Fosse Green Energy



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EN010154

7.10 Framework Soil Management Plan (Tracked)

VOLUME

7

Planning Act 2008 (as amended)

Regulation 5(2)(q)

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2009 (as amended)

Fosse Green Energy

Development Consent Order 202[ ]

7.10 Framework Soil Management Plan

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Framework Soil Management Plan

Fosse Green Energy

April 2025

AECOM Ltd

Reference: 230407.SM.04

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1.0 SCOPE & OBJECTIVES

The Services	Framework Soil Management Plan	
The Client	AECOM Ltd	
Appointment Details	The Services have been carried out in accordance with the revised Proposal dated 4 April 2023 and REL's Terms and Conditions of Engagement, (together "**the Agreement**") as accepted by the Client on 5 April 2023.	
Site Name	Fosse Green Energy ("**the Proposed Development**")	
Site Address	Lincoln, LN6 9GF ("**the DCO Site**")	
Proposed Use	The Proposed Development will comprise the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating facility, with on-site Battery Energy Storage System (BESS) and other associated infrastructure, with a total capacity exceeding 50 megawatts (MW). The Proposed Development will export and import electricity to the national electricity transmission network via a buried 400 kilovolt (kV) import and export cable circuit of approximately 10km in length, connecting to the national electricity transmission network at the proposed National Grid substation near Navenby.	
Planning Application	No additional information relevant to this assessment is available on the PINS website: https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010154	
Information Sources (Where appropriate documents are contained in appendices with data extracts provided and summarised within pertinent sections of this report. List not exhaustive)	**Online Source**	Magic Web Mapping Service, DEFRA, 2023.
		British Geological Survey (BGS) Database and Mapping.
		BGS Geoindex Web Mapping Service.
		BGS 1: 50,000 scale Provisional Series, Geological Map, England and Wales, Sheet Number 114 (Lincoln), available on the BGS map portal.
		Ministry of Agriculture, Fisheries and Food (MAFF), Post-1988 Agricultural Land Classification Surveys Database and Mapping.
		Google Historic Aerial Imagery.
		National Library of Scotland Historical Ordnance Survey England and Wales, 1855-1956 Maps.
	Documentation Source	MAFF, 1988, Agricultural Land Classification of England and Wales – Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.

		Soils and their use in Eastern England, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map.
		Department for Environment Food and Rural Affairs (DEFRA), March 2011, The Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
		Contaminated Land: Applications In Real Environments (CL:AIRE), March 2011, The Definition of Waste: Development Industry Code of Practice (DoWDICoP).
		BS3882:2015 Specification for topsoil.
		BS8601:2013 Specification for subsoil.
	Previous Reports	No previous third party reports are available for the site. REL report ref: 230407.AC.03, Agricultural Land Classification Report, dated: October 2024.
	Site Works	No site visit was undertaken as part of this assessment and report.

2.0 SITE DETAILS

National Grid Ref.	Approximate centre of surveyed site area: 490329, 362661
Ground Level Topography	Range 10-25m AOD, average for site: c11m AOD
Site Area	Total: 1368 hectares (ha). Comprises Principal Site: 1070ha and Cable Corridor: 351ha.
Location	The subject site is located south and southwest of Lincoln City centre.



Figure 1: DCO Site Boundary (highlighted in red)

Current Site Description and Activities	The subject site comprises agricultural fields which are mostly used for arable crop (based on observations made during the site visit), the crop was viewed as Wheat and Maize.
Surrounding Land Uses	Surrounding land uses comprise agricultural fields, residential dwellings, main roads and two water treatment centres.

3.0 METHODOLOGY

3.1 Introduction and Legislation

3.1.1 Soil is vulnerable to being lost through mismanagement where there is not enough consideration given to planning and supervision of the handling, transportation, storage, and placement of this finite resource. The Soil Management Plan (SMP) will be implemented alongside any Materials Management Plan (MMP) and/or Site Waste Management Plan (SWMP) put in place on the site.

3.1.2 As such, the following guidance, which shall be adhered to, is in place to protect soil resources during the construction phase of any project:

- DEFRA – The Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, March 2011 (Ref 1); and
- CL:AIRE - The Definition of Waste: Development Industry Code of Practice (DoWDICoP). March 2011 (Ref 2).

3.1.3 The SMP shall include the following:

- Areas of soil to be protected from earthworks and construction activities;
- Areas and types of topsoil/subsoil to be stripped, haulage routes and stockpile locations; and
- Methods for stripping, stockpiling, respreading and ameliorating landscape soils.

3.1.4 These guidelines therefore establish the following objectives related to the construction phase:

- Avoid reducing soil quality due to mixing soil types (limits options for allocation);
- Avoid contamination with construction waste;
- Avoid damaging through compaction or any loss of soils due to poor handling, haulage and stockpiling methodology;
- Avoid contaminating soil as a result of accidental spillage; and
- Avoid loss of soils due to erosion.

3.1.5 If the above-mentioned objectives can be met, this works to mitigate against potential impacts to soil resources and to allow for the resource to have the best chance of being allocated to a specific use. This in turn would limit the amount of unallocated or surplus material.

3.2 Background

3.2.1 This document has been provided in support of a Development Consent Order (DCO) application.

3.2.2 This document is written as a Framework SMP (FSMP) which sets out the principles and procedures to be implemented to manage site soils.

3.2.3 This document has been collated in conjunction with intrusive site investigations and the collection of suitable data to inform a FSMP document to outline the site and soil-specific requirements.

3.2.4 A list of requirements is included in Section 7 which outlines the obligations which shall be included within the SMP.

4.0 PRE-CONSTRUCTION PLANNING

4.1 Soil Resource Survey

4.1.1 A Soil Resource Survey (SRS) is required to be carried out by a suitably qualified and experienced soil scientist or practitioner to inform the site working strategies, i.e. the SMP, any SWMP and/or MMP.

4.2 BGS Published Data

4.2.1 Records do not indicate any significant Made Ground mapped on the DCO Site.

4.2.2 The site is situated within an area where the centre and northwest of the site is mainly free from superficial deposits. Superficial deposits of the Balderton Member (sand and gravel) may be present on the north and west of the site, with the centre and south of the site being underlain by a succession of River terrace Deposits (sand and gravel), Alluvium (clay, silt, sand and gravel), the Balderton Sand and Gravel Member and the Flubeck Sand and Gravel Member. Where the site is shown to be free from superficial deposits, it should be assumed that residual soils are present, comprising clay, sand or gravel derived from the *in-situ* weathering of bedrock.

4.2.3 The bedrock geology is indicated as the Scunthorpe Mudstone Formation (interbedded mudstone and limestone) across the northwest of the site and the Charmouth Mudstone Formation across the west of the site. The bedrock geology is indicated as the Lincolnshire Limestone Formation (Limestone) across the east of the site around Navenby.

4.3 Intrusive Soil Survey Data

4.3.1 The soil surveys identified four Soil Types across the Principal Site area. Generalised profiles of the soil types encountered are described below (**Table 1~~Table 1~~**) however, some localised variations were recorded.

Table 1: Soil Types Identified on-site

	DEPTH (CM)	TEXTURE	COLOUR	STONES (%)	MOTTLES	STRUCTURE
Soil Type 1	0-25	Loamy Medium Sand (LMS)	Very Dark Brown (10YR 2/2)	5	No	Fine Subangular Blocky
	25-70	Loamy Coarse Sand (LCS)	Strong Brown (7.5YR 5/6)	15	No	Medium Subangular Blocky
	70-100	Loamy Coarse Sand (LCS)	Brown (7.5yr 5/2)	15	No	Angular Blocky
Soil Type 2	0-20	Sandy Clay Loam (SCL)	Very Dark Grey (10yr 3/1)	5	No	Medium Subangular Blocky
	20-70	Sandy Clay (SC)	Dark Yellowish Brown (10YR 4/4)	15	Many Medium Grey (GLEY 2 7/1 5B) and Ochreous (10YR 6/8)	Moderate Coarse Prismatic
	70-120	Sandy Clay (SC)	Yellowish Brown (10YR 5/4)	15	Many Medium Grey (10YR 7/2)	Strong Coarse Prismatic
Soil Type 3	0-20	Heavy Silty Clay Loam (HZCL)	Dark Brown (7.5yr 3/3)	15	No	Medium Subangular Blocky
	20-120	Silty Clay (ZC)	Yellowish Brown (10YR 5/4)	15	Numerous Medium Ochreous (7.5 YR 5/8) and Grey (GLEY 15/10Y) Mottles	Moderate Coarse Prismatic
Soil Type 4	0-35	Heavy Clay Loam (HCL)	Dark Grey (10yr 4/1)	5	No	Medium Subangular Blocky
	35-105	Clay (C)	Greyish Brown (10YR 5/2)	5	Many Medium Ochreous (10YR 6/8)	Moderate Coarse Prismatic
	105-120	Clay (C)	Grey (10YR 6/1)	15	Many Medium Ochreous (7.5YR 5/6)	Strong Coarse Prismatic

4.4 Soil Budget

4.4.1 An outline Soil Budget has been provided using the surveyed soils description identified on the Principal Site, together with the indicative Proposed Layout plans provided.

4.4.2 Expected outcomes:

- Identification of any surplus or deficiencies in soil resources identified on site for use specifically within the construction phase;
- Identification of storage requirements for surplus materials; and
- Adjustments to the soil budget based on site-specific conditions for the duration of the development.
- Determine if there is outstanding data for the remaining DCO Site areas which are still to be surveyed.

4.4.3 It is anticipated that no topsoil from the battery storage part of the site will be suitable for reuse as an engineered fill and will only be suitable for reuse within Public Open Space (POS) areas, roadside verges and embankments.

4.4.4 The total Principal Site area is taken as 1070 ha, or 10,710,000 m^2. There have been four different soil types identified across the Principal Site. For the purposes of this assessment, the soils on the Principal Site have been broken down into the general soil types of Light, Medium or Heavy textures within **Table 2** below. This is for the purposes of outlining best practice for soil handling.

Table 2: Division of Soil Textures on-site

Soil Texture	Example Soil Textures
Heavy soils	Heavy clay loam, heavy silty clay loam, sandy clay, silty clay, clay
Medium soils	Sandy clay loam
Light soils	Loamy sand

4.4.5 Proposed cut and fill designs will impact the volumes of soil resources which can be reused on-site.

4.4.6 This document will be subject to review following the completion of intrusive site investigations and the collection of additional data across remaining unsurveyed areas of the DCO Site to inform the SMP.

4.5 Roles and Responsibilities

4.5.1 The effective implementation of the SMP requires that roles and responsibilities are clearly defined and understood. Specific job titles, roles and responsibilities will be defined by the contractor; however, in specific relation to soil management and the implementation of the SMP, the contractor will appoint a specialist soils consultant whose roles and responsibilities are expected to be similar to those described below:

- liaison between the contractor, landowners and regulators;
- assessment of the soil condition before, during and after the works in accordance with agreed soil handling methods;
- assessing compliance of the work on site with the SMP; and location or task specific construction method statements (where required);
- signing off the quality of reinstatement (with respect to soils) to allow for the commencement of the aftercare;
- ensuring the adequacy of the detailed aftercare programme and its annual updates (if required);
- soil sampling and production of annual aftercare reports; and
- signing off completion of the aftercare.

4.6 Requirements

4.6.1 This document shall be revised following issue of intrusive (Phase 2) ground investigations for the purposes of providing suitable chemical testing data for the soil resources available on site and completion of soil surveys across outstanding areas of the site DCO Site to provide a firm Soil Budget.

4.6.2 Any site investigations will need to provide the following information to input data into the Soil Budget:

- Soil analysis: including pH, salinity, particle size analysis, organic matter, nutrients, potential contaminants;

- Determination of site-specific plans for the handling, transportation, storage and placement of the identified soil types; and
- Determine potential uses for the identified soils.

4.6.3 There is also outstanding soil survey data for the remaining areas within the red line boundary.

4.6.4 Specific roles and responsibilities shall be allocated for the project prior to construction and these persons shall be outlined in the SMP.

5.0 SOIL MANAGEMENT DURING CONSTRUCTION, OPERATION AND DECOMMISSIONING

5.1 On-Site Management

5.1.1 For each phase of the Proposed Development there shall be a site-specific SMP, which should demonstrate:

- Areas to be left in-situ and areas to be stripped (if applicable);
- Methods for stripping, stockpiling, placement and ameliorating (where necessary);
- Location(s) of temporary stockpiles, volumes, soil type, proposed soil use;
- Provide details for the person responsible for supervising the works.

5.1.2 The works shall involve a suitably qualified and experienced soil scientist or practitioner during the construction stage. All site-specific method statements should be made available to site supervisors.

5.1.3 Any changes to the approved method statement should be agreed in writing with the regulator(s).

5.1.4 The following should be included within the method statement:

- Maps showing topsoil and subsoil types, areas to be stripped and areas to be left unstripped (if applicable);
- Site-specific methods for stripping, hauling, stockpiling and ameliorating and placement of soils (where applicable);
- Location of soil stockpiles per soil type;
- Schedules of volumes for each material;
- Expected after-use for each soil resource (when confirmed);
- Site specific method statement will also be developed specifically for the rehabilitation of existing spoil sites (where applicable); and
- Defined responsibilities for personnel involved.

5.2 Person Responsible for Supervision

5.2.1 A site representative shall be appointed to be the person responsible for the management of on-site practices to ensure the implementation of the SMP and

any associated SWMP or MMP. This person shall be a suitably qualified and experienced soil scientist or practitioner.

5.3 Soil Stripping

5.3.1 Soils differ in their susceptibility to damage, based on the soil texture, as outlined in **Table 3** below.

Table 3: Potential Damage to Soils by Texture

Soil Texture*	Potential for Structural Damage when Dry**
Heavy soils (>27% clay)	Low
Medium soils (<27% clay)	Medium
Light (silty or sandy) soils	High

*NB: *Terms derived from Natural England guidance TIN037, ** Taken from Institute of Quarrying Guidance – Good Practice Guide for Handling Soils in Mineral Workings*

5.3.2 The soil moisture content must also be taken into account during soil stripping and is dependent upon the soil textures. Soil may be irreparably damaged if handled when too wet (i.e. at or near to the plastic limit), causing structural damage and potentially becoming compacted.

5.3.3 Details of the on site soil moisture assessment techniques shall be outlined in the SMP. This may include mix of rapid instrument-based measurements and/or manual tests to assess soil and material moisture. The consistency of the soil can be determined in the field by a soil specialist and/or the Environmental Manager (who will be subject to specialist soil training) prior to any soil handling activity. A field suitable method for assessing whether soils are in a dry and friable condition based on plastic limits is set out in Part One (Supplementary Note 4 – Table 4.2) of the Institute of Quarrying's Good Practice Guide for Handling Soils in Mineral Working, and this approach together with the associated rainfall protocols will be adopted. It is a simple, on-site manual test that involves collecting a golf-ball sized amount from the working depth, removing stones over 20mm, and checking if it breaks apart easily between fingers, cannot be rolled into a coherent ball, and is suitable for

handling, moving, and reinstatement. It is testing whether the soil is below the plastic limit and therefore friable, allowing soil handling to proceed, or if the plastic limit is exceeded and structural damage could occur to the soil.

5.4 Topsoil

5.4.1 Soils on site comprise topsoil to between 20cm and 35cm depth, with some variability anticipated across the site. The majority of the topsoil on site falls within the Heavy texture and is therefore susceptible to degradation and compaction when handled wet and above the plastic limit. Topsoil is to be stripped in accordance with the methods as outlined in the DEFRA document (Ref 12), Section 5.2 and must include the following protocols:

- Surface vegetation must be removed first, by blading off, by scarification and/or raking. Surface vegetation must not be included within the topsoil matrix.
- Topsoil must be stripped to a predetermined depth or at a predetermined distinct colour change (to be confirmed in the SMP) from all areas to be impacted by construction activities.
- Topsoil preferably to be removed in sequential strips (widths to be confirmed in the SMP).
- Topsoil stripping must consider specific recommendations found within the SRS and/or site-specific SMP.
- Selection of appropriate equipment and techniques for topsoil stripping includes tracked plant as far as practicable.
- Any significant vehicular movement over topsoil must be restricted.
- Stripping of topsoil must only occur in the right weather conditions, not in adverse weather conditions, such as sustained heavy rainfall (>10mm in 24 hours).
- The handling of topsoil must be minimised as far as practicable; preferably handle topsoil only twice.
- The stripping of topsoil must be supervised by a competent person who has read and acknowledged the requirements detailed within the SMP and any other relevant documents.
- Under no circumstances may topsoil and subsoil be mixed.
- Appropriate training must be undertaken with relevant site-staff.

5.5 Subsoil

5.5.1 The majority of the site subsoils fall within the Heavy texture and is therefore susceptible to degradation and compaction when handled wet, above the plastic limit. Subsoil is to be stripped in accordance with the methods as outlined in the DEFRA document (Ref 12), Section 5.3 and must include the following protocols:

- Subsoil stripping depths depend on the correct identification of the sub-soil types following confirmation from intrusive site investigations (to be confirmed in the SMP).
- Subsoil stripping must consider specific recommendations found within the SRS and/or site-specific SMP.
- Stripping of subsoil must only occur in the right weather conditions, not in adverse weather conditions.
- Subsoils of different quality and composition should not be mixed.
- The stripping of subsoil must be supervised by a competent person who has read and acknowledged the requirements detailed within the SMP and any other relevant documents.
- Appropriate training must be undertaken with relevant site-staff.

5.6 Haulage Routes

5.6.1 Prior to the commencement of soil stripping works on site, the haulage routes for the movement of the soils within the site should be determined so as to avoid trafficking over areas of the site planned to be stripped. In addition, the following should be taken into account:

- Appropriate haulage vehicles shall be chosen based on a number of factors, including; soil type for movement, weather conditions and the haulage route.
- Haulage vehicles must not be overfilled and must only carry one soil type predetermined temporary stockpile location.
- Vehicles are to keep to designated haulage roads only.
- Speed limits must be set in order to ensure road safety and to aid dust suppression along haulage routes. In addition, to reduce the amount of dust, routine dust suppression must be undertaken on all active haulage roads.

- Haulage routes must consider specific recommendations found within the SRS and/or site-specific SMP.
- Haulage routes must be mapped so as not to pose a potential treat to pollution of controlled waters on and near the site.
- Appropriate training must be undertaken with relevant site-staff.

5.6.2 Predetermined haulage routes must be agreed within the SMP prior to confirmation of site layouts.

5.7 Soil Stockpiling

5.7.1 In order to enable reuse on site at a later stage, soils should be stored in temporary stockpiles. Soils should be handled in accordance with the methods as outlined in the DEFRA document (Ref 12), Section 5.4 and must include the following protocols:

- Stockpiling of surplus material must be limited as far as is practicable to avoid unnecessary handling of soil resources. It the surplus material cannot be allocated directly from site, the material should be allowed to be stockpiled in designated areas identified for surplus fill material temporary sites.
- Soil resources may be stockpiled in temporary stockpiles for a significant period of time in accordance with to the phasing of the development (where applicable). Temporary stockpile locations must not present a risk to any sensitive environments. If temporary stockpile locations are to be located within designated open space areas, they are to maintain and/or re-establish an equivalent degree of ecological value once they are rehabilitated.
- Stockpiling must not cause soil erosion, pollution of any watercourses or stormwater inlets or increase the risk of flooding.
- Separate sites must be allocated for different types of soil resources (where possible).
- Minimise the length of time soil resources are stockpiled before allocation.
- Appropriate training and signage must be implemented.
- Stockpiling must consider specific recommendations found within the SRS and/or site-specific SMP.
- Stockpile heights are to be guided by the recommendations found within the final SRS and/or site-specific SMP, generally 2m to 4m maximum height would be deemed acceptable to avoid risk of compaction.
- A period of drying and possibly cultivation may be required in order to aerate wet soils.

- Restrict the amount of water that can get into dry stockpiles during the storage period by covering stockpiles, where practicable.
- Soils stored for later reinstatement on-site will be stored in appropriate bunds.

5.7.2 In addition to the above, the SMP must contain details for the following:

- Maps of topsoil/subsoil types, areas to be stripped and areas to be left in-situ (where applicable);
- Confirmed methods for soil stripping, stockpiling, respreading and amelioration;
- Stockpiling locations with specific contents i.e. Topsoil Type A, Subsoil Type B etc; and
- Schedule of volumes for each material.

5.8 Temporary Stabilisation of Stockpile Areas

5.8.1 The following protocols must be followed as a minimum in order to stabilise temporary stockpile areas:

- Ensure slope stability by battering embankments to 1:3 slopes.
- Slopes may be required to be vegetated as the preferred means of erosion control. Note that stockpiles may only be left un-vegetated if they are to be moved within 3 months. If left un-vegetated such stockpiles must be covered in some other manner so as to ensure no wind erosion impacts.
- Where a significant risk of erosion exists, suitable erosion control measures must be installed, e.g. use of hessian matting, straw bales, and/or geotextile silt fencing.
- Water must be allowed to collect long enough behind erosion controls, to allow sediment to settle out of suspension. As such, careful design consideration must be given to the implementation of adequate stormwater control measures on these sites.

6.0 POST WORKS ALLOCATION

6.1 Options for Spoil Reuse, Recycling and Disposal

6.1.1 A number of options are available for reuse of soil stripped from the site. Appropriate handling of the site soil resources provides the best opportunity for the reuse of the soil resources within a specific allocation.

6.1.2 An overview of the potential options is presented below. Please note that all these options are subject to following the appropriate permits/waste transfer legislation and the associated testing required. This testing would include conformance with BS3882:2015 (Ref 14) and BS8601:2013 (Ref 15) where applicable.

6.2 On Site Uses

6.2.1 Structural Fill

6.2.2 Soil resources identified on site may be suitable to be incorporated within engineered fill. However, soil (i.e. materials with a high organic matter, potential G10 material) is likely not suitable for use on site as a founding strata given the potential high compressibility of these materials.

6.2.3 Additional potential on site uses include:

- Rehabilitating landfill sites/borrow pits/erosion features.
- General use within cut/fill proposals.
- Use as an acoustic bund.
- Creation of tracks/paths/trails.

6.2.4 Any potential requirement for reuse of site-won materials would require a MMP to adequately deal with these materials.

6.3 Retained for Landscaping/Habitat Creation

6.3.1 It is anticipated that soil materials could be retained on site for the purposes of creating raised beds or the like for plant cultivation. The aim is thus to make putting in vegetation cover as cost-effective as possible, and to allow for

potentially more extensive habitat creation than would otherwise be viable. These landscaped areas would benefit specifically from additional topsoil where topsoil is lacking or of poor quality and allow for deeper topsoil profiles which would assist with more effective root establishment.

6.3.2 Additional quantities of soil could also provide an additional revenue source through the export of surplus soil for off-site use, see below.

6.4 Wetland Areas/SuDS features

6.4.1 This option proposes using suitable soil material, especially clay material, to potentially improve upon existing structures within the creation of wetlands or SuDS features. Additional materials identified as part of the SRS can potentially be re-used as ‘soft-engineering’ in the artificial creation of other features as necessary on site.

6.5 Creating Other Habitats

6.5.1 This option proposes using suitable soil material to create habitats that could potentially accommodate various fauna and flora. These habitats could be strategically located away from possible disturbance, where suitable soil material could be utilised to artificially create and/or enhance existing habitats for birds and reptiles, amongst others.

6.5.2 However, it is important to note that the creation of other habitats would lead to the permanent loss of this land from agricultural rotation.

6.6 Topsoil Manufacture

6.6.1 This option proposes that suitable soil-forming material may potentially be blended with an appropriate source of organic matter, at the required mixing ratio, in order to effectively manufacture topsoil. These materials may be possible to source on-site, however, it may also require the need to import suitable organic rich materials (i.e. topsoil) in order to provide the appropriate mix. Suitable soil-forming material may include: subsoil and mixed soils which would need to be analysed first to see what additions or processing would be

required to make a useful (functional) topsoil for use on the greater site or for sale to commercial sources off-site. Testing is anticipated to comprise; topsoil material would need to conform to BS3882:2015 (Ref 14) as a minimum and subsoil material would need to conform to BS8601:2013 (Ref 15) as a minimum.

6.7 Removal Off-Site

6.7.1 It is not anticipated that soil will be exported. Soils are to be retained on site for sustainable re-use.

6.7.2 Soil volumes will be quantified to determine depth of topsoil/subsoil layers and shallow rock features.

6.8 Soil Placement

6.8.1 Once an option has been decided upon for the allocation of surplus soil resources, the reinstatement of the soil would need to be undertaken in a manner that provides a structured, un-compacted and well aerated soil profile upon placement.

6.8.2 Soil placement must consider specific recommendations found within the SRS and/or site-specific SMP. The following protocols must be followed for soil placement:

- All soil resources to be reinstated must be handled only when dry or slightly moist.
- Over-compaction must be strictly avoided by restricting movement of vehicles over the reinstated area.
- Soil placement must consider specific recommendations found within the SRS and/or site-specific SMP.
- Selection of appropriate equipment for soil placement will likely include the use of tracked plant.
- The receiving surface (in-situ layer of soil) must be de-compacted first prior to placement and spreading. In some instances this receiving layer may require deep ripping.

- Subsoil layers (where applicable) must be spread first, according to the depth detailed in the site-specific SMP, before topsoil is applied to the area as the final layer and spread.
- Topsoil depth will be predetermined as detailed in the site-specific SMP.
- All compacted lumps/clumps of soil material (subsoil or topsoil) must be broken down before adding additional soil layers.
- Undesirable material that surfaces during any of these processes must be removed by picking or raking.

6.9 Soil Maintenance (Aftercare Requirements)

6.9.1 The following soil maintenance/aftercare protocols must be followed:

- Any appointed Contractor or Landscape Consultant must consider the methods of grass establishment and fertiliser and maintenance regimes within green spaces.
- Monitoring of soil conditions must be undertaken as part of the management of the created green space areas and planted areas beneath panels, and must include early identification of unsatisfactory growing conditions, i.e. settlement and self-compacted soils, waterlogging and anaerobism (lack of oxygen).
- In the event that unsatisfactory growing conditions are observed during the monitoring and maintenance period a Landscape Specialist is to be consulted to provide recommendations for corrective action.
- A programme of post-construction monitoring of re-vegetation and retained vegetation needs to be undertaken, likely on a seasonal basis and/or as prescribed by the Landscape Specialist during the construction phase.
- Consultation will be undertaken with the host authorities and Natural England on each monitoring report and agreement will be sought on aftercare actions.

7.0 REQUIREMENTS

7.1 General

7.1.1 Prior to construction, site and soil-specific measures will be set out in a SMP, based upon this FSMP as a minimum, and supplemented by additional survey data where required. The detailed SMP will set out in full the methods for reinstatement (as relevant to ensure the soil resource is managed effectively according to its ALC, and that BMV resource is retained (as relevant) across the DCO Site).

7.1.2 To secure effective delivery of the SMP, the contractor must implement it through location-specific construction method statements. 'Locations' will be determined by the contractor or their soils specialist depending upon factors such as, but not limited to, the works to be undertaken, the machinery to be used, soil types and results of any additional survey works, and site constraints (for example, depth to water table, or ecological constraints).

7.1.3 The works must also be monitored to audit compliance with the SMP (and location-specific construction method statements) and to allow ongoing advice on soil handling to be provided by a suitably qualified and experienced soil scientist or practitioner.

7.1.4 The agricultural land within the Cable Corridor is only temporarily required during construction and will be restored to the current ALC grade.

7.1.5 The agricultural land soil resource within the Principal Site will be returned to the landowners with at least the same grade as recorded in the ALC surveys ~~in its current state~~ following decommissioning of the Proposed Development and reinstatement of the land.

7.2 Information Required to Compile Soil Management Plan

7.2.1 A firm Soil Budget will be outlined in the SMP. The data required is outlined in Section 4 of this document.

7.2.2 The investigations will comprise the following as a minimum:

- Agricultural Land Classification (ALC) surveys - soil surveys across remaining areas of the site red line boundary: including the cable corridor, previously inaccessible areas and compound locations etc. Sample density must be in accordance with relevant ALC guidance, i.e. one sample per 100m of linear route or 1 per hectare of site area and undertaken by suitably qualified soil surveys in accordance with the BSSS guidance;
- Geo-environmental intrusive (Phase 2) investigation – obtain soil samples for relevant chemical testing; and
- Topographic survey – determine site levels, changes in elevation, earmark cut and fill locations.

7.2.3 In addition, the following measures must be determined prior to compilation of the SMP:

- Roles and Responsibilities – specific roles and responsibilities relevant to the SMP shall be allocated for the project prior to construction and these persons shall be outlined in the SMP.
- Haulage Routes – haulage routes must be determined and set out prior to completion of the SMP to be included in all recommendations and site layout plans.
- Soil Resources – soil types to be stripped must be determined ahead of the compilation of the SMP. Soil strip locations, depths and volumes to be agreed and accurately mapped for inclusion in the SMP. The final use for all soil resources will need to be agreed for both on site and off site uses.
- Stockpile Design and Locations – appropriate locations must be allocated for soil stockpiles and detailed in the SMP prior to the commencement of site works. Soil stockpile volumes and design will be determined based on the soil type identified. Stockpiles shall be monitored by an appointed person during the construction programme to ensure resources are not damaged during the stockpiling period.
- Aftercare – the period of aftercare will be determined during the preparation of the SMP. It will be responsibility of the appointed person to determine when the reinstatement standard has been met. The period of aftercare to be agreed with landowner.
- Monitoring Schedule – the monitoring schedule to be undertaken either during or post construction must be determined and set out within the SMP. This will include determinands to be monitored, the frequency of monitoring and the acceptable limits for the data output. There must also be an agreed set of roles and responsibilities for which person is responsible for carrying out and/or audit of the monitoring programme.

8.0 REFERENCES

Ref 1 DEFRA – The Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, March 2011

Ref 2 CL:AIRE - The Definition of Waste: Development Industry Code of Practice (DoWDICoP). March 2011

Ref 3 Magic Web Mapping Service, DEFRA, 2023.

Ref 4 British Geological Survey (BGS) Database and Mapping.

Ref 5 BGS Geoindex Web Mapping Service.

Ref 6 BGS 1: 50,000 scale Provisional Series, Geological Map, England and Wales, Sheet Number 114 (Lincoln), available on the BGS map portal.

Ref 7 Ministry of Agriculture, Fisheries and Food (MAFF), Post-1988 Agricultural Land Classification Surveys Database and Mapping.

Ref 8 Google Historic Aerial Imagery.

Ref 9 National Library of Scotland Historical Ordnance Survey England and Wales, 1855-1956 Maps.

Ref 10 MAFF, 1988, Agricultural Land Classification of England and Wales – Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.

Ref 11 Soils and their use in Eastern England, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map.

Ref 12 Department for Environment Food and Rural Affairs (DEFRA), March 2011, The Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Ref 13 Contaminated Land: Applications In Real Environments (CL:AIRE), March 2011, The Definition of Waste: Development Industry Code of Practice (DoWDICoP).

Ref 14 BS3882:2015 Specification for topsoil.

Ref 15 BS8601:2013 Specification for subsoil.

Ref 16 REL report ref: 230407.AC.03, Agricultural Land Classification Report, dated: October 2024.

Ref 17 Natural England guidance TIN037

Ref 18 Institute of Quarrying Guidance – Good Practice Guide for Handling Soils in Mineral Workings