1.4.1.3 The Applicant will be responsible for the following:

- Ensuring that the Soil Management Plan is implemented effectively
- Giving necessary direction to Principal Contractors (for example, setting contractual obligations)
- Reviewing, revising and refining the Soil Management Plan (where necessary) in conjunction with the Principal Contractor.

### Principal Contractor

1.4.1.4 The Principal Contractor will be appointed by the Applicant and has the overall responsibility for:

- Updating and delivering the detailed Soil Management Plan on behalf of the Applicant
- Ensuring all procedures in the Soil Management Plan are followed
- Ensuring all Principal Contractors are suitably qualified and experienced in implementing the measures within the Soil Management Plan.
- Ensuring that all legal and contractual requirements relating to the Soil Management Plan are met by ensuring adequate plans/procedures are in place, and that they can be achieved
- Establish procedures for the regular review and recording of the quality of the works as part of its Quality Management System
- Maintain records relevant to the Soil Management Plan.

### Agricultural Liaison Officer

1.4.1.5 Due to the agricultural nature of land identified within the Mona Onshore Development Area, an Agricultural Liaison Officer (ALO) will be appointed to supervise and ensure the effective implementation of the Soil Management Plan during construction of the Mona Offshore Wind Project.

1.4.1.6 The ALO will be the dedicated contact for liaising with relevant stakeholders and relevant parties and will be responsible for implementing the Soil Management Plan. The ALO will also be the first point of contact for any enquiries from relevant stakeholders and relevant parties. They will also be responsible for organising and leading meetings with relevant stakeholders and other construction projects in the vicinity of Mona Offshore Wind Project.

1.4.1.7 In addition, the ALO would be available to oversee any aftercare required post-construction. Should agricultural land quality issues occur during the construction or aftercare period, these will be raised with the ALO and investigated.

### Contractors/Subcontractors

1.4.1.8 Contractors and subcontractors will be required to understand their responsibilities and implement the measures within the Soil Management Plan.

### Training

1.4.1.9 The Applicant will ensure that all relevant construction staff are made aware of the Soil Management Plan and their responsibilities. Training will be provided to ensure that all relevant members of the onshore construction teams, receive focused Soil Management Plan training to ensure their competence in carrying out their duties.

1.4.1.10 Any training related to the Soil Management Plan will be additional to the mandatory training requirements on site Health and Safety.

## 1.5 Regulatory framework and guidance

1.5.1.1 This Outline Soil Management Plan has been prepared in accordance with recognised best practice guidance provided in the Department for Environment & Rural Affairs (Defra) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009) and Institute of Quarrying (IQ) Good Practice Guide for Handling Soils in Mineral Workings (IQ, 2021), where applicable. It is noted that although the IQ

guide is titled for use in mineral workings, it is applicable to all infrastructure projects, including long linear developments (e.g. onshore cable routes) particularly those where large volumes of soil are to be stripped, stored, and reinstated. The appropriate guidance sheets would be identified during the detailed design of the Mona Offshore Wind Project and included in the Detailed Soil Management Plan

## 1.6 Soil management measures

1.6.1.1 This Outline Soil Management Plan has been divided into the following sections, with each section addressing a specific aspect of soil management:

- Section 1.7: proposals for the management and supervision of the soil handling process.
- Section 1.8: summary of relevant published background and site survey information relevant to the identification of available soil resources within the Mona Onshore Development Area
- Section 1.9: soil resource availability and suitability within the Mona Onshore Development Area.
- Section 1.10: description of the soil stripping procedures which would be used within the Mona Onshore Development Area.
- Section 1.11: description of the soil storage procedures to be followed, including the location, construction, and management of storage mounds.
- Section 1.12: description of the procedures which would be used to replace soils within the Mona Onshore Development Area.
- Section 1.13: a description of the control measures and tests which would be used to determine when soil handling can take place.
- Section 1.14: a description of the aftercare management to be used for affected agricultural soils within the Mona Onshore Development Area.

## 1.7 Management and supervision of the soil handling process

### 1.7.1 Agricultural Liaison Officer (ALO)

1.7.1.1 The ALO will be responsible for supervising and monitoring the implementation of the procedures set out below (‘the soil handling supervisor’). This is in accordance with requirements set out in Toolbox Talk 2, Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009).

1.7.1.2 The ALO would have access to soil management advice from a suitably qualified and experienced soil scientist or practitioner. The qualified soil handling supervisor would be an individual with the necessary “Foundation Skills”, having achieved the Soil Professional Competence Standards set out by the British Society of Soil Science.

1.7.1.3 During construction of the Mona Offshore Wind Project, the ALO will have regular site meetings with the Principal Contractor and during soil handling operations to monitor and control the soil handling works and ensure that the works are undertaken in accordance with the Soil Management Plan.

1.7.1.4 Prior to the commencement of construction, the ALO will provide a point of contact for each affected landowner/occupier to enable contact if they have questions regarding

the ongoing works or if they have any questions regarding how the works may be affecting their day-to-day farming operations.

### 1.7.2 Plant health issues

1.7.2.1 As stated in Volume 7, Annex 3.13: National Vegetation Classification and Invasive Non-Native Species Survey technical report of the Environmental Statement, Invasive and Non-Native Species (INNS) of plants have been identified within the Mona Onshore Development Area.

1.7.2.2 Therefore, in accordance with the Outline Code of Construction Practice (document reference: J26), the Principal Contractor would produce specific method statements for the INNS species identified (and the locations within which they are present) with specific measures to be implemented during construction works and/or vegetation and soil removal to ensure that there is no spread of INNS. These measures would be implemented as part of a detailed Biosecurity Protocol, which would be developed in ~~general~~ accordance with the Outline Biosecurity Protocol (Document reference: J26.11) and secured as a requirement of the DCO.

## 1.8 Published soils information

1.8.1.1 Published soils and Agricultural Land Classification (ALC) information for the Mona Onshore Development Area is provided in Volume 7, Annex 7.1: Published soils and Agricultural Land Classification data technical report of the Environmental Statement.

## 1.9 Soil resources

1.9.1.1 Areas of agricultural land to be permanently lost during construction of the Mona Offshore Wind Project (e.g. Onshore Substation) have been subject to further soil surveys. These soil surveys were undertaken between October and November 2023 and used to confirm the ALC grade of agricultural land and in what proportion. In addition, soil survey work has been undertaken in several locations along the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor, where different soil types are represented and where access was available for intrusive survey.

1.9.1.2 Further details of the soil surveys undertaken are provided in Volume 7, Annex 7.2: Soil survey data technical report of the Environmental Statement. The survey work undertaken to date indicates that:

- The published soils data provides a good database of both the distribution and nature of different soil types within the Mona Onshore Development Area
- The Predictive ALC Map (Welsh Government, 2019) provides a good indication of the likely ALC grades for the different soil types within the Mona Onshore Development Area.

1.9.1.3 In terms of depths of soil materials, the survey work indicates that there would be an average thickness of approximately 250 mm of topsoil within the Mona Onshore Development Area. However, where shallow soils overlying limestone (Gower series) are identified, there may be some areas within the Mona Onshore Development Area where the topsoil thickness is approximately 200 mm. As such, the thickness to be stripped would be limited in these shallower areas of soil to ensure that excessive volumes of stony material are not incorporated into the stripped topsoil.

1.9.1.4 The initial survey work undertaken to inform relevant sections of the Environmental Statement would be supplemented by further survey work pre-construction. This

further survey work would be used to characterise the soil properties and identify the depths of different topsoil and subsoil units (if necessary) to be stripped within the working areas and to inform a detailed Soil Management Plan, to ensure that soil types are separately stored where required. The Soil Management Plan would be prepared and agreed post-consent as part of the Code of Construction Practice.

1.9.1.5 The soils information to be collated together with the specification for soil resources to be stripped and stored in works areas would include the following:

- Soil horizon depths, textures and colour for topsoil and subsoil horizons
- Stone contents, to be estimated from augering and confirmed via soil pit excavation and/or sample analysis
- Presence and characteristics of mottling, a soil wetness indicator
- Presence of manganese concretions, a soil wetness indicator
- Identification of gleyed horizons
- Identification of slowly permeable layers
- Identification of impenetrable rock layers.

1.9.1.6 Soils will be described according to the methods and terminology contained in the Soil Survey Field Handbook. Topsoil samples will also be taken for laboratory analysis of PH, organic matter content and major nutrients (phosphorus, potassium, nitrogen and magnesium).

## 1.10 Soil stripping

### 1.10.1 Soil stripping operations

1.10.1.1 The following information would be recorded by the ALO in advance of soil striping operations (where relevant):

- Existing crop regimes
- Position and condition of field boundaries
- Condition of existing access arrangements
- Location of private water supplies
- Type of agriculture taking place
- Crop yields
- Quality of grazing land
- Existing weed burden.

1.10.1.2 Soil stripping operations within the Mona Onshore Development Area can be described in relation to the different elements of the Mona Offshore Wind Project and the types of works proposed. These include soil stripping operations located within the following areas, where land and soils would be reinstated either during or post construction:

- Onshore Substation and associated land reprofiling
- Temporary Construction Compounds
- Temporary and permanent access roads

- Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor.

1.10.1.3 As described in Section 1.6, the initial stripping would be an operation that would be subject to monitoring to ensure that the soil handling method is implemented correctly by the ALO on behalf of the Principal Contractor.

### 1.10.2 Temporary Construction Compounds, Substation Areas and Permanent Access Roads

1.10.2.1 Soil stripping operations would be carried out in accordance with the Construction Code of Practice (Defra, 2009) taking into account the relevant methodology from the in Mineral Workings (IQ, 2021), as appropriate.

1.10.2.2 For each identified works area where soils are to be stripped, stored and restored, the following would be identified:

- The proposed thickness of the topsoil soil strip within the individual soil units that exist in the area
- The location of the soil storage areas.

1.10.2.3 Existing vegetation in the area to be stripped and the storage mound locations to be cleared, if considered necessary, would be undertaken using an appropriate procedure depending on site conditions at the time.

1.10.2.4 If INNS are identified within the works area, these should be treated in accordance with the relevant INNS method statements provided in the Outline Code of Construction Practice (Document Reference: J26). If the vegetation is confirmed as arable stubble, then no removal would be necessary.

### 1.10.3 Temporary Access Roads

1.10.3.1 For the lengths of temporary access roads, the depths of different topsoil units would be identified within the area, based on the survey of soil resources, as described in Section 1.9 of this Outline Soil Management Plan.

1.10.3.2 The topsoils would then be stripped, using excavators to remove topsoil from the footprint of the road to create bunds alongside the access road alignment.

1.10.3.3 As described in Section 1.6 of this Outline Soil Management Plan, the initial strip of temporary access roads would be an operation that would be subject to monitoring to ensure that the handling of soils is undertaken correctly and in accordance with the appropriate soil handling method.

### 1.10.4 Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor

#### Topsoil strip

1.10.4.1 For the length of the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor, the depths of different topsoil units would be identified, based on the survey of soil resources, as described in Section 1.9 of this Outline Soil Management Plan.

1.10.4.2 The stripping of topsoils would be carried out in accordance with the Construction Code of Practice (Defra, 2009), taking into account the relevant methodology from the in Mineral Workings (IQ, 2021), as appropriate.

### Subsoil strip

1.10.4.3 For the lengths of the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor, the depths of subsoil units would be identified, based on the survey of soil resources, as described in Section 1.6. There would be limited stripping of subsoil resources along the length of the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor, associated only with the excavation of the cable trenches by excavator or trencher.

## 1.11 Soil storage

### 1.11.1 Temporary Construction Compounds

1.11.1.1 Soils would be moved directly from the area being stripped to areas that have been identified as topsoil and subsoil (if required) storage areas. It is essential that the locations of storage areas within the Mona Onshore Development Area are planned to ensure that the potential for damage to the soil storage heaps and/or contamination of the heaps with foreign construction materials is limited, as far as possible. All storage bunds intended to remain in situ for more than 3 months or over the winter period would be seeded and kept free from weeds.

1.11.1.2 Topsoil storage mounds would not exceed 3 m in height and subsoils 5 m in height. Materials from Individual topsoil and subsoil units would be stored separately within the Mona Onshore Development Area.

1.11.1.3 The method of mound construction and excavation would be in accordance with the Construction Code of Practice (Defra, 2009) taking into account the relevant methodology from the in Mineral Workings (IQ, 2021), as appropriate.

### 1.11.2 Temporary and Permanent Access Roads

1.11.2.1 Topsoils would be stripped along the alignment of the Temporary Access Roads by excavator and placed directly into bunds alongside the edge of the Temporary Access Roads within the Mona Onshore Development Area. These topsoil bunds would not exceed 3 m in height. All storage bunds intended to remain in situ for more than 3 months (or over the winter period) would be seeded and kept free from weeds.

### 1.11.3 Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor

1.11.3.1 For the storage of topsoils alongside the edge of the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor, the same principles would be applied as for the Temporary Construction Compounds described in section 1.11.1 of this Outline Soil Management Plan above.

1.11.3.2 With regards to the short term temporary removal of subsoils during construction, (i.e. cable laying within the cable trenches), the stripped subsoil horizons would be stripped and directly stored separately alongside the trench within the Mona Onshore Development Area and replaced in their pre-excavation sequence.

## 1.12 Ground preparation and soil replacement

### 1.12.1 Loosening operations

1.12.1.1 Following the removal of all construction materials and construction surfacing and prior to soil replacement, areas that have been stripped or where the subsoils have been subject to potential compaction would be loosened, if necessary, through subsoiling operations.

1.12.1.2 The depth to which the loosening would be required would depend on the nature of soil type and extent of any compaction that may have occurred. It would also need to consider the depth and location of underdrainage. The requirement would need to be assessed on site, prior to the works being undertaken.

1.12.1.3 The depth and the width between the tines of the subsoiler will be agreed with the landowner via the ALO. Inspection of the land pre and post subsoiling is common practice and is arranged and managed by the ALO.

### 1.12.2 Soil replacement

#### Temporary Construction Compounds

1.12.2.1 The topsoils would then be replaced in accordance with the Construction Code of Practice (Defra, 2009) taking into account the relevant methodology from the in Mineral Workings (IQ, 2021), as appropriate.

1.12.2.2 As described in Section 1.6 of this Outline Soil Management Plan, the replacement of the topsoils across these areas would be subject to onsite monitoring by the Principal Contractor together with the ALO to ensure that the appropriate soils handling method is implemented correctly.

1.12.2.3 These methods, if applied appropriately, enable the topsoils to be replaced, without trafficking over the newly loosened subsoil material, as far as possible.

### 1.12.3 Temporary Access Roads

1.12.3.1 Following loosening operations, the topsoils would be replaced by dozer or excavator, ensuring that whichever form of machine that is used, this does not run across loosened subsoil materials during the reinstatement operation.

### 1.12.4 Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor

1.12.4.1 The methods for the replacement of topsoil materials along the Onshore Cable Corridor and 400 kV Grid Connection Cable Corridor would be similar to those described for the Temporary Construction Compounds in section 1.12.2 of this Outline Soil Management Plan above.

1.12.4.2 For the subsoil horizons stored alongside the cable trenches for a short period of time, where more than one subsoil horizon has been stripped, the subsoil materials would be replaced (loose tipped) by excavator in sequence, with lower subsoils replaced first and then overlain by upper subsoils. This approach will also be used restore any drumlins affected by construction along the Onshore Cable Corridor. Drumlins are located to the north of the A548 and the B5381 crossroads as shown on Figure 1.2 of Volume 7, Annex 1.1: Aquifers, groundwater abstractions and ground conditions (Document Reference F7.1.1).

## 1.13 Soil handling and consistency tests

1.13.1.1 The assessment of whether soils are in a suitable condition to be handled will be applied is in accordance with Defra 2009 guidance and Supplementary Note 4 - Soil Wetness of the Good Practice Guide for Handling Soils in Mineral Workings (IQ, 2021), where appropriate.

1.13.1.2 The assessment would be based on ground and weather conditions and appropriate soil moisture and consistency tests.

1.13.1.3 The most appropriate methodology for handling and storage of the soils will then be determined and agreed via the final Soil Management Plan based on the plasticity and the moisture content of the soils.

## 1.14 Aftercare and handover

1.14.1.1 For the agricultural areas within the Mona Onshore Development Area, a 12-month aftercare period will apply in accordance with Article 29 of the development consent order (Document Reference C1, Article 29).

1.14.1.2 An aftercare plan would be produced 3 months prior to the commencement of the aftercare period for areas of the works (as they are completed) and agreed between the ALO and the landowner, which would include the following information:

- Cultivations to be undertaken, which would depend on the soil type and site conditions but is likely to include the use of a plough, harrow and roller
- Seed mixture to be used for initial grass establishment
- Soil samples would be taken from the topsoil bunds to be used in the restoration of the area to determine nutrient levels and inform proposals for lime and fertiliser applications.

1.14.1.3 At the end of the aftercare period the undertaker will no longer have possession of the land unless a longer period is agreed with the landowner. In any case, the undertaker will continue to work with the landowner to advise on management requirements, for example there would be an on-site review by the Principal Contractor and ALO to monitor the following:

- The physical soil characteristics of the restored land
- Identify any additional cultivations required
- Identify any further remedial measures that are required
- Collect samples to check soil nutrient levels and inform lime and fertiliser requirement
- Effectiveness of reinstated drainage.

1.14.1.4 The land would be handed back to the landowner as soon as practicable once the restored land is in a suitable condition to be returned to its former use.

## 1.15 References

Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites

IQ (2021) Good Practice Guide for Handling Soils in Mineral Workings