TOBIN

Ballyfasy Wind Farm
County Kilkenny,
Spoil Management Plan

BUILT ON KNOWLEDGE

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1. INTRODUCTION

The proposed project, known as Ballyfasy Wind Farm is located in County Kilkenny. The proposed project (see Figure 1-1) comprises:

- The wind farm site to include a wind farm of 10 no. turbines, onsite 110 kilovolt (kV) substation and ancillary infrastructure such as turbine foundations, hardstanding areas, borrow pits and access roads;
- Grid Connection Options (GCO) (two options being considered); and
- Works along the proposed Turbine Delivery Route (TDR).

Two options for the grid connection are currently being considered to connect the proposed project to the national grid. A single grid connection will be constructed for the proposed project.

GCO One proposes to install a 110 kV underground cable from the proposed onsite substation to the consented Castlebanny Wind Farm 110 kV substation approximately 12 km to the north.

GCO Two will connect the onsite substation with the existing 110 kV Great Island-Kilkenny overhead line which crosses approximately 2 km to the east of the proposed wind farm site.

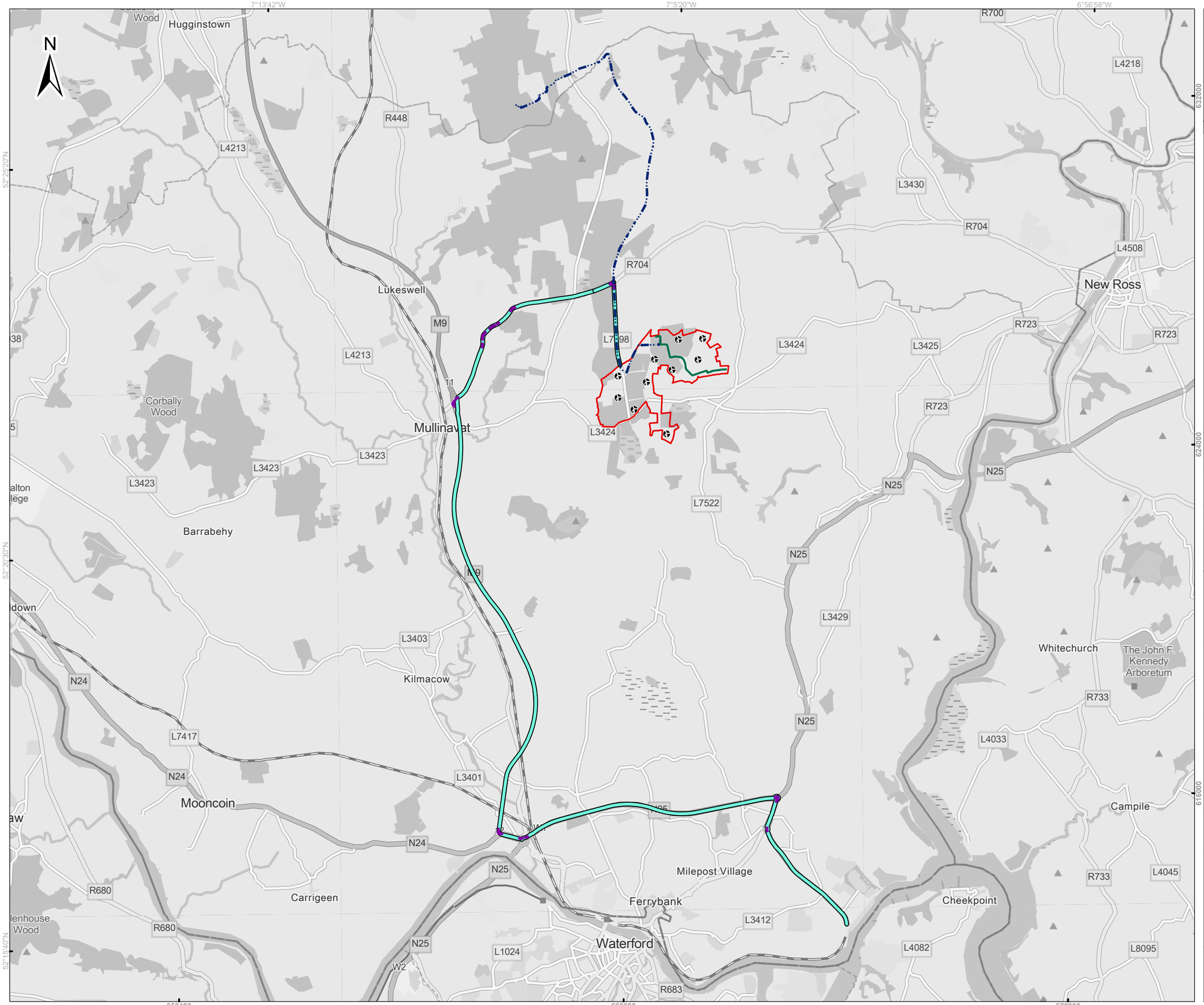
The proposed project also comprises facilitating works on the public road network and at private properties to accommodate the delivery of turbine components.

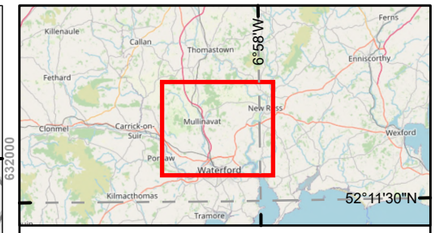
The proposed wind farm site is located in the southern portion of County Kilkenny between the villages of Listerlin to the northeast, Mullinavat to the west, Glenmore to the southeast, and Slieverue to the south. The proposed wind farm site is spread across the townlands of Ballywairy, Bishopsmountain, Knockbrack, Ballymartin, and Ballyfasy Upper, Co. Kilkenny.

The landscape is a mixture of agricultural lands with areas of coniferous forestry. Two watercourses traverse through the wind farm site; the Arrigle River and the Smartcastle Stream. There is an extensive network of existing internal access roads across the site to facilitate the ongoing forestry operations as well as local access to farmlands.

The topography of the wind farm site varies from around 140 metres Ordnance Datum (mOD) to 220 mOD. The highest points are found in the north-east areas, while the southwest corner has the lowest elevation.

No peat was encountered on the proposed wind farm site. No peat was encountered at the proposed turbine locations or at the proposed onsite substation location.





Legend

- Wind Farm Study Area
- Turbine locations
- TDR Works Areas
- Turbine Delivery Route

Grid Connection Options

- Option 1
- Option 2

0 1.5 3
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

Rev	Date	Description	By	Chkd.
A	07/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 1-1:
Proposed Project Extent

Scale @ A3: 1:80,000

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1.1 OBJECTIVE

The role of the Spoil Management Plan (SMP) is to demonstrate that the management of soils excavated during construction of the proposed project has been considered and will be treated appropriately during the construction process.

This SMP also includes a monitoring programme which will be implemented during the construction phase of the proposed project. The SMP acts as a live document arising from information presented during the consenting process, possible planning conditions and the content of which will be updated as work is carried out on site.

The SMP contains some drainage guidelines for construction works and for management of soils on site. It should be noted that the control of water quality and drainage measures for site is outlined in detail in Chapter 9 (Hydrology and Hydrogeology) of the Environmental Impact Assessment Report (EIAR) and within the Construction and Environmental Management Plan (CEMP), Appendix 2-6 of the EIAR.

The SMP outlines the overall design approach that has been applied to the proposed project to minimise disruption and aims to reuse soils excavated during construction will be taken. The SMP identifies appropriate and industry proven methods for the reuse of soils, without significant environmental or health and safety implications, and minimise risk in terms of human health.

1.1.1 Guidance

The following guidance specifically relates to wind farm construction on land:

- Best Practice Guidance to Planning Policy Statement 'Renewable Energy' (2009); and
- Good practice during wind farm construction, A joint publication by Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland (2015).

These documents are considered to be best practice in Ireland and are therefore appropriate for use within this SMP.

The guidance identifies three main stages in the development process and describes what data should be gathered and assessed at each to inform a site specific SMP:

- Stage 1: Environmental Impact Assessment (EIA);
- Stage 2: Post-consent / pre-construction; and
- Stage 3: Construction.

This SMP has been prepared in accordance with the principles in the guidance for Stage 1 and proposes that prevention and re-use are the most appropriate means of managing materials excavated during construction at the proposed wind farm site. This report details the methodologies required to assess all potential surplus materials and presents the expected volume of excavated materials and required reuse volumes for reinstatement and restoration purposes.

2. CONSTRUCTION ACTIVITIES

Spoil management of the construction activities are covered individually in this report.

2.1 EXCAVATIONS OF SPOIL FOR INFRASTRUCTURE FOUNDATIONS

The material encountered in the trial pits excavated at each proposed turbine location was soft to stiff generally firm with depth - see Chapter 8 (Land, Soils and Geology) of the EIAR. Deeper excavations to more competent material will be required to construct the proposed turbine foundations.

During proposed turbine construction, soils will be excavated to the substrate to make room for the concrete turbine foundation, and for a small working area surrounding the foundation footprint. Typically, turbine bases are 28 m in diameter with detailed foundation design being dictated by the local ground conditions and the requirements of the turbine supplier.

Volume calculations provide an approximate estimation of fill that will be required for all the proposed turbine foundations. Due to the nature of the development, i.e., deposition of soil, there is the potential for impacting the shallow soil and geology environment. Excavation of soil and subsoil will be required for construction of works for the installation of access roads. This will result in a permanent removal and relocation of soil and subsoil.

The calculated volume of soils is approximately 124,000 m^3. In order to utilise and reuse the soils, the construction works will be sequenced as follows:

- Construction works to commence to the centre of the proposed wind farm site, substation location and compound locations;
- Material from borrow pits and quarries utilised to construction turbine hardstands and roads;
- Construction of roads at adjacent lands to turbines T1 and T10, to T2 and to T8; and
- Reinstatement of borrow pits in a phased basis.

Soils will all be relocated within the proposed wind farm site. Three no. temporary deposition areas are included within the wind farm site design (see Figure 2-1). Due to the proposed phasing of the works, the central section of the proposed wind farm site and access roads will be constructed first. The borrow pits will be available to accept material at the later stages of the construction works.

The proposed excavations will be battered at a 1:2 to 1:3 gradient. Once excavated, the proposed turbine foundation is installed. The works at the turbine base will require excavation through soils to a competent founding stratum. This will be confirmed at detailed design stage following additional ground investigation.

Borrow Pits and deposition areas

Bedrock is present underlying the gravelly till. An initial walkover of the proposed wind farm site was undertaken, and a review of the proposed wind farm site investigations have been carried out. There are two borrow pit locations and three temporary deposition areas on site (see Figure 2-1).

The two borrow pits, referred to herein as Area 1 and 2, are located in the south and southeast of the proposed wind farm site. With a shallow excavation in the area, material up to 6 m bgl is accessible with excavators. A summary of potential volumes is included in Table 2-1.

Table 2-1: Borrow Pit - Potential Material Volumes and Summary of the Area Characteristics

Area	Material Type	Potential Volume (m^3)	Ecological/Other Constraints
1	Moderately weak thinly laminated SHALE, bedrock at 1.2 m.	>300,000 t 6 m x 30,000 m^2 180,000 m^3 x 2t/m^3 Overburden 50,000 m^3	No significant ecology constraints, no archaeological features encountered
2	Gravelly sandy CLAY with frequent cobbles, possible bedrock at 2.5 m.	>300,000 t 6 m x 30,000 m^2 180,000 m^3 x 2t/m^3 Overburden 50,000 m^3	No significant ecology constraints, no archaeological features encountered

A crane hardstanding is required adjacent to each proposed turbine for the purpose of turbine installation and maintenance. Each crane pad will require the full excavation of soil (where present) to substrate. Replacement with rock is required to provide a suitably stable surface for turbine component handling. Once excavated, soil will be re-used to batter the edges of platforms grading the bases into the local topography.

2.2 Excavations for the Underground Cables

The proposed wind farm will connect to the national grid via an underground cable placed within site access roads and potentially the public road corridor if GSO One is constructed (see Figure 1-1). Final detailed design of the grid connection will be subject to receiving a grid connection offer and EirGrid/ESBN post planning system studies.

See EIAR Appendix 1-2 for drawings of the proposed grid connection details and Appendix 2-2 for the Grid Connection Methodology Reports.

7°7'0"W
7°6'0"W
7°5'0"W
52°23'0"N
52°22'0"N
628100
625000
660000
661500
663000

N

Permanent site entrance (5)
Permanent site entrance (1)
Temporary road crossing (1 & 2)
Permanent site entrance (2)
Permanent site entrance (4)
Temporary road crossing (3)
Permanent site entrance (3)

T1
T3
T4
T5
T6
T7
T8
T9
T10

Legend

- Wind Farm Study Area

Grid Connection Options

- Option 1
- Option 2

Site Layout

- Turbine locations
- Bat Buffer
- Hardstand
- Substation
- Compounds
- Met Mast Location
- Borrow Pits
- Proposed Permanent Access Roads
- Proposed Passing Bay
- Existing Road
- Clear Span Bridges
- Proposed Deposition Area
- Oversail Area
- Proposed Pond

0 250 500
Meters

Spatial Reference
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Rev	Date	Description	By	Chkd.
A	07/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-1:
Proposed Wind Farm Site Layout

Scale @ A3: 1:10,000

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Map Ref: 11474-002..SMP-LAY.INFR-P.App.BO-TOB-A

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2.2.1 Cable Trench Construction Methodology

This methodology includes procedures that are to be included during the proposed construction phase. The methodology is not intended to cover all aspects of proposed construction such as drainage and environmental considerations.

With respect to placement of arisings from excavation, the guidelines below are to be followed.

- All proposed excavations within soils are to be adequately supported or battered to a safe slope inclination. This slope inclination will be reviewed during construction, as appropriate;
- Proposed excavations shall always be kept reasonably free from water; and
- Backfill requirements for the cable trench will be decided as part of the detailed design/construction.

Excavated material will be stored near the excavations and reused for reinstatement works or removed to a designated temporary deposition area on site. Any soil required for reinstatement that will be temporarily stockpiled at a temporary deposition area will be placed at least 50 m back from the nearest watercourse on level ground and will be ringed at the base by silt fencing and be regularly monitored by a designated competent person for signs of solids escape. In which case an additional line of silt fencing with straw bales will be added in line with the relevant environmental control measures.

2.3 Construction of New Access Roads

2.3.1 Access Road Construction Types

To provide access within the site and to connect the proposed wind turbines and associated infrastructure, existing access roads will be upgraded or new access roads will need to be constructed. The identification of the access road layout is an iterative procedure. While the majority of roads on the proposed wind farm site will be constructed on mineral soil, there are some locations where construction on soft soils will be required.

The preliminary design has considered the following key factors:

- Requirement to minimise disruption to soil hydrology;
- Minimise excavation arisings;
- Serviceability requirements for construction and wind turbine delivery and maintenance vehicles; and
- Buildability considerations.

Whilst the above key factors are used to determine the proposed access road design, the actual construction technique employed for a particular length of access road will be determined on the prevailing ground conditions encountered along that length of access road. No peat is encountered on the proposed wind farm site and therefore no floating roads are proposed.

Proposed access roads will be constructed to enable the construction works to take place and to provide access to turbine locations and infrastructure of the proposed wind farm site. The proposed roads will be constructed using unbound crushed aggregates and incorporate drainage to maintain the performance of the pavement during wet weather. The access roads will be excavated down to and constructed up from a competent geological stratum with adequate cross drainage to prevent water accumulation on the upgradient side. Ground

investigations in the form of probing and trial pitting have been carried out on site to inform the depth of excavation and upfill required for the access roads.

2.4 General Access Road Construction Techniques

Prior to the construction of any access roads on the proposed wind farm site a detailed design will need to be carried out. Given the topography of the proposed wind farm site, excavated access roads are deemed an appropriate construction technique for the majority of the proposed wind farm site. Existing access roads will also be upgraded where required.

This methodology includes procedures that are to be included in the construction phase to minimise any adverse impact on soils. The methodology is not intended to cover all aspects of construction such as drainage and environmental considerations.

- Interceptor drains will be installed upslope of the access road alignment to divert any surface water away from the construction area;
- Proposed excavation of roads shall be to the line and level given in the design requirements. Excavation will take place to a competent stratum (as agreed with the proposed wind farm site designer);
- Access road construction will be carried out in sections of approximately 50 m lengths; i.e. no more than 50 m of access road will be excavated without re-placement with stone fill unless otherwise agreed with the resident engineer on the proposed wind farm site;
- The surface of the finished excavated access road will be finished above current ground level;
- A layer of geogrid/geotextile may be required at the surface of the competent stratum (to be confirmed by the designer); and
- A final surface layer shall be placed over the excavated access road, as per design requirements, to provide a road profile and graded to accommodate wind turbine construction and delivery traffic.

Access roads to the proposed wind farm site require careful monitoring to ensure that there is no significant standing water forming, which would lead to potholes in the surface. If areas of road are causing concern, repairs will be carried out in favourable, preferably dry, conditions, to ensure that there is no saturation of the surface of the road.

3. EXCAVATION AND STORAGE OF ARISINGS

The handling, storage and re-use of excavated materials are of importance during the construction phase of the proposed project. The site is a mixture of forestry and agricultural lands. It is intended that unsuitable founding soils will be placed at the borrow pit areas.

Any surplus excavated material will be reused, either in profiling/landscaping or constructing berms as close to the excavation areas.

Should GCO One be constructed, any excavated waste materials will be stored in the designated works compound before being removed off site to a permitted waste facility or for recycling.

3.1.1 Excavation & Storage of Arisings Methodology

This methodology includes procedures that are to be included in the proposed construction phase to minimise any adverse impact on soil stability. The methodology is not intended to cover all aspects of construction such as drainage and environmental considerations.

Prior to any excavations, the Principal Contractor will produce a detailed method statement identifying where and how excavated materials will be used in reinstatement or landscaping works. Specific requirements for the excavation, handling, storage and reinstatement of soil will be outlined in this detailed method statement. The Principal Contractor will consider potential impacts on downstream receptors and the potential for instability issues with the excavated material.

Classification of excavated materials will depend on their identified re-use in reinstatement works. At the proposed wind farm site it is anticipated that the material to be excavated will soil and mineral subsoil.

3.2 General Recommendations for Good Construction Practice

The recommendations are incorporated into this document and summarised below. The following outlines an overview of the tasks for the proposed construction phase:

- Client's Geotechnical Engineer to provide a Geotechnical Induction to all contractor supervisory staff.
- Client to appoint a Site Geotechnical Supervisor to carry out supervision of the proposed wind farm site works as required. The Site Geotechnical Supervisor will be required to inspect that works, identifying new risks and ensuring all method statements for works are in place and certified.
- Retain a Site Geotechnical Folder which contains all the information relevant to the geotechnical aspects of the proposed wind farm site including but not limited to risk register, site investigation information, method statements etc.
- Client's Geotechnical Engineer/Site Geotechnical Supervisor to approve the method statement.
- Contractor to provide toolbox talks and on-site supervision prior to and during the works.
- Daily sign off by supervising staff on completed works.
- Implementation of emergency plan and unforeseen event plan by the contractor.

3.2.1 Operation and Maintenance Phase

The following outlines an overview of the tasks for the proposed operation and maintenance phase:

- Communication of residual stability risk to appropriate site operatives.
- Ongoing monitoring of residual risks and maintenance if required. Such items would consist of regular inspection of drains and culverts to prevent blockages and inspections of specific areas such as settlement ponds and access roads after a significant rainfall event.
- Routine inspection of the proposed wind farm site by contractor to include an assessment of ground stability conditions (e.g. cracking, excessive road settlement, disrupted surface, closed-up drains) and drainage conditions (e.g. blocked drains, absence of water in previously flowing drains, springs, etc).

3.2.2 Decommissioning Phase

All above proposed ground infrastructure at the wind farm site (e.g. turbines) will be disassembled with the exception of the onsite 110 kV substation which will remain part of the national electricity network. The remaining infrastructure will remain in place, therefore very limited excavations will be required for decommissioning.

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