Foel Fach Wind Farm Limited.

Foel Fach Wind Farm - Environmental Statement Volume III

Appendix 7.5: Peat Slide Risk Assessment

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RSK GENERAL NOTES

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Project manager	Catherine Isherwood
Date:	26/06/2025

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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EXECUTIVE SUMMARY

A Peat Slide Risk Assessment has been prepared to identify, assess and mitigate risks associated with peat soil instability within the Proposed Development. A desk study, walkover surveys, and peat depth surveys were carried out, with areas of interest within the Application Site outlined. Soil depth varied widely across the Site, with 87.7 % of recorded soil depths 0.3 metres (m) deep or less. 99.4 % were 1.0 m deep or less. Only 0.6 % of surveyed points returned peat soil depths over 1.0 m, the deepest peat probe recorded was 1.9 m. Within this assessment, risk is defined and quantified, assessing the likelihood of potential peat slides across the Site using a grid-based methodology. The majority of the Site either had no peat soil present or was assessed as having '**Negligible**' or '**Low**' risk of peat landslide. Eight grid cells were assessed as having a '**Moderate**' risk, which have been subjected to a detailed assessment. No cells were assessed as having a '**High**' risk of peat landslide. Potential adverse consequences resulting from a peat landslide have been discussed and recommendations have been made regarding specific construction methods to avoid or minimise these risks.

1 INTRODUCTION

1.1.1 This report provides a Peat Slide Risk Assessment (PSRA) for Foel Fach Wind Farm and associated infrastructure, hereafter referred to as the Proposed Development.

1.1.2 This report forms a Technical Appendix to the Environmental Statement (ES) for the Proposed Development and should be read in conjunction with this document. It has been produced in response to concerns over development in areas of peatland relating specifically to the risk of induced instability within peat soils caused by the Proposed Development.

1.1.3 This report describes the existing peat soil distribution within the application boundary ('the Site') and identifies and assesses the potential impacts that may be caused by the Proposed Development. This includes potential risks from induced peat soil instability. Design and mitigation methods to avoid or minimise these risks are set out, along with a number of good construction practices that would be employed during all construction works.

1.2 Site Location

1.2.1 The Application Site ('Site') is located within the administrative boundary of Gwynedd Council, North Wales, approximately 3.1 km north east of Bala. Eryri National Park is situated to the west of the Site, with the nearest turbine (T01) located approximately 1.9 km east of the national park boundary. The Site elevation varies from approximately 225 metres (m) Above Ordnance Datum (AOD) to approximately 550 m AOD. The majority of the Site is located on an area of grazing moorland with a number of parcels of registered common land. Two registered common land parcels are located in the eastern area of the Site. The majority of the land within the Site is Countryside and Rights of Way Open Access land, with areas of agricultural land. A number of Public Rights of Way (PRoW) are present within and adjacent to the Site, although none are nationally designated trails. Small wooded areas are present within the Site. Ancient woodland and larger areas of forestry are present outside the application boundary, to the south.

1.3 Development Proposals

1.3.1 The Proposed Development infrastructure would include:

- 10 no. three bladed horizontal axis wind turbines, up to 200 or 220 metres in height to the blade tip (where specified)
- wind turbine foundations and hardstanding areas which will include crane pad hardstanding areas and laydown/storage areas

- an onsite substation
- a battery energy storage system (BESS)
- permanent wind monitoring equipment (LiDAR)
- site access improvements, through the upgrading of the existing junction off the B4501
- onsite access tracks (new roads and upgraded existing roads/tracks), passing places and vehicle turning heads
- underground power cables linking the wind turbines and the substation
- watercourse crossings and associated infrastructure
- drainage system
- micrositing up to 50 m
- onsite signage, and
- biodiversity enhancements proposals.

1.3.2 Full details of the Proposed Development design are provided in **ES Volume II, Chapter 2: Description of the Proposed Development**.

1.4 Aims

1.4.1 This report aims to undertake a review of available relevant Site information, including all peat soil depth and soil sample records, in order to provide an assessment of the risk of peat soil instability within the Site. Recommendations will be made for mitigation measures and specific construction methods that should be implemented in order to minimise the risk of inducing instability in the peat during construction works and the process of decommissioning and removing existing infrastructure.

1.5 Assessment Method

1.5.1 The assessment has involved the following stages:

- desk study
- site reconnaissance
- hazard and risk assessment
- detailed assessment, and
- mitigation.

2 DESK STUDY

2.1 Information sources

2.1.1 The desk study involved a review of available information sources on the ground conditions at the Proposed Development. Information sources included:

- Ordnance Survey (OS) mapping at 1:50,000, 1:25,000 and VectorMap and Local raster mapping and Terrain 5 digital terrain model
- historical OS mapping as available to view online
- high-resolution orthorectified aerial imagery
- British Geological Survey (BGS) online geological mapping, 1:50,000 scale
- Cranfield University's Soilscapes digital soil mapping, 1:250,000 scale
- data provided by landowners and adjacent landowners
- archive data from local newspapers, as available online, and
- peat soil depth data collected by RSK and Fluid Environmental Consulting Ltd.

2.2 Historical Information

2.2.1 There is no documented occurrence of historical peat slides in or around the Site.

2.2.2 A detailed inspection of available current and historical satellite and aerial photography has been undertaken to identify any signs of recent or former peat soil or slope instabilities within the Site and its surroundings.

2.2.3 No indications of historical slope instabilities have been identified within the Site or immediate vicinity. BGS GeoIndex documents the occurrence of several landslides in the wider area, but these are small-scale, localised and more than 5 km from the Site (BGS, 2025).

2.3 Topography and Geomorphology

2.3.1 The Site is located on relatively high ground, with elevations ranging from 250 m to 569 m AOD. The highest point within the Site is the peak of Garnedd Fawr in the north which lies at 569 m AOD. The topography of the Site slopes downward from north-east to south.

2.3.2 The Site is surrounded by four prominent hills: Cerrig y Gordref (497 m AOD) to the north, Foel Goch (611 m AOD) to the north-east, Moel Darren (509m AOD) to the east at the edge of the application boundary and Garw Fynydd (490 m AOD) to the south. Craig y Garn (461 m AOD) is located at a greater distance to the west, across the Afon Mynach valley.

2.3.3 The southern part of the Site slopes smoothly down from the peaks of Moel Emoel (549 m AOD) and Eglwys-Anne Warren Ffridd (463 m AOD) towards Llyn Maen Bras at approximately 355 m AOD.

2.3.4 Slope mapping is provided on **Figure 7.5.1** and geomorphological mapping on **Figure 7.5.2**.

2.4 Soils and Peat Soil

2.4.1 Soil and peat information is derived from Cranfield University's National Soils Mapping (Cranfield University, 2015) and extensive peat soil survey data gathered for the Proposed Development (**Table 7.5.1**).

2.4.2 Soils and peat mapping are shown on **ES Volume IV, Figure 7.4: Soils and Peat** and **ES Volume IV, Figure 7.5: Peat Soil Depth** respectively.

2.4.3 The Site is primarily underlain by soils described as very acidic loamy upland soils with a wet peaty surface. The south-west is underlain by freely draining acidic loamy soils over rock, while the west is underlain by slowly permeable seasonally wet acidic loamy and clayey soils. Within the central region of the Site, to the north, there is a small area of soils described as slowly permeable wet very acidic upland soils with a peaty surface (Cranfield University, 2015).

Table 7.5.1 Soil Types Within the Site (Cranfield University, 2015).

Soil Assoc.	Description	Drainage	Habitats	Area %
Hafren	Very acid loamy upland soils with a wet peaty surface	Surface wetness	Grass moor and heather moor with flush and bog communities in wetter parts	65.9
Manod	Freely draining acid loamy soils over rock	Freely draining	Steep acid upland pastures dry heath and moor; bracken gorse and oak woodlands	20.4
Brickfield 1	Slowly permeable seasonally wet acid loamy and clayey soils	Impeded drainage	Seasonally wet pastures and woodlands	10.4

Soil Assoc.	Description	Drainage	Habitats	Area %
Wilcocks 2	Slowly permeable wet very acid upland soils with a peaty surface	Impeded drainage	Grass moor and some heather with flush and bog communities in wetter parts	2.8
Lake	Lake or water body	-	-	0.5

2.4.4 The Peatlands of Wales Map indicates that 1.9% of the land within the Site has peat present (Welsh Government, 2022). The map uses an evidence score from 1 (low) to 10 (high) to indicate the level of confidence that peat is present in any given cell. Only those cells scoring more than 2 on this scale of 1-10 are captured in the Peatlands of Wales peat distribution map.

2.4.5 The peat mapped on Site consists exclusively of evidence score 2 peatland (1.9% of the land within the Site) and is located to the south of Foel Tyn-y-ddôl and to the north of Llaithgwm.

2.4.6 An area covering 16.3% of the Site has an evidence score of 1 and is therefore not considered to be peat, as a result of weak confidence. The remaining 81.8% of the Site does not have an evidence score assigned, indicating the absence of peat.

2.5 Aerial Photography

2.5.1 High-resolution orthorectified colour aerial imagery from ESRI has been used for this assessment (ESRI, 2025) with additional information from Google maps and Bing maps.

2.5.2 The Site is dominated by patterns of light brown, tan, dark green and lighter bright green areas. These colours often align with elevation and the associated vegetation.

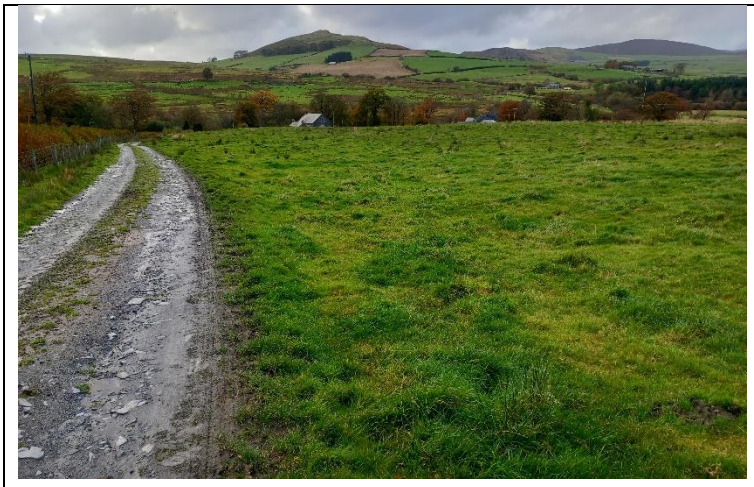
2.5.3 Much of the Site is characterised by relatively bright green polygons separated by linear or broader areas of dark green, typically at lower elevations across the Site. These are fields, mainly used for pasture, hay or silage crops separated by woodland or hedgerows common in rural Wales.

2.5.4 Areas of light brown and tan to mid-brown indicate a combination of grass and heather moorlands, typically at higher elevations across the Site. Colour differs depending on the bogginess of the area and the composition of vegetation. Darker shades of brown within areas of green indicate patches of rush vegetation, indicating the presence of surface water flow and drainage channels.

3 SITE RECONNAISSANCE

3.1.1 Walkover surveys were undertaken by RSK in October and November 2024 and April 2025. The scope of the surveys included a reconnaissance survey of the Site and its immediate surroundings, plus mapping of the geomorphology and local-scale hydrology of the Site. The survey covered the entire Site, with a particular focus on locations where infrastructure is planned, as well as potential access tracks into and across the Proposed Development. The weather during the surveys was mixed, although visibility was reasonable throughout.

3.1.2 The areas described below provide good coverage of the Site, detailing the range of landforms, vegetation and erosion patterns encountered.

	**(A) View of the existing track to the west of Llaithgwm, 29131, 34090.** View shows the location of the proposed entrance compound to the right-hand side of the photo. Trackside drainage is located behind the hedge on the left-hand side of the photo. Peat soils are largely absent from this area, with coring indicating shallow clay and mineral soils.
	**(B) View of the fields to the south of Llaithgwm, 29212, 34095.** The grazed fields in the western part of the Proposed Development consist of improved pasture, drained by ditches at the field margins. No peat soils were identified in this area of the Site.

	**(C) View of the hillside to the west of T02, 29316, 34137.** Slope angles range from 15° to 25°. Bedrock is visible at the surface, and probing confirms very shallow non-peat soils. The access track is proposed to pass through this area. An area of peatland can be seen on the left-hand side of the photo, located at the base of the hillside, where slope angles are shallow.
	**(D) View towards the proposed T05, 29421, 34224.** The hillside in this area is characterised by shallow soils. Bedrock is visible at the surface. To the right-hand side of the photo, an area of peatland can be seen across the gently sloping area. T05 is proposed on the hillside, to the left-hand side of the photo.
	**(E) View across Foel Fâch south towards Moel Emoel, 29427, 34147.** T07 is proposed in this area. There are limited mosses and tussocky grass. Vegetation type has evolved due to widespread grazing, this is characteristic of large areas of the Site. There are small pockets of peat soils around the T07 hardstanding. Coring at the turbine hardstanding shows

	soils consist of mineral soils and clay.
	**(F) View of a tributary channel of the Nant Cefn-Coch, 29466, 34141.** Soils along the watercourse channel are shallow, with bedrock visible from fluvial erosion. Peat soils are present on the ground above the watercourse channel, although coring confirms the presence of clay at various depths underlying these deposits. This is the location of the proposed bridge to T09 and T10.
	**(G) View south-west from T09, at Moel Darren, 29491, 34150.** Probing and coring around the hardstanding at T09 confirmed small pockets of peat soils, of up to 1.3 m. Most of the hardstanding is underlain by clay and mineral soils. Vegetation is predominantly heather, grass and sedges. Small areas of wetter ground, with underlying clay soils, are mainly indicated by rush vegetation.

	**(H) View north adjacent to the proposed track between T09 and T10, 29495, 34133.** The rushes in the photo mark a small pocket of peat soil, to the west of the proposed track. The peat soil has a depth of up to 0.74 m. The surrounding vegetation is characteristic of the other grazed areas across the Site. No peat soils were identified in these surrounding areas.
	**(I) View from the area to the south of T01, 29316, 34084.** This area consists of tussocky grass with a poorly defined watercourse, creating a boggy area. The watercourse drains towards Llyn Maen Bras, visible in the distance on the right-hand side of the photo. Moel Emoel is to the left-hand side of the photo. Coring identified limited pockets of peat soils, the area is typically underlain by shallow soils over clay.

	**(J) View towards the north-west slope of Moel Emoel, 29397, 34058.** Isolated small pockets of peat soil were identified during coring and probing; however, soils are generally shallow in this area, with bedrock often visible at the surface. The vegetation is characterised by mosses, grasses and sedges, with the area frequently grazed.
	**(K) View from the area south of T03, 29369, 34086.** The mid-ground of the photo shows an area with peat soil up to 1.15 m deep. The peat soil area is closely linked to the headwaters of a watercourse, which drains this area. The surrounding vegetation is grazed, but small areas which are less accessible due to boggy ground have slightly better peatland vegetation. An outcrop of bedrock is visible in the mid-ground of the photo. No infrastructure is proposed for this area.

4 MAPPING

4.1 Peat Soil Depth Survey

4.1.1 The peat soil depth survey has involved three stages: Phase 1 and 2 peat soil depth probing and peat soil core sampling.

4.1.2 The Phase 1 survey involved recording soil and peat soil depth with a hand-held probe on a 100 m grid across the Site, to identify areas of peat soil and natural variation in the peat soil substrate across the area. The Phase 1 survey was undertaken in December 2023 by Fluid Environmental Consulting Ltd.

4.1.3 Following the infrastructure design process, a Phase 2 survey was undertaken by RSK across areas of infrastructure and access tracks. Probing was undertaken at approximately 10 m intervals for infrastructure footprints and approximately 25 m intervals with 25 m offsets along proposed access track routes and in areas nearby to ensure that sufficient peat soil depth data was available to inform the track design. Phase 1 survey data were used to identify areas where peat soils were not recorded. Where no peat soil was recorded within 100 m, no further Phase 2 surveying was undertaken. However, if peat soils were identified during nearby Phase 2 surveys, the survey area was expanded to ensure the full extent of peat soils was thoroughly mapped at proposed infrastructure locations.

4.1.4 The Phase 2 surveys took place on 13 to 25 October 2024. The infrastructure design was reviewed further following the initial Phase 2 survey, and further Phase 2 surveys were undertaken between 25 November and 1 December 2024, 19 and 21 February 2025 and on 17 April 2025, following further infrastructure design amendments.

4.1.5 In total, 5,608 peat soil probe depths have been measured within the Site. These data were interpolated to develop a spatial model of soil and peat soil depths, providing an evidence base to inform the infrastructure design process.

4.2 Peat Soil Core Sampling

4.2.1 To understand the accuracy of the peat soil probing, peat soil coring surveys were undertaken, the first in December 2023 by Fluid Environmental Consulting Ltd. Subsequent coring was undertaken as part of the Phase 2 surveys by RSK on 25 November to 1 December 2024, 19 to 21 February 2025 and on April 17 2025. A total of 105 peat soil core samples were collected for analysis at various locations across the Site, including within proposed infrastructure locations and access tracks. At each coring location, soil samples were taken with a soil auger in 50 or 100 cm sections until refusal, with a corresponding probe depth also recorded at each point.

4.2.2 The coring identified that probe depths had overestimated actual peat soil depth, as probes had penetrated the underlying soft materials (such as clay), rather than terminating at the base of the peat soil. Consequently, to correct this overestimation, the peat soil core data collected were analysed to identify to what depth the peat soil extends in each of the 105 cores, giving a 'calibrated peat soil depth' for each core location.

4.2.3 A ratio was then calculated for each core location by dividing the calibrated peat soil depth (determined from coring) by the corresponding uncalibrated probe depth. For example, an uncalibrated depth of 0.5 m and a calibrated depth of 0.4 m, would give a ratio value of 0.8.

$$Ratio = \frac{Calibrated\ peat\ \text{soil}\ depth\ (determined\ by\ coring)}{Uncalibrated\ peat\ \text{soil}\ depth\ (determined\ by\ peat\ \text{soil}\ probe\ at\ core\ location)}$$

4.2.4 The calibration ratios were applied to surrounding, uncalibrated probe points in accordance with the following rules, thereby generating a composite, Site-wide calibrated peat soil depth model:

- The corresponding ratio from each core was applied to all probe points within a 50 m radius.
- Probe points located outside the defined 50 m buffer zone were not adjusted and retained their original, uncalibrated depth values.
- In cases where a probe point fell within the buffer zone of multiple cores, the calibration ratio from the nearest core was applied.

4.2.5 **Diagram 7.5.1** visually represents the calibration method used to correct the peat soil depths collected during Site surveys.

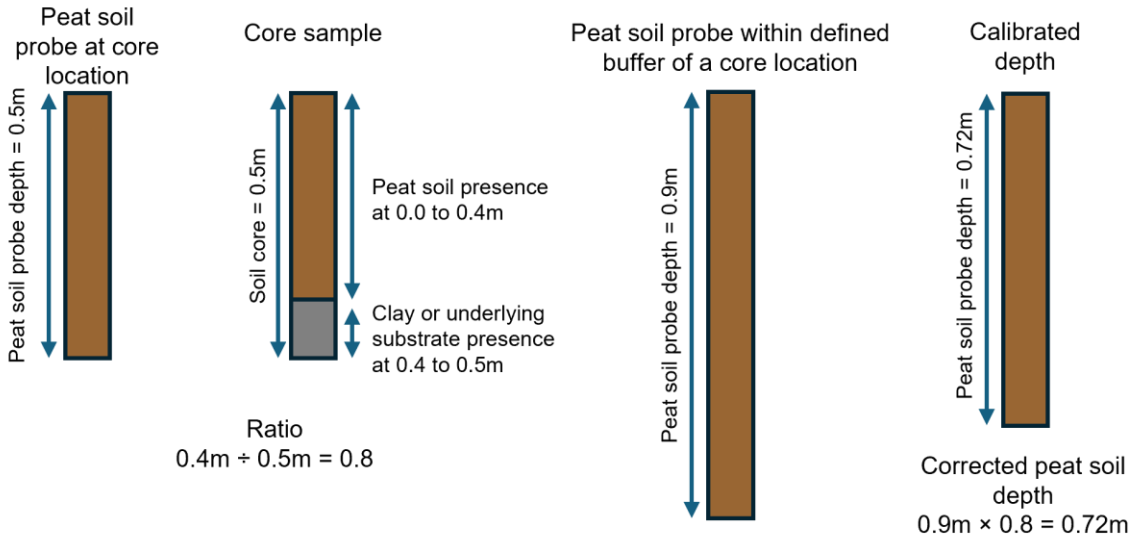


Diagram 7.5.1 Visual Representation of an Example Peat Soil Depth Corrected to Account for the Presence of Clay Using Data from a Peat Soil Core.

4.2.6 The decision to apply a 50 m buffer zone when calibrating probe data was made to balance the need for accurate spatial representation with the limitations of available core data. The approach aims to minimise the risk of over-correcting peat soil depth without corroborating core data. This conservative approach ensures that localised anomalies in peat soil thickness are not disproportionately applied to surrounding areas. The majority of infrastructure locations have several peat soil cores available, providing greater confidence in the representativeness of the observed peat soil depth and supporting the spatial application of the calibration ratio.

4.2.7 Subsequently, the calibrated probe data were interpolated using the Inverse Distance Weighting method. This approach was chosen because closer peat probe points exert greater influence on the interpolation, which effectively accounts for areas away from infrastructure where survey resolution is lower.

4.2.8 The calibrated model is considered to provide the most accurate representation of peat soil depths across the Site. The model preserves genuine peat soil deposits by applying localised corrections rather than a uniform Site-wide adjustment while addressing overestimations caused by probe penetration into underlying clay substrates. This targeted approach, informed by core data, enhances the reliability and robustness of the model. It offers a significantly more accurate depiction of peat soil distribution and depth than would be achieved through interpolation of uncalibrated probe data alone.

4.2.9 The peat soil survey results are summarised in **Table 7.5.2**.

4.2.10 The peat soil depth survey indicates that 87.7% of the recorded soil depths were 0.3 m deep or less, while 99.4% were 1 m deep or less. Only 0.6% of surveyed points returned peat soil depths over 1 m; the deepest peat probe recorded was 1.9 m.

Table 7.5.2 Summary of Peat Soil Depth Probing Results

Peat Soil Depth Range (m)	No. of Points	Percentage of Points
0.00-0.30	4,918	87.7%
0.31-0.50	371	6.6%
0.51-1.00	287	5.1%
1.01-2.00	32	0.6%
Total:	**5,608**	**100.0%**

4.2.11 The peat soil depth survey indicates that soil depth varies widely across the Site. Patches of peat soil between 0.51 and 1.0 m deep were isolated. A large proportion of these deposits were situated outside the 50 m buffer zones used for the calibration process, indicating the peat soil depth may be an overestimation in these areas, as confirmed by coring across other areas of the Site.

4.2.12 In the very small number of instances where peat soils were greater than 1.0 m, the extent tended to be patchy in nature, mostly occurring as small and isolated pockets. It was very uncommon for neighbouring points to have peat soil greater than 1.0 m, demonstrating the highly isolated, discontinuous nature of the peat soils at the Site.

Indicative Peat Soil Depth Mapping

4.2.13 The indicative peat soil depth maps for the Site are provided in **Figures 7.5.3a-u** at the rear of this report**.**

4.2.14 The combined peat soil depth survey results were used to produce an interpolated peat soil depth map for the Site as part of the calibration process. The interpolated peat soils depth map was produced using an Inverse Distance Weighting interpolation across the survey area. This method was chosen for its simplicity and for providing a locally weighted estimate of peat depth, where nearby measurements have a stronger influence than distant ones. It effectively reflects local variations without over-smoothing, although it can exaggerate isolated values if data points are sparse or unevenly spaced, particularly at the Site margins where fewer probe locations are available.

4.2.15 The advantage of using a digital interpolation is that the process is fully objective and avoids subjective influence. However, it cannot incorporate known variation in peat soil development relating to topography or drainage characteristics. As a result, peat soil development may be over-estimated in steep or well-drained areas, and under-estimated in flatter, poorly drained areas. Owing to the good resolution of the underlying data, the interpolation appears largely to give a representative indication of peat soil depth across the Site.

Peat Soil Sampling and Analysis

4.2.16 Peat core samples were taken at 105 locations and the peat cores were logged using the modified Von Post humification and wetness scale. Core logs are provided in **Annex 1**.

5 HAZARD AND RISK ASSESSMENT

5.1 Defining Risk

5.1.1 For the purposes of this PSRA, the following definition of risk has been adopted:

$$\text{Risk} = \text{Probability of a Peat Landslide x Adverse Consequence}$$

5.1.2 Probability, or likelihood, can be estimated in several ways and should take account of both natural factors and human-made or human-imposed factors that could influence slope stability. Human-made or human-imposed factors can include overgrazing from over-stocking, excavation of drainage ditches or grips, or heather burning for land management purposes. Natural factors can include extreme weather events such as very high intensity rainfall, or prolonged dry periods followed by storms.

5.1.3 The methods of assessment of likelihood and adverse consequence used here are described below.

5.2 Assessing Likelihood

5.2.1 As peat soil slope failures are mainly considered to resemble planar translational slides, the assessment of likelihood of a peat landslide makes use of the Infinite Slope Model (Boylan & Long, 2014) to assess stability of the peat soils across the slopes in the Site, in line with the Scottish Government's best practice guide for PSRA (Scottish Government, 2017). The Scottish Government's guidance is referred to throughout this assessment in lieu of equivalent Welsh guidance.

5.2.2 The Infinite Slope Model assesses slope stability by calculating the forces resisting failure (shear strength or cohesion) and the forces inducing failure (shear stress) and taking a ratio of these, known as the Factor of Safety (FoS). The modified Infinite Slope Model equation is as follows:

$$F = \frac{c'}{\gamma\, z \sin\beta \cos\beta}$$

where F = FoS, the ratio of forces resisting a slide to forces causing a slide

c' = undrained shear strength of the material; kPa

γ = specific weight of peat soil, undrained in situ; kN/m^3

z = peat soil depth; m

β = slope of ground surface, assumed to be parallel to the slope of the failure plane; degrees

5.2.3 If F > 1, the slope is stable; if F < 1 the slope is unstable; if F = 1 the forces are exactly balanced. It is possible to state with some confidence, therefore, that if F > 1.3 the slope is stable and would have some resistance to change.

5.2.4 Values assigned to the parameters are provided in **Table 7.5.3**, along with an explanation for their selection.

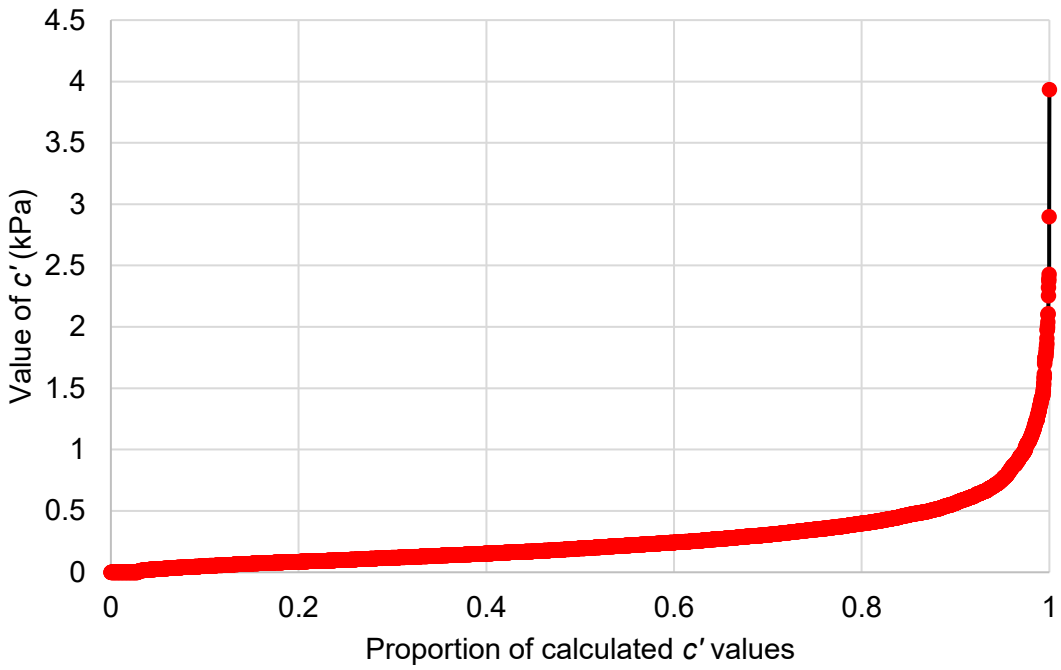
Table 7.5.3 Parameters for the Infinite Slope Model

Parameter	Value and Derivation
F	Calculated value
c'	3.93 kPa Published shear strength values for peat soil vary from 4.5 to 60 kPa or more (e.g. Long, 2004). Published values from recent field tests tend to cluster between 10 and 20 kPa with some higher and lower values recorded. The selected value represents the maximum of a back-calculated minimum, c' (see explanation below).
γ	10.4 kN/m^3 Derived from density of peat soil multiplied by acceleration due to gravity (9.81 m/s^2). Density of peat soil varies depending on degree of decomposition and water content; published values range from 500 to 1,400 kg/m^3.
z	Where available, measured peat soil depths have been used. For grid analysis, the maximum interpolated depth within the grid has been taken to provide a conservative estimate.
β	Slope angles have been derived from the DTM for the Site. Grid cell slopes were all derived from the Site DTM. The DTM used for slope angle generation has a resolution of 5 m. The slope raster map was generated within the GIS software used for the analysis. Average (mean) slope angles were used for each cell.

5.2.5 The shear strength, *c'*, has been estimated from the Site data. This is undertaken by assuming that the slope is just marginally stable at each point where peat soil depth has been measured, i.e. the slope has *F* = 1. The Infinite Slope Model equation can be rearranged to derive a value for *c'*, using the other parameters as described in **Table 7.5.3**.

5.2.6 It is important to note that the calculated values of *c'* for each location represent the minimum shear strength needed for the peat soil to be stable. In fact, the shear strength may be, and in most cases probably is, considerably higher. For example, on very shallow slopes the peat soil needs only a very low shear strength to remain stable, whereas on steeper slopes a much higher shear strength is required to hold the peat soil on the slope. For this reason, the higher estimated values of *c'* are of more relevance as they are more likely to be representative of the actual shear strength of the peat soil on the Site. For this assessment, the maximum value of the calculated shear strengths has been used in the stability analysis. This gives a value of 3.93 kPa, as stated in **Table 7.5.3**.

5.2.7 Across the Site, 5,608 locations have been probed during several phases of fieldwork. *c'* values have been calculated for each of these, and the distribution is provided in **Graph 7.5.1**.



Graph 7.5.1 Estimate of Minimum Shear Strength, *c'*

5.2.8 In order to produce a Site-wide dataset for FoS, a grid of 50 x 50 m cells was overlain across the Site and a FoS calculated for each cell. It is a standard and widely recognised GIS technique to use a regular grid for terrain analyses of this kind. It allows a systematic process across the landscape and minimises the subjectivity of the analysis. The 50 x 50 m cells are referred to as 'grid cells' throughout the analysis.

5.2.9 The FoS, *F*, has been calculated for each peat soil probing location and grid cell within the Site. The Factors of Safety have been divided into classes, which have

been used to map the likelihood of a peat landslide occurring at each point and for each grid cell across the Site.

5.2.10 The calculated FoS results have been considered together with field observations and geomorphological assessment to take into account additional risk factors including breaks in slope, or risk reduction factors such as areas of bedrock exposure. These factors have been applied to the calculated FoS results and the grid cell classes have been changed as appropriate based on the geomorphological mapping. For cells where additional risk factors and risk reduction factors are both present, no change has been made to the calculated results.

5.2.11 The results of the modified classification are presented in **Table 7.5.4**. Please note that the modification to calculated FoS to generate an estimate of likelihood applies only to grid cells and the point data retain the calculated FoS value.

5.2.12 The likelihood map is provided in **Figure 7.5.4**.

Table 7.5.4 Summary of Likelihood Ratings

Likelihood	Factor of Safety	No. of Points	% of Points	No. of Cells (FoS)	% of Cells (FoS)
Nil	No peat soil	4,974	88.5	1,901 (1901)	66.6 (66.6)
Negligible	2.5+	615	10.9	769 (921)	26.9 (32.2)
Unlikely	1.3-2.5	32	0.6	172 (33)	6.0 (1.2)
Likely	1.1-1.3	0	0.0	14 (1)	0.5 (0.0)
Probable	1.0-1.1	1	0.0	0 (0)	0.0 (0.0)
Almost certain	<1.0	0	0.0	0 (0)	0.0 (0.0)
	Totals	5,622	100	2,856 (2,856)	100

N.B. Numbers in brackets for the grid cells are the original results from the Infinite Slope Model analysis, to provide a comparison with the Likelihood Rating results.

5.3 Assessing Adverse Consequence

5.3.1 Potential adverse consequences resulting from a peat landslide cover a wide range, from environmental through to economic and, potentially, harm to life. The (Scottish Government, 2017) gives five examples, as follows:

- Potential for harm to life during construction
- Potential economic costs associated with lost infrastructure or delays in the construction programme
- Potential for reputational damage associated with the occurrence of a peat landslide in association with construction activities

- Potential for permanent, irreparable damage to the peat soil, in terms of both carbon store and habitat, through mobilisation and loss of peat soil in a landslide, and
- Potential for ecological damage to watercourses and waterbodies subject to inundation by peat soil debris.

5.3.2 Adverse consequence has been assessed taking account of environmental sensitivity, including potential consequences to water quality from peaty debris, habitat loss by peat soil removal and by blanketing of sensitive areas with peat soil debris, as well as economic significance, including damage to infrastructure and construction delays resulting from a peat landslide, in line with current guidance (Scottish Government, 2017).

5.3.3 Adverse consequence has been assigned as follows:

- **Very high consequence:** public roads, all buildings, wind turbine foundations (including the Proposed Development turbines), substation and private water supply sources;
- **High consequence:** watercourses and waterbodies, turbine hardstandings (including associated earthworks), substation compounds or construction compounds (including associated earth works) and LIDAR units;
- **Moderate consequence:** areas of moderately sensitive habitat, access tracks (including associated earth works), GCR sites;
- **Low consequence:** areas of low sensitivity habitat, borrow pits; and
- **Very low consequence:** damaged or degraded habitats.

5.3.4 **Table 7.5.5** provides a summary of the grid cells at the Site assigned to each of the defined consequence ratings. The adverse consequence map is provided in **Figure 7.5.5**.

Table 7.5.5 Summary of Adverse Consequence Ratings

Adverse Consequence	No. of Cells	% of Cells
Very high consequence	216	7.6
High consequence	607	21.2
Moderate consequence	208	7.3
Low consequence	1,825	63.9
Very low consequence	0	0.0

Risk Assessment

5.3.5 The likelihood and adverse consequence are combined to produce an estimate of risk for each grid cell within the Site. The risk assessment matrix used to combine these two parameters is provided in **Table 7.5.6**.

Table 7.5.6 Risk Assessment Matrix

		Adverse Consequence				
		Very High	High	Moderate	Low	Very Low
Peat Landslide likelihood	Almost Certain	High	High	Moderate	Moderate	Low
	Probable	High	Moderate	Moderate	Low	Negligible
	Likely	Moderate	Moderate	Low	Low	Negligible
	Unlikely	Low	Low	Low	Negligible	Negligible
	Negligible	Low	Negligible	Negligible	Negligible	Negligible

5.3.6 **Table 7.5.7** provides a summary of the risk ranking for the grid cells across the Site, together with an indication of appropriate mitigation from the (Scottish Government, 2017). The risk ranking map is provided in **Figure 7.5.6**.

Table 7.5.7 Summary of Risk Ranking and Appropriate Mitigation

Risk Ranking	No. of Grid Cells	% of Grid Cells	Appropriate Mitigation
High	0	0.0	Avoid project development at these locations.
Moderate	8	0.3	Project should not proceed unless risk can be avoided or mitigated at these locations, without significant environmental impact, in order to reduce risk ranking to low or negligible.
Low	100	3.5	Project may proceed pending further investigation to refine assessment, and mitigate hazard through relocation or re-design at these locations.
Negligible	847	29.7	Project should proceed with monitoring and mitigation of peat landslide hazards at these locations as appropriate.
No peat soil	1,901	66.6	No peat landslide hazard.

5.3.7 The majority of the Site has no peat soil or has been assessed as having **Negligible** or **Low** risk of peat landslide (99.7%). Eight grid cells have been assessed as having a **Moderate** risk from peat landslide. No cells have been assessed as having a **High** risk from peat landslide.

5.3.8 Each of the eight grid cells assessed as having Moderate risk have been subject to a detailed assessment.

6 DETAILED ASSESSMENT AND MITIGATION

6.1 Detailed Assessment

6.1.1 Eight grid cells have been identified for detailed assessment. The areas identified for detailed assessment are indicated in **Figure 7.5.6**. These cells have been considered in greater detail, as three groups of one or more highlighted cells.

6.1.2 The assessment for Areas 1-3 includes a detailed inspection of the highlighted cells, the cells immediately around and downslope of them, the measured peat soil depths and slope angles present, drainage features and the nature of the proposed nearby infrastructure. Mitigation measures are recommended to reduce or control the risk for the areas.

6.1.3 Following detailed consideration, the risk ranking has been re-appraised in the light of the presented information and proposed mitigation. Each description is accompanied by a map of the cells and their immediate surroundings. The grid cells in each map are 50 x 50m, to give an indication of scale. Green cells have Negligible risk; yellow cells have Low risk, orange cells have Moderate risk; red cells have High risk. Transparent cells have no peat soil as defined in the Peat Landslide Hazard and Risk Assessment Guidelines (Scottish Government, 2017), adjusted to the reflect the Welsh Government's own definition of peat soils, as used to produce the Peatlands of Wales Map (Welsh Government, 2022).

6.1.4 The points on the maps show the calculated likelihood rating for all locations with directly measured peat soil depth, where dark blue is Negligible; green is Unlikely; yellow is Likely; orange is Probable; and red is Almost Certain. Points in white have no peat soil.

6.1.5 Other symbols used on the maps are described below:

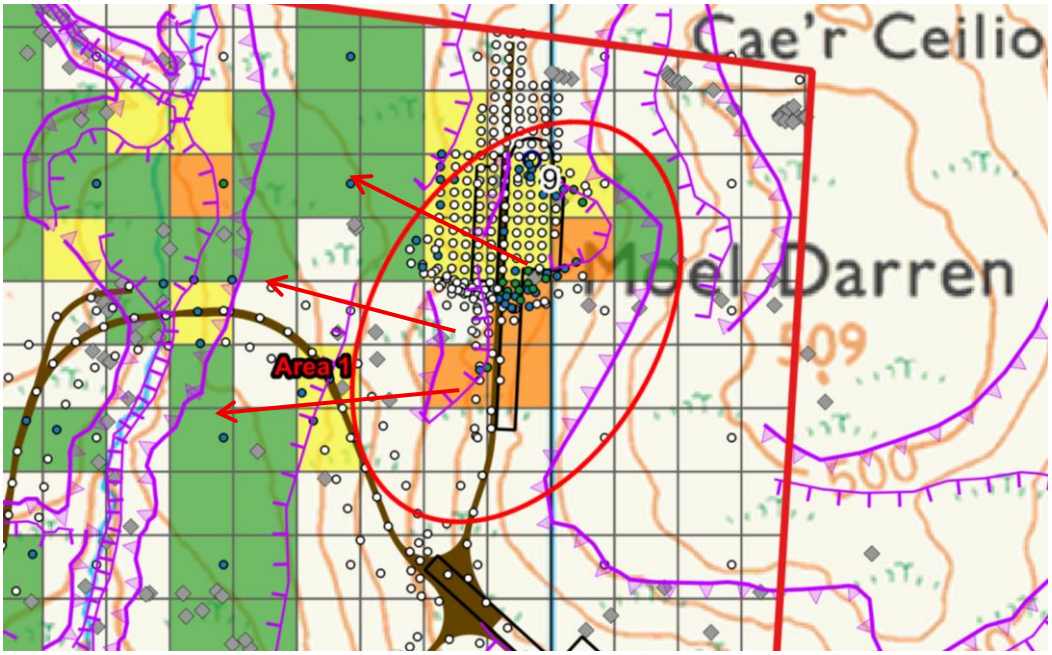
Detailed assessment area

Convex break-in-slope

Concave break-in-slope

Exposed bedrock

Detailed Assessment: Area 1



Four cells located across the hardstanding at T09, in the eastern part of the Site, have been assigned Moderate risk. The assigned risk level relates to the sensitivity of the receptor, the turbine hardstanding, and its associated High consequence rating.

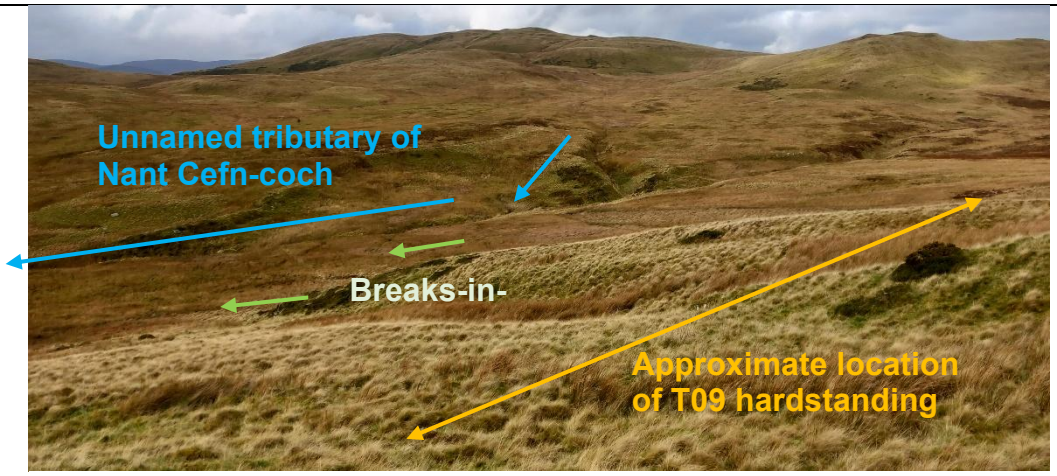
Calculated likelihood for the cells is Likely, reflecting the relatively steep slopes present within the cells and presence of breaks-in-slope in three of the cells. The consequence rating is High in all four cells as a result of the turbine hardstanding.

Peat soil depths in the cells range from 0.02 m to 1.3 m, with average slope angles between 12.3° and 15.4°. There are 46 peat soil depths recorded within the highlighted cells.

Potential Runout from any Failure:

Any failure in these cells would travel west, towards an unnamed tributary of the Nant Cefn-coch. It is possible that the debris would terminate on flatter ground before reaching the channel, but some material could travel right through to the river channel. A failure could affect the integrity of the channel, may cause temporary damming of the watercourse and would be likely to cause a reduction in water quality downstream. A failure could also affect the access track section between T09 and the watercourse. Runout paths are indicated by arrows.

Very limited peat soil was identified upslope of the highlighted cells. Together with the presence of exposed bedrock, this makes it unlikely that soils upslope would be destabilised in the event of a failure.



Photograph showing the southern part of Area 1, with the channel of the Unnamed tributary of Nant Cefn-coch visible in the mid-ground. The breaks-in-slope downslope from the T09 hardstanding are visible due to the change in vegetation.

Mitigation

Closer inspection of the highlighted cells indicates that areas with the steepest slopes and areas with peat soils are not coincident in the highlighted area. Most of the turbine hardstanding is located in an area with no peat soil. The pockets of peat soil that are present are very much smaller than the 50 m grid cell size and are isolated and discontinuous. The elevated Risk Ranking is considered to be an artefact of the grid-based assessment combined with the High consequence rating for the hardstanding area.

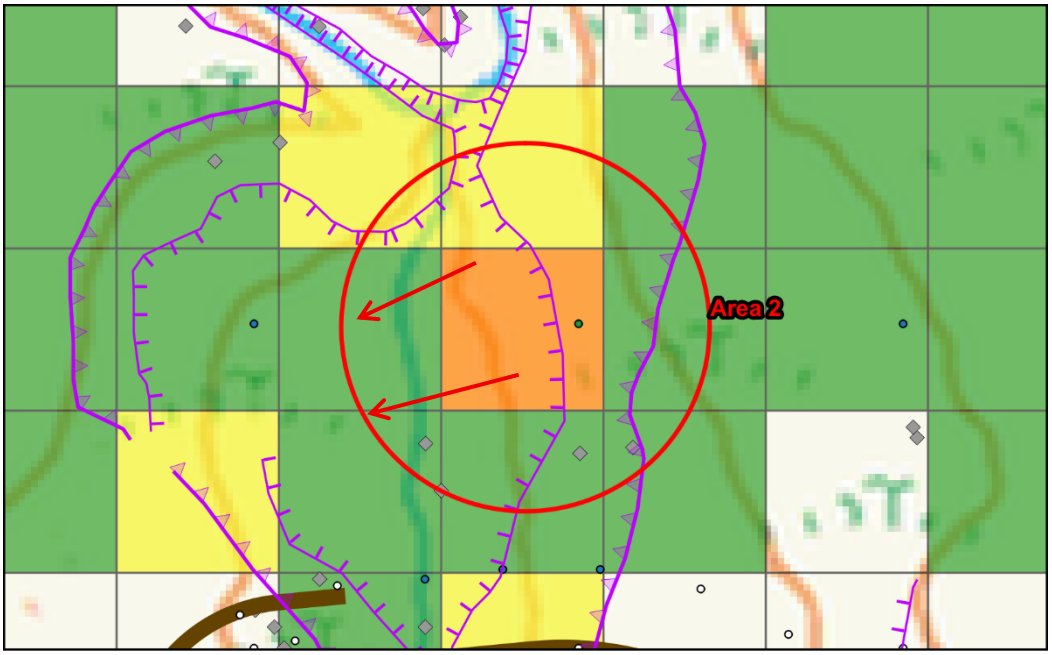
Work in the area will require excavation to form the hardstanding and foundation for T09. The work would be under the supervision of the Environmental Clerk of Works (ECoW) at all times. Micrositing of infrastructure away from areas of peat soil deeper than 1 m would be undertaken if possible, on recommendation by the ECoW and based on prevailing site conditions and engineering constraints.

Visual monitoring of the surrounding ground would be recommended. Daily monitoring for any signs of developing instability, such as cracking or compression ridge development, would be advised for works within the highlighted risk area or within 500 m of it. Should any concerns arise, consultation would be held with a geotechnical specialist before work recommenced. Good construction methods would be used at all times, following current guidance, and no peat soil or topsoil material would be stored in this area.

Revised Risk Ranking:

Low

Detailed Assessment: Area 2



One cell located to the north of the proposed watercourse crossing across the unnamed tributary to the Nant Cefn-coch, in the eastern part of the Site, has been assigned Moderate risk. The assigned risk level relates to the sensitivity of the watercourse receptor and its associated High consequence rating.

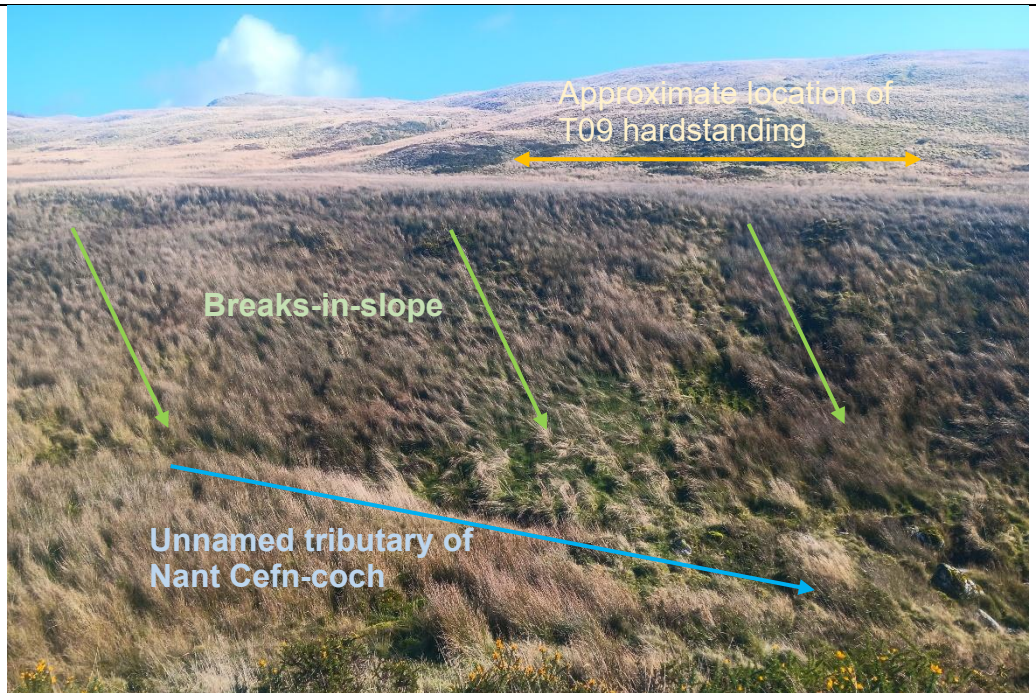
Calculated likelihood for the cell is Likely, reflecting the steep slopes and breaks-in-slope present within the cell which are associated with the incised watercourse channel. The consequence rating is High in the cell as a result of the watercourse sensitivity.

Peat soil depth in the cell is 0.85 m, with an average slope angle of 11.3°. There is one peat soil depth recorded within the highlighted cells.

Potential Runout from any Failure:

Any failure in this cell would travel west, terminating in the unnamed tributary of Nant Cefn-coch. A failure could affect the integrity of the channel, may cause temporary damming of the watercourse and would be likely to cause a reduction in water quality downstream. A substantial failure could affect the integrity of the bridge crossing, although this is unlikely. Runout paths are indicated by arrows.

Limited peat soil was identified upslope of the highlighted cell and the presence of exposed bedrock further reduces the likelihood of soils upslope of the highlighted cell being destabilised during a failure.



Photograph looking towards Area 2. The breaks-in-slope associated with the channel of the Unnamed tributary of Nant Cefn-coch are visible. The hardstanding for T09 is located on the slope beyond the flat area of ground above the watercourse channel.

Mitigation

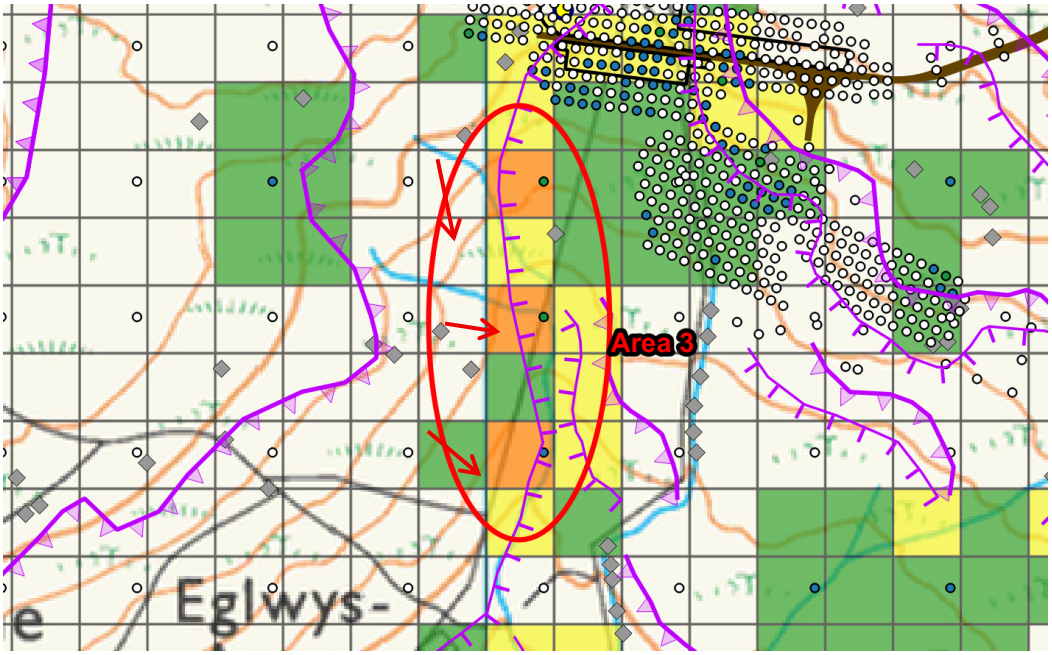
No signs of instability or potential instability were observed in this area. It is clear from the measured peat soil depths that peat soil coverage is variable in this area, including sections with no peat soil presence and small isolated pockets of peat soil in some areas. The areas with the steeper slopes and the areas with peat soil are not coincident and, therefore, it is considered that the model used has over-estimated the risk at this location.

All construction works in this area would be under the supervision of the ECoW at all times. Visual monitoring of the watercourses and intervening ground would be recommended between the location of the temporary bridge working area and the highlighted risk cell. Daily monitoring for any signs of developing instability, such as cracking or compression ridge development, would be advised for works within the highlighted risk area or within 500 m of it. Should any concerns arise, consultation would be held with a geotechnical specialist before work recommenced. Good construction methods would be used at all times, following current guidance, and no peat soil or topsoil material would be stored in this area.

Revised Risk Ranking:

Low

Detailed Assessment: Area 3



Three cells located to the south of T01, in the western part of the Site, have been assigned Moderate risk. The assigned risk level relates to the sensitivity of the watercourse receptor, and its associated High consequence rating.

Calculated likelihood for the cell is Likely, reflecting the breaks-in-slope present within the cells which are associated with the watercourse channel. The consequence rating is High in the cells as a result of the watercourse's sensitivity.

Peat soil depth in the cells is 0.8 m, 0.85 m and 0.9 m, with average slope angles of 11.8°, 12.3° and 12.7°. There is one peat soil depth recorded within each of the highlighted cells.

Potential Runout from any Failure:

Any failure in these cells would travel east and south, terminating in the unnamed watercourse which flows towards Llyn Maen Bras. A failure could affect the integrity of the channel, may cause temporary damming of the watercourse and would be likely to cause a reduction in water quality downstream. Runout paths are indicated by arrows.

Limited peat soil was identified upslope of the highlighted cell and the presence of exposed bedrock further reduces the likelihood of soils upslope of the highlighted cell being destabilised during a failure.

Photograph looking towards Area 3. The breaks-in-slope associated with the channel of the unnamed watercourse are visible.

Mitigation

No signs of instability or potential instability were observed in this area. It is clear from the measured peat soil depths that peat soil coverage is highly variable in this area, including sections with no peat soil presence and others with small isolated pockets of peat soil in areas adjacent to watercourses. The areas with the steeper slopes and the areas with peat soil are not coincident and, therefore, it is considered that the model used has over-estimated the risk at this location.

The nearest development is the proposed earthworks for T01, approximately 35 m north from the most northerly highlighted cell. Peat soil probing and coring around T01 identified very limited peat soil presence in this area and it is unlikely that the construction activity would have any influence on the stability of this cell.

The two southerly cells are considerably further from any proposed development (>135 m). Given the distance and limited peat presence upslope, it is very unlikely that any construction activity would have any influence on stability for these cells.

All construction works in this area would be under the supervision of the ECoW at all times. Visual monitoring of the watercourses and intervening ground would be recommended between the location of T01 and the highlighted risk cells. Vehicle tracking into the highlighted area would not be permitted for any reason. Daily monitoring for any signs of developing instability, such as cracking or compression ridge development, would be advised for works within the highlighted risk area or within 500 m of it. Should any concerns arise, consultation would be held with a geotechnical specialist before work recommenced. Good construction methods would be used at all times, following current guidance, and no peat soil or topsoil material would be stored in this area.

Revised risk ranking:

Low

6.2 Mitigation

6.2.1 The following mitigation measures would be implemented to ensure that slope stability is maintained across the Site and to minimise the risk of inducing a peat slide.

6.2.2 Construction work would make use of current best practice guidance relating to developments in peatland areas. A risk management system, such as a geotechnical risk register, would be developed as part of the post-consent detailed design works. This would be maintained through all subsequent stages of the project and updated as necessary whenever new information becomes available. During construction, members of project staff would undertake advance inspections and carry out daily monitoring for signs of peat landslide indicators within highlighted risk area or within 500 m of it. A geotechnical specialist would be on call to provide advice, if required by Site conditions.

6.2.3 Micrositing would be used to avoid possible problem areas. This would be assisted by additional verification of peat soil depths, to full depth, in any highlighted areas where construction work is required. Track drainage would be installed in accordance with published good practice documentation and would be minimised in terms of length and depth in order to minimise concentration of flows.

6.2.4 Construction activities would be restricted during periods of wet weather, particularly for any work occurring within 20 m of a watercourse or within areas of identified peat soil (>1.0 m). Careful track design would ensure that the volume and storage timescale for excavated materials would be minimised as far as practicable during construction works.

6.2.5 Monitoring checks would be undertaken along identified higher-risk watercourse channels following periods of heavy rain and/or high flow. These would look for any recent signs of bank instability that may affect the flow or lead to a larger destabilisation of the nearby bank area. Any identified instabilities would be brought to the attention of the ECoW as soon as possible.

6.2.6 Vegetation cover would be re-established as quickly as possible on track and infrastructure verges and cut slopes, by re-laying of excavated soil turves, to improve slope stability and provide erosion protection. Additional methods, including hydroseeding and/or use of a biodegradable geotextile, would be considered in specific areas, if necessary.

6.2.7 Construction staff would be made aware of peat slide indicators and emergency procedures. Emergency procedures would include measures to be taken in the event that an incipient peat slide is detected.

6.2.8 Key early indicators of peat soil instability are:

- Tension cracks in the upper layers or to full depth of peat soil may indicate an accumulation of stress in peat soils. In addition, cracking can provide a route for surface water to infiltrate rapidly through the peat soil body, contributing to elevated pore water pressure and lubrication along lines of weakness.
- Compression ridges, usually indicative of displacement upslope which has led to formation of ridges within the peat body.
- Peat soil creep, usually visible as tilting of fence posts or young trees. This may be accompanied by tension cracking and/or compression ridges.

Infrastructure Design

6.2.9 Careful and informed infrastructure design forms a key measure for prevention of induced instability in peat soil. The collated peat soil depth information has been used to inform the proposed infrastructure layout throughout the design process. Incursion into areas of peat soil has been kept to a practical minimum by careful design and would be reinforced by careful micrositing, in order to minimise disruption to peatland ecosystems and hydrology, and to avoid the risk of induced peat soil instability.

6.2.10 Any peat soil present along the track routes would be excavated and stored for use in peatland restoration or restoration of temporary construction areas where appropriate.

6.2.11 Trackside ditches would be constructed as required. For tracks parallel or sub-parallel to contours, best practice recommendations are for a ditch along the uphill side only, with cross-drains installed at regular intervals below the track to minimise flow concentration. Cross-drains would discharge onto vegetated ground where possible, to encourage the spread of surface flow rather than focused flow and the consequent development of new drainage channels. Tracks crossing contours may require ditches or swales on both sides. In all cases, lengths and depths of trackside drainage would be minimised, particularly in areas where peat soil deeper than 0.3 m is present. There would be a requirement for some trackside drainage to minimise track surface erosion and damage.

7 CONCLUSIONS

7.1.1 A detailed assessment of peat slide risk has been carried out for the Proposed Development. All proposed new and upgraded infrastructure has been covered by the assessment.

7.1.2 The assessment found that the majority of the Site has a **Negligible** or **Low** risk of peat landslide.

7.1.3 Eight cells forming three groups, located close to proposed infrastructure or within the application boundary, have been identified as having **Moderate** risk of peat soil instability. No cells were found to have a **High** risk of peat soil instability. These three groups have been individually assessed in greater detail, taking into account location-specific details. In each of the three areas, the apparent risk is an artefact of the assessment mechanism, which uses maximum peat soil depth and average slope for each grid cell, and which also applies a higher likelihood of failure to areas with pronounced breaks-in-slope.

7.1.4 Two of the areas have watercourses with incised channels, leading to very pronounced breaks-in-slope, which in turn has given a higher estimation of risk for these areas.

7.1.5 For cells distant from proposed infrastructure, the risk relates to natural peat slide. This can be controlled by avoiding any incursion into these areas. It is recommended that construction areas are demarcated, and all site staff are made aware of the requirement to stay within the marked construction corridor at all times.

7.1.6 For all three areas, mitigation measures have been recommended to control the peat landslide hazard. For all areas, the peat landslide hazard can be controlled by use of good construction practice and micrositing. The reassessed risk of instability is Low for all highlighted areas, rather than the initial estimate of Moderate.

7.1.7 Good construction methods and appropriate micrositing would also be effective at controlling residual peat landslide risk for lower risk locations at the Site. Providing that the recommended mitigation measures are put in place and adhered to, the risk of peat landslide as a result of the Proposed Development is not significant.

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FIGURES

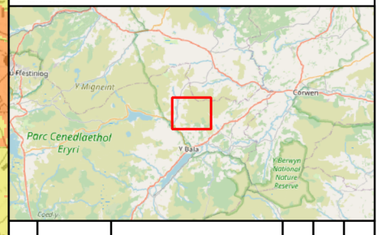
290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Slope Angles (°)
- 0 - 0.001
- 0.001 - 4
- 4 - 8
- 8 - 12
- >12

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters



Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.1
Slope Mapping

ID:P664094_Figure7.5.1 Slope Mapping

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

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290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Geomorphology
- Concave break-in-slope
- Convex break-in-slope
- Exposed bedrock

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.2
Geomorphology

ID:P664094_Figure7.5.2 Geomorphology

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

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290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3a
Peat Soil Depth Overview

ID:P664094_Figure7.5.3a Peat Soil Depth Overview

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094-Foel Fach\GIS\01 EIA & VA figures

291000E 291100E 291200E 291300E 291400E 291500E 291600E 291700E 291800E

341200N 341100N 341000N 340900N 340800N 340700N 340600N

Neuadd M

Glan-y

Wern

awr

Ws

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3b
Peat Soil Depth

ID:P664094_Figure7.5.3b Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

291800E 291900E 292000E 292100E 292200E 292300E 292400E 292500E

341400N 341300N 341200N 341100N 341000N 340900N 340800N

Llaithgwm

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3c
Peat Soil Depth

ID:P664094_Figure7.5.3c Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094 Foel Fach\GIS\2. EIA & FA figures

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341700N 341600N 341500N 341400N 341300N 341200N 341100N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3d
Peat Soil Depth

ID:P664094_Figure7.5.3d Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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342000N 341900N 341800N 341700N 341600N 341500N 341400N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
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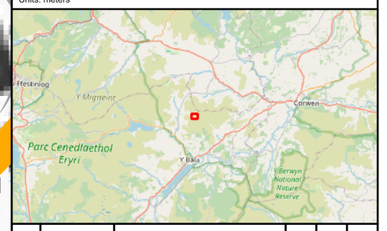
Ellipsoid: EPSG:7001
Units: meters



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Foel Fach Wind Farm

TITLE:

Figure 7.5.3e
Peat Soil Depth

ID:P664094_Figure7.5.3e Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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341500N 341400N 341300N 341200N 341100N 341000N 340900N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:
Figure 7.5.3f
Peat Soil Depth

ID:P664094_Figure7.5.3f Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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342000N 341900N 341800N 341700N 341600N 341500N 341400N

Foel Fach

Peat Soil Depth (m)

- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)

- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3g
Peat Soil Depth

ID:P664094_Figure7.5.3g Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

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342500N 342400N 342300N 342200N 342100N 342000N 341900N

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Cairn BSs

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3h
Peat Soil Depth

ID:P664094_Figure7.5.3h Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

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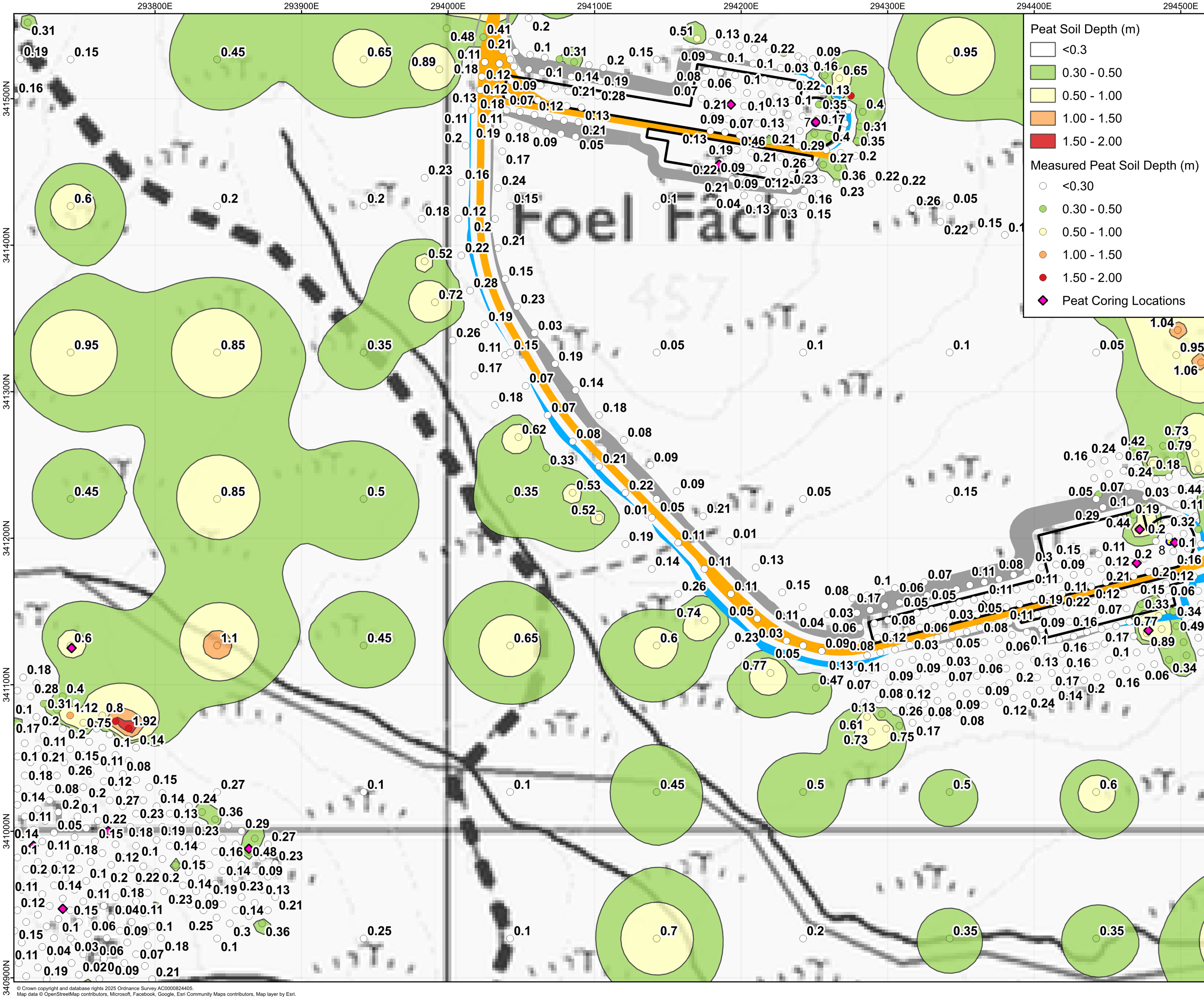

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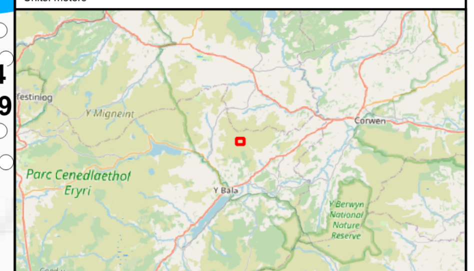
Units: meters



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TITLE:

Figure 7.5.3i
Peat Soil Depth

ID:P664094_Figure7.5.3i Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
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00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:
Figure 7.5.3j
Peat Soil Depth

ID:P664094_Figure7.5.3j Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

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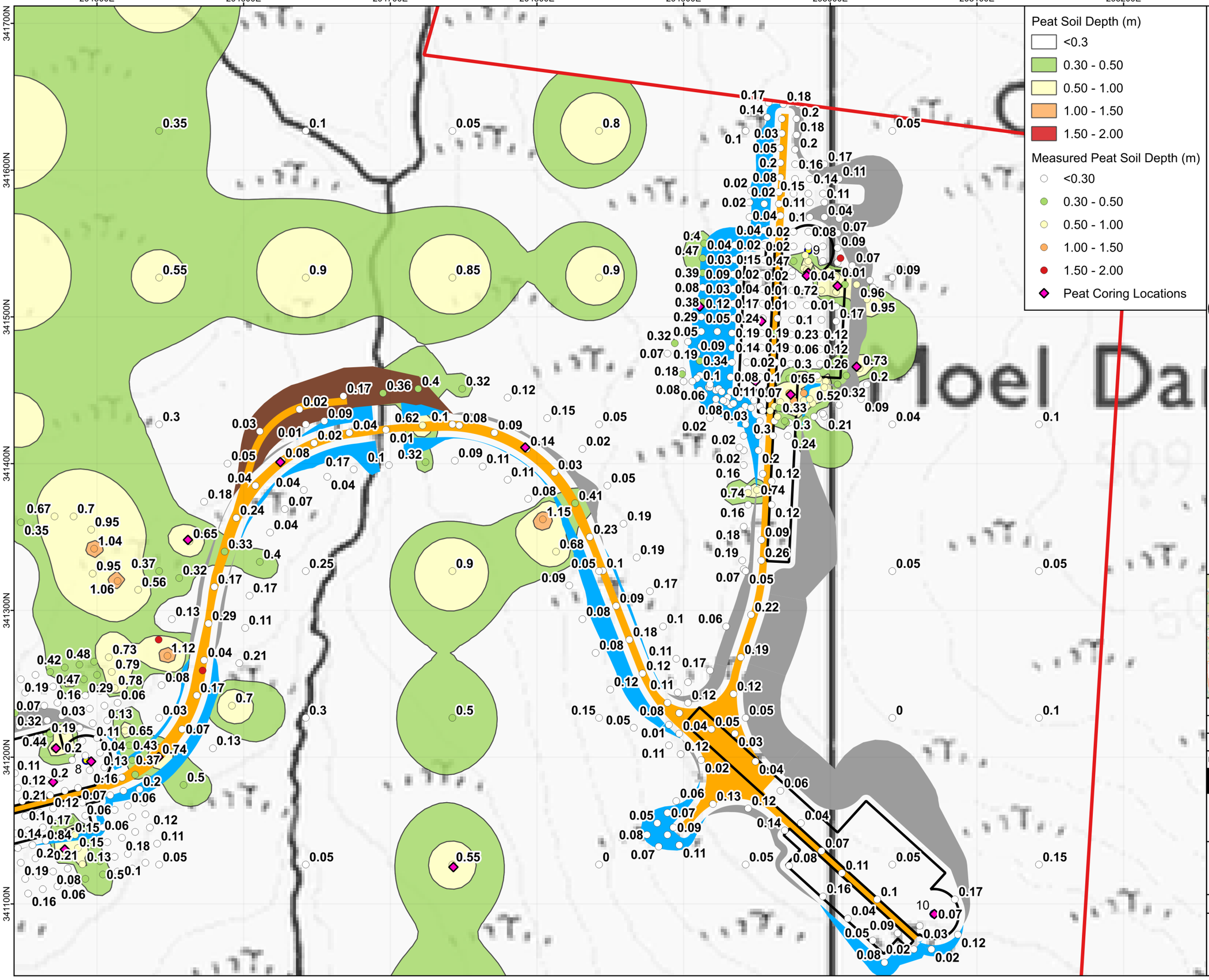

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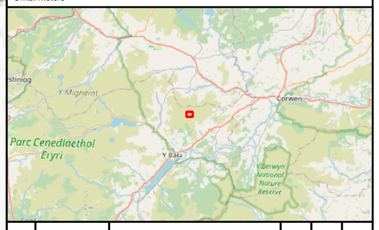

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3k
Peat Soil Depth

ID:P664094_Figure7.5.3k Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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341200N 341100N 341000N 340900N 340800N 340700N 340600N

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Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3l
Peat Soil Depth

ID:P664094_Figure7.5.3l Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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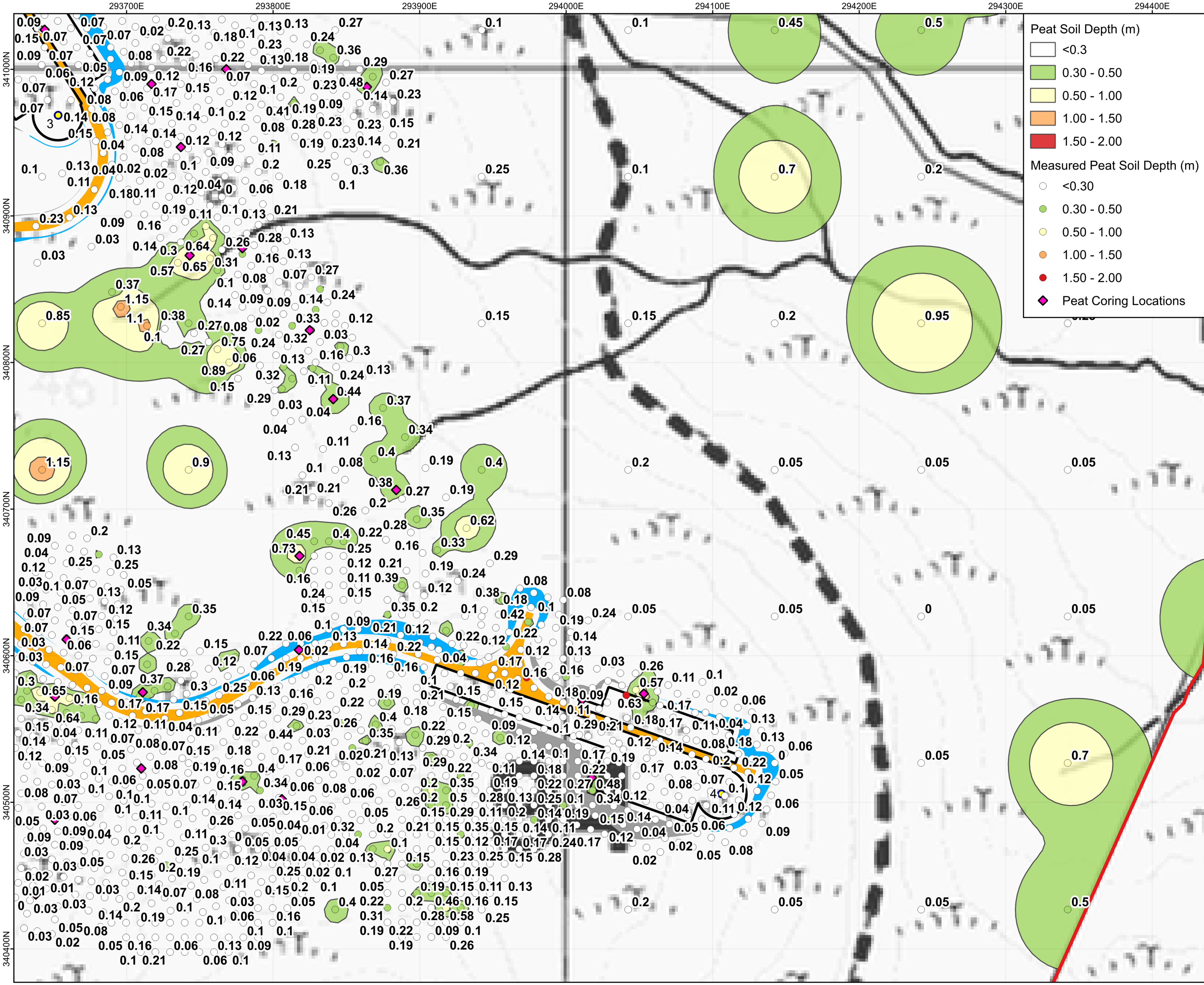

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
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Ellipsoid: EPSG:7001
Units: meters

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1.1	05/11/2025	Second Draft	CP	GE	CI
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Foel Fach Wind Farm

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TITLE:

Figure 7.5.3m
Peat Soil Depth

ID:P664094_Figure7.5.3m Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

293600E 293700E 293800E 293900E 294000E 294100E 294200E 294300E

340500N 340400N 340300N 340200N 340100N 340000N 339900N

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LLAI

Peat Soil Depth (m)

- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)

- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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1.1	05/11/2025	Second Draft	CP	GE	CI
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Foel Fach Wind Farm

TITLE:

Figure 7.5.3n
Peat Soil Depth

ID:P664094_Figure7.5.3n Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

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glwys-
Anne

0.05 0.05 0.1 0.1 0.7 0.8 0.7
0.05 0 0.85 0.15 0.25 0.25 0.25
0.2 0.7 0.15 0.05 0.8 0.1 0.05
0.1 0.25 0.65 0.8 0.4 0.45 0.05 0
0.9 0.3 0.7 0.55 0.4 0.05 0.05 0.05
0.5 0.9 0.35 0.7 0.25 0.1 0.05 0.05
0.4 0.3 0.4 0.45 0.7 0.65 0.05 0.3

Peat Soil Depth (m)

- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

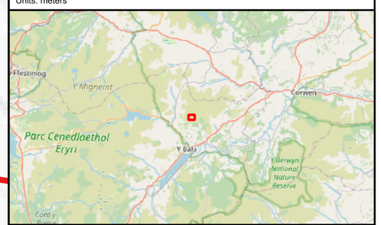
Measured Peat Soil Depth (m)

- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters



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Foel Fach Wind Farm

TITLE:

Figure 7.5.3o
Peat Soil Depth

ID:P664094_Figure7.5.3o Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

N W E S

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339900N
339800N
339700N
339600N
339500N

0.65 0.1 0.5 0.9 0.35 0.7
0.65 0.25 0.4 0.3 0.4 0.45
0.55 0.45 0.95 0.75 0.95 0.25 0.85 1.1
0.5
0.75 0.6 0.25 0.6 0.75 0.75 0.15
0.4 0.25 0.35 0.25 0.05 0.1 0.2
0.1
0.6 0.3 0.3 0.4 0.45 0.2 0.35 0.05
0.55 0.05 0.15 0.3 0 0.05 0.1 0.05 0.1

Sheepfold
Llyn Maen Bras

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

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Foel Fach Wind Farm

TITLE:

Figure 7.5.3p
Peat Soil Depth

ID:P664094_Figure7.5.3p Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

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292100E 292200E 292300E 292400E 292500E 292600E 292700E 292800E

340200N 340100N 340000N 339900N 339800N 339700N

0.05 0.05 0 0 0.05 0.15 0.1
0.15
0.05 0 0 0.05 1.15 0.5 0.5
0.05
0.05 0.85 0.75 0.7 0.55 0.65 0.1 0.5
0.05 0.05 0.5 0.45 0.4 0.65 0.25 0.4
0.05
0.2 0.3 0.35 0.55 0.45 0.95
0.5 0.5 0.6 0.75 0.6 0.25

Maen Bras

Sheepfold

Llyn Maen Bras

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3q
Peat Soil Depth

ID:P664094_Figure7.5.3q Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094-Foel Fach\GIS\00_EIA & IA figures

292100E 292200E 292300E 292400E 292500E 292600E 292700E 292800E

340700N 340600N 340500N 340400N 340300N 340200N

Cefn-ffordd

Eglwys-Anne Warren Ffridd

0 0.1 0.05 0.2

0 0.05 0.15 0.2 0.05

0 0.1 0.2 0.2 0.05 0.1 0.05

0.15 0.2 0.1 0.05 0 0 0.05

0.05 0.05 0.25 0.05 0 0 0.2

0.05 0.05 0 0 0.05 0.15 0.15 0.1

0.15 0.05 0 0 0.05 1.15 0.5 0.5 0.9

Peat Soil Depth (m)

- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)

- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3r
Peat Soil Depth

ID:P664094_Figure7.5.3r Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

N W E S

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094 Foel Fach\GIS\01 EIA & LVIA figures

292900E 293000E 293100E 293200E 293300E 293400E 293500E 293600E

341000N 340900N 340800N 340700N 340600N 340500N 340400N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3s
Peat Soil Depth

ID:P664094_Figure7.5.3s Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - HBS Group\Documents\000 Projects\P2680004 Foel Fach\GIS\01 EIA & TA figures

292500E 292600E 292700E 292800E 292900E 293000E 293100E 293200E

341200N 341100N 341000N 340900N 340800N 340700N 340600N

Peat Soil Depth (m)
- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

Measured Peat Soil Depth (m)
- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3t
Peat Soil Depth

ID:P664094_Figure7.5.3t Peat Soil Depth

0 0.04 0.08 km
Kilometers
Scale: 1:2400 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - HSK Group\Documents\00 Projects\2830\004 Foel Fach\GIS\1 EIA & TA figures

294200E 294300E 294400E 294500E 294600E 294700E 294800E 294900E

342500N 342400N 342300N 342200N 342100N 342000N

BS

0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05

0.55 0.52 0.06 0.17 0.22 0.14 0.18 0.21 0.18 0.2 0.1 0.19 0.07 0.13 0.21 0.16 0.11 0.21 0.07 0.18 0.23 0.19 0.12 0.15 0.13 0.11 0.22 0.12 0.18 0.11 0.17 0.13 0.13 0.05 0.11 0.07 0.16 0.18 0.16 0.1 0.22 0.05 0.2 0.75 0.04 0.18 0.13 0.12 0.18 0.19 0.09 0.04 0.1 0.15 0.07 0.15 0.12 0.16 0.13 0.14 0.16 0.04 0.07 0.02 0.06 0.03 0.09 0.13 0.12 0.08 0.03 0.1 0.24 0.07 0.11 0.23 0.21 0.22 0.11 0.13 0.15 0.06 0.06 0.01 0.18 0.13 0.12 0.14 0.13 0.04 0.03 0.05 0.03 0.04 0.05 0.2 0.16 0.14 0.13 0.15 0.13 0.05 0.03 0.04 0.03 0.13 0.05 0.08 0.11 0.1 0.08 0.11 0.07 0.03 0.04 0.04 0.03 0.03 0.1 0.23 0.19 0.12 0.15 0.05 0.05 0.04 0.03 0.15 0.1 0.15 0.17 0.06 0.03 0.02 0.04 0.18 0.05 0.15 0.15 0.04 0.04 0.01 0.12 0.16 0.13 0.08 0.04

1.2 1.15 1.25 0.6 1 0.6 0.1 0.8

0 0.04 0.08 km

Kilometers

Scale: 1:2400 @A3

N E S W

REV 1.1

Peat Soil Depth (m)

- <0.3
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00

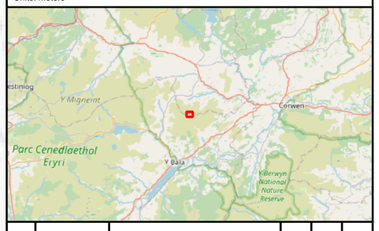
Measured Peat Soil Depth (m)

- <0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- Peat Coring Locations

LEGEND:

- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters



Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.3u
Peat Soil Depth

ID:P664094_Figure7.5.3u Peat Soil Depth

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094 Foel Fach\GIS\07. EIA & TA Figures

290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Likelihood Rating
- No Peat
- Negligible
- Unlikely
- Probable
- Likely

Likelihood at Point
- No Peat
- Negligible
- Unlikely
- Probable
- Likely

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters

Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:

Figure 7.5.4
Likelihood Rating

ID:P664094_Figure7.5.4 Likelihood Rating

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094 Foel Fach\GIS\02_EIA & HA figures

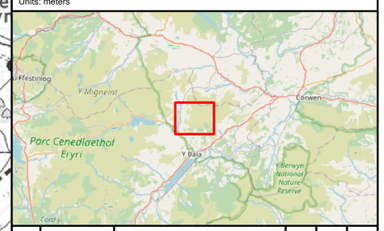
290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Consequence Rating
- Low
- Moderate
- High
- Very High

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters



Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:
Figure 7.5.5
Consequence Rating

ID:P664094_Figure7.5.5 Consequence Rating

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

Path: C:\Users\chris.palmer\OneDrive - RSK Group\Documents\00 Projects\P664094 - Foel Fach\GIS\01 EIA & TA figures

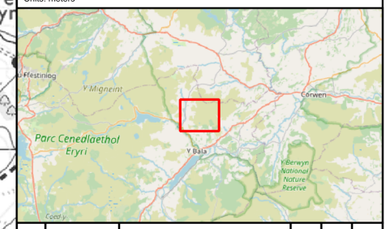
290500E 291200E 291900E 292600E 293300E 294000E 294700E 295400E

342300N 341600N 340900N 340200N 339500N 338800N

Risk Ranking
- No Peat
- Negligible
- Low
- Moderate
- Detailed Assessment Areas

LEGEND:
- Turbine
- Site Boundary
- Hardstands
- Tracks
- Verges
- Substation
- Batching Compound
- Construction Compound
- Bridge Temporary Working Area
- Batching Earthworks Cut
- Batching Earthworks Fill
- LiDAR Compound
- Borrow Pit
- Cut
- Compound Earthworks Cut
- Compound Earthworks Fill
- LiDAR Earthworks Cut
- Substation Earthworks Cut
- Substation Earthworks Fill

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: EPSG:7001
Units: meters



Rev	Date	Description	Drn	Chk	App
1.1	05/11/2025	Second Draft	CP	GE	CI
00	24/06/2025	First Draft	CP	EA	CI

Foel Fach Wind Farm

TITLE:
Figure 7.5.6
Risk Ranking and Detailed Assessment Areas

ID:P664094_Figure7.5.6 Risk Ranking and Detailed Assessment Areas

0 0.3 0.6 km
Kilometers
Scale: 1:15000 @A3

REV 1.1

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ANNEX 1: PEAT CORE LOGS

Notes to Accompany Peat Coring Results
Peat soil coring was undertaken by WRc between the 25 November and 1 December 2024, with additional gap-filling surveys taken between 19 and 21 February and 17 April 2025. The majority of the core locations had been identified by WRc prior to the Site visits, with some taken extemporaneously in the field in response to the Phase 2 peat soil survey findings.

Main Findings
Coring locations were predominantly selected around the Site in areas where Phase 1 and 2 peat soil surveys had indicated the presence of peat soils underlying proposed infrastructure. Where there was proposed infrastructure with no peat soils indicated, the core was taken at random. Vegetation at the cores ranged throughout the Site, with most in areas dominated by grasses, sphagnum mosses and heather. A minority of the cores were taken in areas of improved grassland.

Generally, where peat soil was identified, it was more decomposed at depth and the moisture content of the cores ranged from low to very high. Clay was found to be widespread across the Site, meaning that many of the peat soil depths were able to be calibrated to a lower value.

In-depth descriptions of the cores, peat soil depth, auger depth and calibrated peat soil depths are provided in the table below. Photographs of a selection of cores sent off for analysis are also included at the end of this document.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4750	293061	340888	1	0.97	0.9	0-5 cm = H2 B2. 5-19 cm = H8 B2. Some clay content. 19-39 cm = H8 B2. Similar to above but firmer. 39-50 cm-H8 B3. Darker than above, peaty clay. 50-54 cm = H7 B2. 54-63 cm = H8 B3. Peaty clay. 63-74 cm = H8 B3. 74-90 cm = H8 B3. Increased plant content with small specs of clay. 90-97 cm = B3. Light grey coloured clay.
4751	293129	340937	0.65	0.67	0.52	0-4 cm = H4 B2. 4-13 cm = H8 B2. 13-21 cm =H7 B3. Increased plant matter content. 21-47 cm= H7 B3. Clay like but still peaty, plant roots visible. 48-50 cm =H7 B3. 50-52 cm = H8 B2. Partial sample. 52-67 cm = B3. Light grey clay 20% plant material.
4752	293092	340912	0.72	0.75	0.44	0-8 m = H6 B3. 8-21 cm = H8 B3. 21-34 cm = H3 B3. Some specs of clay. 34-44 cm = H7 B3. Reduced clay content compared to above. 44-55 cm = B3. Peaty clay. 55-75 cm = B3. Light grey clay some gravel sized minerals.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4753	293175	340912	0.65	0.8	0.53	0-12 cm = No sample. 12-17 cm = H2 B3. 17-31 cm = H7 B3. Clay like but majority peat. 31-40 cm = H8 B3. Higher clay content with less plant matter. 40-50 = H8 B3. Same as above. 50-53 cm = H8 B3. Gritty texture. 53-71 = B3. Mid grey clay, no plant material some pebbles. 71-80 = B2. Partial sample, lighter coloured clay.
4754	293638	340437	0.15	0.13	0.02	0-2 cm = H1 B4. Just plant fibre, minimal decomposition, includes a rhizome. 2-8 cm = B4. Crumbly clay, black in colour. 8-12 cm = B4. Same as above but more plant fibre, around 15%. 12-13 cm = Crumbly clay and mineral soil, red particles.
4755	293651	340488	0.25	0.25	0.09	0-2 cm = H3 B4. 2-9 cm = H5 B4. Clay like, very crumbly. 9-14 cm = B4, Firm clay that crumbles, browny-grey, 5% plant content. 14-17 cm = B4. As above but with light-coloured mineral grains. 17-25 cm = B4. Slightly hard clay, orange coloured mineral with 2% plant content, very crumbly.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4756	293651	340572	0.63	1	0.62	0-10cm = No sample. 10-13 cm = H5 B2. 13-23 cm = H8 B3. 23-44 cm = H9 B3. Clay like with some peat content. 44-50 cm = No sample. 50-62 cm = H9 B3. Continues with last sample. 62-75 cm = B4. Lighter clay with gravel sized grains, 5% plant content. 75-100 cm = B2. Very light-coloured wet clay, same as above but lighter in colour.
4757	293659	340611	0.39	0.35	0.17	0-2 cm = H3 B2. 2-4 cm = H4 B2. 4-5 cm = H5 B2. 5-11 cm = H6 B3. 11-17 cm = H8 B3. 17-27 cm = B3. Clay like, lighter in colour, 10% plant content. 27-33 cm = B3. Slightly firm clay, not crumbly, no visible mineral grains, 5% plant content. 33-35 cm =B2. As above but B2.
4758	293779	340514	0.52	0.85	0.4	0-2.5 cm = H2 B3. 2.5-15 cm = H7 B3. Clay like. 15-40 cm = H7 B3. As above but more clay content. 40-50 cm = B4. Grey clay, mineral grains present, 10% plant matter. 50-72 cm = B3. Clay. 72-85 cm = Clay but gritty and sandy.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4759	293806	340502	0.77	0.73	0.14	0-5 cm = H2 B2. 5-9 cm = H4 B2. 9-14 cm = H9 B3. Clay like, no protrusion. 14-27 cm = B4. Clay with gravel sized mineral grains and 10% plant matter. 27-38 cm = B4. As above but 20% plant matter. 38-50 cm = H9 B3. Darker in colour, 15% plant, no mineral grains, peaty clay. 50-53 cm = H6 B2. 53-73 cm = H8 B2. Mixture of peat and clay, with sand sized mineral grains.
4760	293711	340575	0.29	0.23	0.18	0-1 cm = H3 B2. 1-10 cm = H6 B2. Lots of intact twig like matter. 10-13 cm = H5 B3. 13-18 cm = No sample. 18-23 cm = B3. Mixture of clay and peat. Like brown clay with some mineral grains. 30% plant content.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4761	293779	340878	0.8	1	0.25	0-25 cm = No sample. 25-35 cm = B3. Less than 5% plant matter, mid grey colour, sticky texture. 35-45 cm = B3. Slightly firmer clay with minimal plant matter, contains lighter coloured clay streaks. 45-50 cm = No sample. 50-63 cm = B2. Wetter clay with mid grey colour. 63-75 cm = B2. More plant matter content at 15%, gritty particles, lighter colour. 75-83 cm = much firmer clay no plants, till and gritty. 83-90 cm = B4. Minerals in clay lighter colour, pebbles present. 90-100 cm = Very crumbly laminated rock parties in clay, potentially till.
4762	293825	340822	0.28	0.27	0.22	0-3 cm = H2 B3. 3-10 cm = H3 B2. 10-14 cm = H6 B4. 14-22 cm = H7 B3. Start of clay content but mostly peat. 22-27 cm = B2. Mid grey clay with orange mineral, less than 5% plant material.
4763	293743	340873	0.62	0.82	0.53	0-5 cm = H1 B2. 5-7 cm = H3 B2. 7-26 cm = H6 B2. 26-46 cm = H8 B3. 46-52 = H8 B2. Same as above but only partial sample. 52-72 cm = H9 B3. Possible clay content. 72-82 cm = H9 B3. Partial content but same as above.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4764	293669	341073	0.55	0.77	0.55	0-5 cm = H3 B2. 5-23 cm = H6 B3. 23-29 cm = H7 B3. Some clay content. 29-36 cm = B4. Predominantly clay with some pebbles mid grey colour. 36-42 cm = B4. Light grey clay, very gritty, minimal vegetation. 42-55 cm = H8 B3. Peaty clay. 55-65 cm = H3. Predominantly clay with some peat. 65-77 cm = B3. Clay with gritty, some plant structure with no peat.
4765	293768	341000	0.26	0.23	0.17	0-3 cm =H2 B3. 3-8 cm = H5 B3. 8-17 cm = H8 B4. 17-19 cm = Clay with gravel sized substrate and white mineral specs. 19-23 cm = No sample.
4766	293864	340988	0.5	0.74	0.45	0-3 cm = H1 B4. 3-11 cm = H6 B4. 11-21 cm = H8 B4. Partial sample very crumbly, some clay. 21-26 cm = H9 B4. 26-37cm = H9 B4. Increased clay content, majority peat. 37-45 cm = H8 B4. Clay present, majority peat. 45-48 cm = B4. Increased clay content. 48-60cm H8 B3. 60-66 cm = No sample. 66-74 cm = H9 B4.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4767	293644	341027	0.3	0.18	0.11	0-4 cm = H2 B3. 4-10 cm = H5 B3. 10-18 cm = B4. Peaty clay with pebbles and visible clay minerals minimal vegetation.
4768	294985	341530	1.35	1	0.8	0-30 cm = H4. 30-80 cm = B2. 35% plant matter, very soft, rather wet. 80-100 cm = B4. Dryer clay with gravel sized clumps of dryer clay.
4769	294973	341447	0.85	0.85	0.85	0-6 cm = H5 B2. 6-14 cm = H9 B4. 14-17 cm = H7 B4. Light brown. 17-58 cm = H8 B4. 58-85 cm = H7 B4. Lighter in colour with fine plant fibres.
4770	294953	341497	0.43	0.5	0.41	0-41 cm = H9 B4. 41-50 cm = B4. Slightly dry clay, crumbly fine matrix.
4771	294911	341507	0.65	0.8	0.35	0-35 cm = H5 B3. 35-80 cm = H10 B3. Very soft clay but with a mixture of mineral and organic.
4772	294472	341206	0.74	0.74	0.74	0-7 cm = H7 B2. 7-20 cm = No sample. 20-32 cm = H8 B3. 32-50 cm = H7 B3. 50-54 cm = H9 B3. 54-74 cm = H9 B3. Clay-like with some sand sized grains 15% plant content.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4773	294478	341137	0.88	0.75	0.75	0-34 cm = No sample, too wet. 34-45 cm = H5 B2. 45-60 cm = H8 B2. 60-75 cm = H6 B3. Lots of woody debris and no clay/mineral grains.
4774	294365	341154	0.21	0.21	0.08	0-4 cm = H5 B3. 4-8 cm = H7 B4. Clay like with 10% plant content. 8-21 cm = B5. Grit sands and gravels within, light in colour, firm and crumbly.
4775	294470	341183	0.4	0.5	0.21	0-9 cm = H2, B1. 9-16 cm = H5, B2. 19-21 cm = H7 B3. Starting to be more claylike but still peaty. 21-32 cm = B4. Clay with 10% plant content. 32-50 cm = Clay, with rocks, lighter coloured clay with gravel sized rock and 5% plant.
4776	294185	341455	0.32	0.26	0.16	0-3 cm = H3 B1. 3-7 cm = H3 B2. 7-16 cm = H5 B3. Claylike. 16-26 cm = B3. Clay with 25% plant matter and lots of gravel.
4777	294193	341496	0.21	0.14	0.11	0-4 cm = H2 B2. 4-10 cm = H5 B3. Slightly clay but mostly peat. 10-14 cm = B4. Clay with 5% plant matter content and gravel grains.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4778	293378	341101	0.2	0.16	0.16	0-3 cm = H1 B2. 3-7 cm = H7 B2. Crumbly peat. 7-11 cm = H8 B3. Peaty clay. 11-13 cm = H8 B3. Some clay like texture. 13-16 cm = No sample.
4779	293430	341022	0.18	0.13	0.1	0-3 cm = H1 B2. 3-5 cm = H3 B2. 5-10 cm = H7 B2. Some clay particles present. 10-13 cm = Gritty mid grey clay with some peat minimal plant matter.
4780	293430	341042	0.2	0.14	0.1	0-1 cm = H1 B3. 1-3 cm = H3 B3. 3-10 cm = H8 B3. Very crumbly with some clay present. 10-14 cm = B2. Clay present visible mid grey particles some grit limited peat less than 0% plant.
4781	294043	341588	0.96	1	0.9	0-40 cm = No sample. 40-46 cm = H4 B1. 46-50 cm = H6 B1. 50-85 cm = H7 B2. Lots of plant matter. 85-90 cm = H8 B3. 90-100 cm = B3. Clay with 30% plant matter.
4782	294016	341564	1	1	1	Too wet for cores to stay in

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4783	293772	341899	1.2	1.35	0.5	0-10 cm = No sample. 10-22 cm = H8 B1. Acrotelm. 22-28 cm = H6 B4. 28-35 cm = H7 B3. 35-42 cm = H9. But clayish. 42-50 cm = No sample. 50-65 cm = B3. Clay with very undecomposed plant matter at approximately 35%. 65-79 cm = B2. As above but B2. 79-85 cm = H10. 20% plant matter, very clay or H10. 85-100 cm = H10 B3. Very wet clay with 5% plant content. 100-135 cm = H10 B2. The same as before but wetter.
4784	293753	341804	0.5	0.5	0.3	0-7 cm = H2 B1. 7-30 cm = H4 B4. Clay-like quite dry. 30-45 cm = B4. Clay with slight peat and 5-10% plant content. 45-50 cm = B3. Lighter colour, just clay under 5% plant content.
4785	293735	341707	1	1	1	0-50 cm = No sample. 50-63 cm = H4 B3. Slightly clay-like. 63-76 cm = H6 B2. 76-90 cm = H8 B3. 90-100 cm = H5 B3. More wood fibres, darker than top and less clay than top of sample.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4786	293487	340731	0.65	0.65	0.23	0-4 cm = No sample. 4-15 cm = H5 B4. 15-23 cm = No sample. 23-25 cm = B4. Dark grey clay. 25-37 cm = Mid grey clay limited plant fibres. 37-57 cm = No sample. 57-65 cm =B4. Clay with pebbles mid grey minimal plant.
4787	293448	340695	0.8	0.76	0.14	0-12 cm = No sample. 12-14 cm = H1 B2. 14-18 cm = B3. Mid grey clay. 18-45 cm = B3. Mid grey clay minimal plant content. 45-50 cm = No sample. 50-59 cm = B2. Partial sample mid grey clay. 59-66 cm = B2. Mid grey clay. 66-75 cm = Mid grey clay, some gravel, partial sample. 75-76 cm = No sample.
4788	293384	340699	0.65	0.84	0.34	0-6 cm = No sample. 6-9 cm = H2 B3. 9-17 cm = H7 B3. 17-25 cm = H7 B3. Clay present. 25-34 cm = H7 B3. Peaty clay. 34-47 cm = Light grey clay no plant content. 47-50 cm = Light grey gritty clay. 50-79 cm = No sample. 79-84 cm = B1. Very wet mid grey clay some fine particles.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4789	293372	340926	0.12	0.21	0.12	0-3 cm = H2 B4. 3-12 cm = H5 B4. Distinct wood twigs, very crumbly. 12-19 cm = Hard clay with sand grains, lighter in colour. 19-21 cm = Mineral soil and clay, dry and light-coloured.
4790	293841	340775	0.32	0.2	0.2	0-13 cm = B3. Slightly crumbly, mixture of peaty clay, less than 15% plant fibre, no large mineral grains, dark grey to black colour. 13-19 cm = B3. Very crumbly distinctive all clumps of peat and clay but poorly mixed, less 20% plant fibres. 19-20 cm = B3. Very crumbly peaty clay well mixed, less than 15% plant content.
4791	294062	342063	0.96	1	0.59	0-17 cm = H4, B2. 17-50 cm = H5, B3. 50-59 cm = H9, B1. 59-80 cm = Clay with no free water, 15% plant matter. 80-100cm = Clay with no plant matter.
4792	294225	342213	1.05	0.94	0.75	0-16 cm = H5 B2. 16-75 cm = H4 B3. 75- 94 cm = Clay minimal plant and mostly dry.
4793	294792	341411	1.28	1.5	0.15	0-10 cm = H3 B1. 10-15 cm = H7 B3. 15-50 cm = B4. Clay with 10% plant content. 50-120 cm = clay with 16% plant, B3, in places closer to B1 (At 1.10 there is a fragment of wood). 120-150 cm = Grey clay with pieces of gravel.
4794	294625	341401	0.4	0.21	0.05	0-5 cm = H5 B2. 5-21 cm = H7 B3. Clay/peat with some mineral.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4795	294542	341200	1.37	1.5	0.87	0-50 cm = No sample. 50-60 cm = H4 B2. Lots of organic matter. 60-72cm = H5 B3. Less organic matter, more of a matrix. 72-77 cm = H9 B3. Starting to look more like clay with some plant matter in it, clay like but peaty enough for H9. 77-87 cm = H9 B2. Returns to being peat like, lots less plant matter maybe 15% plant content, still clay like and very we with a mineral grain. 87-107 cm = B4. Clay with plant matter at 25%. 107-118 = Same as above but lighter colour. 118-150cm = As above but possibly wetter.
4796	294562	341348	0.95	0.91	0.59	0-4 cm = H8 B3. 4-19 cm = H9 B3. 19-50 cm = B4. Clay with 20% plant, light brown colour. 50-59 cm = H8 B3. 50-91 cm = Clay with 10% organic matter, includes some mineral grains and a pebble.
4797	294959	341538	0.49	0.5	0.1	0-10 cm = H4 B2. 10-50 cm = Moist soft clay 30% plant matter very plastic.
4798	295005	341521	1.61	1.5	1.5	0-50 cm = No sample-too wet to stay in corer. 50-54 cm = H6 B2. 54-150 cm = B3. 30%plant matter, moist spreadable.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4799	294949	341456	0.9	0.72	0.1	0-10 cm = H8 B4. Like a brown earth soil. 10-24 cm = B4. Clay with 10% plant matter, very light brown. 24-46 cm = H7 B3. Either soft clay or H7. 46-50 cm = B4. Mineral grains, gravel sized clumps of clay with silty particles. 50-72 cm = B4. Mineral grains.
4800	295018	341466	1.1	1.32	0.85	0-50 cm = No sample. 50-61 cm = H5 B2. 61-85 cm = H8 B3. Is between clay and peat. 85-100 cm = Clumps of drier clay, lighter colour. 5% plant matter. 100-132 cm = Light coloured clay.
4801	293423	341651	0.81	0.79	0.4	0-6 cm = H2 B3. 6-12 cm = H4 B4. Slightly clay-like. 12-30 cm = H5 B4. Peaty clay with 50% plant content. 30-40 cm = H8 B4. Lots of twig-like wood, darker in colour, very clayey-peat. 40-50 cm = B4. Clay with 25% plant matter, with peaty elements. 50-65 cm = H9 B3. Peaty clay. 65-79 cm = H9 B2. Clay-like.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4802	292974	341327	0.55	0.5	0.2	0-6 cm = No sample. 6-10 cm = H10 B2. 10-12 cm = B2. Clay with small grit and 20% vegetation. 12-26 cm = H8 B3. Peaty clay with specs of pure clay visible small gravel. 26-38 cm = Clay 10% plant matter small sandy grains mid grey colour. 38-50 cm = B3. Light grey clay ranges from grit to pebbles material with minimal roots.
4803	291249	340901	0.42	0.37	0	0-6 cm = B4. Clay with vegetation 80%. 6-17 cm = crumbly mid grey clay with lots of plant roots. 17-37 cm = B4. Thick clay light grey quite crumbly with small plant matter.
4804	293537	340734	0.18	0.18	0.02	0-2 cm = H2 B2. Some clay visible. 2-10 cm = B2. Predominantly mix grey clay limited peat and less than 10% plant content. Crumbly texture. 10-14 cm = B2. Light coloured clay golden brown specs adn no peat. Crumbly texture. 14-18 cm = B2. White clay golden brown specs, crumbly texture.
4805	293428	341207	0.16	0.1	0.08	0-4 cm = H2 B4. 4-8 cm = H3 B4. 8-10 cm = B4. Mineral soil present, some gravel, lighter colour, not peat.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4806	293477	341087	0.42	0.34	0.26	0-2 cm = H2 B4. 2-9 cm = H5 B4. 9-26 cm = H7 B4. Very crumbly and very dark. 26-34 cm = H10 B4. Clay-like, dry and crumbly.
4807	293642	341127	0.18	0.14	0.11	0-3 cm = H1 B4. 3-7 cm = H5 B4. 7-11 cm = H8 B4. Some clay. 11-14 cm = B5. Clay with grit and some peat.
4808	293195	340822	0.91	0.77	0.63	0-4 cm = H2 B2. 4-23 cm = H8 B2. Some clay particles present. 23-51 cm = H9 B3. Peaty clay. 51-63 cm = Peaty clay with some pebbles lighter colour H8 B3. 63-68 cm = Dark grey clay minimal plant material. 68-77 cm = Lighter grey clay with pebbles.
4809	293213	340795	0.73	0.68	0.26	0-11 cm= No sample. 11-15 cm = H1 B1. 15-26 cm = H8 B2. Peaty clay. 26-50 cm = Clay dark grey with white grit. 50-59 cm = Lighter coloured wet clay with slightly larger grit. 19% plant matter. 59-68 cm = B3. Lighter colour with small pebbles.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4810	293210	340740	1.23	1.34	0.1	0-10 cm = H2 B2. 10-15 cm = B3. Clay with 10% plant matter. 15-75 cm = B3. Clay with 5% plant matter, plant structure distinct. 75-114 cm = B3. Darker with distinct wood fibres, slightly higher plant and peat content but still clay. 114-129 cm = B4. Clay lighter colour, sands plant structure distinct 25%. . 129-134 cm = No sample.
4811	293280	340758	0.2	0.18	0.1	0-4 cm = H2 B4. 4-10 cm = H4 B3. Clay-like with some gravels. 10-16 cm = Very stiff small pebbles mineral soil with approx. 30% organic matter, dark in colour. 16-18 cm = As above but slightly more clay.
4812	293884	340713	0.42	0.4	0.23	0-10 cm = No sample. 0-5 cm = H2 B2. 5-13 cm = H3 B2. 13-19 cm = H4 B2 Slightly clay-like. 19-23 cm = H7 B3. Some clay texture. 23-40 cm = B3. Clay mid grey, under 10% plant, sand grain minerals.
4813	293737	340947	0.26	0.16	0.16	0-3 cm = H2 B4. 3-7 cm = H8 B4. Clay-like. 7-16 cm = H8 B4. Slightly crumbly, minimal clay, some free water.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4814	294053	340574	0.6	0.56	0.56	1-5 cm = H3 B2. 5-22 cm = H4 B2. 22-50 cm = No sample. 50-56 cm = H6 B2.
4817	293230	340894	0.4	0.22	0.03	0-3cm = H2 B3 3-9cm = H7 B3. Some clay 9-17cm = H8 B4. Visible clay present 17-22cm = No sample.
9001	293018	341185	0.2	0.2	0.18	0-4 cm = H2 4-11 cm = H5 11-18 cm = H7 18-20 cm= Mineral soil.
9002	293525	341484	0.09	0.08	0.08	0-2 cm= H3. 2-8 cm = H8.
9003	294044	341858	0.23	0.23	0.12	0-2 cm = H3. 2-4 cm = H4. 4-12 cm = H6. 12-23 cm= Mineral soil (silt and sandy).
9004	293147	341858	0.09	0.09	0.08	0-3 cm = H2. 3-8 cm = H7. 8-9 cm = Mineral soil .
9005	293717	340990	0.12	0.12	0.09	0-2 cm = H2. 2-9 cm = H6. 9-12 cm = Mineral soil.
9006	294251	341484	0.15	0.15	0.13	0-4 cm = H3. 4-13 cm = H8. 13-15 cm = Mineral soil containing plant roots.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
9007	294516	342161	0.14	0.11	0.04	0-4 cm = H2. 4-11 cm = Mineral soil (and clay).
9008	293710	340523	0.26	0.26	0.11	0-3 cm = H3. 3-11 cm = H6. 11-26 cm = Mineral soil.
9009	294496	341197	0.21	0.21	0.1	0-4 cm = H3. 4-10 cm = H7. 10-21 cm = Mineral soil (clay with gravel).
9010	294984	341528	1.1	0.12	0.04	0-1.5 cm = H2. 1.5-4 cm = H6. 4-12 cm = Mineral soil.
9011	295071	341093	0.07	0.07	0.07	0-5 cm = H3. 5-7 cm = H4.
9012	293600	340429	0.21	0.21	0.08	0-4 cm = H8. 4-9 cm = H6. 8-21 cm = Mineral soil (clay).
9013	293192	341408	0.12	0.12	0.08	0-8 cm = H8. 8-12 cm = Mineral soil (clay).
9014	294113	342192	0.14	0.14	0.09	0-1.5 cm = H2. 1.5-4 cm = H5. 5-9 cm = H9 (clay like). 9-14 cm = Mineral soil.
9015	291801	340946	0.01		0	No sample taken, exposed bedrock
9016	293327	341230	0.25	0.25	0.25	0-4 cm = H2. 4-24 cm = H8.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
9017	293460	341102	0.2	0.2	0.1	0-2.5 cm = H3. 2.5-10 cm = H9. 10-17 cm = Mineral soil (sandy/clay).
9018	294011	340570	0.19	0.18	0.18	0-2 cm = H3. 2-6 cm = H6. 6-13 cm = H7. 13-18 cm = H9.
9019	291273	340995	0.37	0.21	0	0-21 cm = Clay.
4818	293516	341725	1.1	1	0.8	0-22 cm = No sample, too wet. 22-34 cm = H5 B2. 34-41 cm = H6 B3. 41-46 cm = H4. small grit. 46-50 cm = No sample. 50-80 cm = H8 B3. 80-85 cm = Dark grey clay. 85-90 cm = Light grey clay. 90-100 cm = Partial sample.
4819	293650	341801	1.08	0.87	0.56	0-12 cm = H2 B2. 12-33 cm = H5 B3. Lots of vegetation. 33-42 cm = H6 B4. 42-50 cm = H6 B4, partial sample. 50-56 cm = H8 B4. 56-87 cm = Light grey clay.

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4820	293818	340668	0.85	0.84	0.7	0-30 cm = H2 B2. 30-38 cm = H3 B2, Lighter colour. 38-47 cm = H8, B2. 47-50 cm = H9 B1. 50-65 cm = H8 B3. 65-70 cm = H9 B2. 70-84 cm = Clay with some peat.
4821	293596	341296	1.05	0.87	0.87	0-12 cm = No sample. 12-20 cm = H3 B2. 20-34 cm = H6 with some clay. 34-50 cm = H7 B2. 50-55 cm = H7 B2. 55-66 cm = H8 with grey mineral specs. 66-75 cm = H8 B3. 75-87 cm = H9 B4, very wet.
4822	293586	341287	0.89	1	0.59	0-12 cm = H2 B3. 12-19 cm = H5 B3. 19-33 cm = clay. 33-45 cm = H6 B2. 45-50 cm = H6 B2. 50-59 cm = H7 B2. 59-100 cm = Mid grey clay with some grit towards the bottom.
4823	293670	341399	0.47	0.43	0.33	0-3 cm = H2 B2. 3-8 cm = H6 B3. 8-23 cm = H5 B2. 23-33 cm = H6 B2. 33-43 cm = Brown clay

Peat Core Log ID	X	Y	Peat soil depth (m)	Auger depth (m)	Calibrated peat depth (m)	Notes
4824	293611	341766	0.8	0.8	0.8	No sample, too wet. Likely to be peat, clay would have stuck and come out.
4825	293096	341369	0.52	0.49	0.21	0-7 cm = No sample, too wet. 7-17 cm = H7. 17-21 cm = H7. 21-37 cm = clay. 37-49 cm = No sample but likely to be clay.
4826	294017	340516	0.59	0.61	0.57	0-9 cm = H1 B3. 9-20 cm = H3 B3. 20-28 cm = H5 B2. 28-43 cm = H5 B3. 43-50 cm = No sample as top slipped down. 50-57 cm = H6 B2. 57-61 cm = Clay.
4827	293817	340603	0.32	0.32	0.22	0-4 cm = H1 B3, includes top vegetation. Crumbly texture. 4-16 cm = H5 B2. 16-22 cm = H6 B3. 22-32 cm = Dark clay.

Cores from Fluid-Full Peat Coring Data

			Peat depths and characteristics						Von Post H scores			Von Post B scores				
Ref ID	Easting	Northing	Peat Probe Depth (m)	Depth with Auger (m)	Actual Peat Depth (m)	Actual Peat Thickness (m)	Acrotelm Thickness (m)	Catotelm thickness (m)	Acrotelm m Von Post	Catotelm Von Post 0-1m	Catotelm Von Post 1-2m	Acrotelm Von Post	Catotelm Von Post 0-1m B	Catotelm Von Post 1-2m B	Comments on Core	Comments on Location
PR1_117	294343	341925	0.7	0.8	0.7	0.7	0.1	0.6	H3	H6		B3	B3		Silt at 0.70m	Open moorland, gentle slope
PR1_130	293843	341825	0.8	0.95	0.75	0.75	0.2	0.55	H2	H5		B4	B4		Silty clay at 0.75m	Open moorland, gentle slope
PR1_141	293143	341725	1.6	1.7	1.6	1.6	0.1	1.5	H3	H5	H6	B4	B3	B3	Wood fragments at 1.10m, silty clay at 1.60m	Open moorland, gentle slope
PR1_317	293743	341125	0.6	0.6	0.6	0.6	0.15	0.45	H1	H6		B5	B3		Rock at 0.60m	Open moorland, gentle slope
PR1_327	294743	341125	0.7	0.85	0.55	0.55	0.15	0.4	H2	H4		B4	B4		Top 0.15m too wet to stay in corer, clay at 0.55m	Open moorland, gentle slope
PR1_428	292843	340825	0.75	0.75	0.75	0.75	0.2	0.55	H1	H5		B4	B3		Top 0.10m too wet to stay in corer, rock at 0.75m	Open moorland, moderate slope

			Peat depths and characteristics						Von Post H scores			Von Post B scores				
Ref ID	Easting	Northing	Peat Probe Depth (m)	Depth with Auger (m)	Actual Peat Depth (m)	Actual Peat Thickness (m)	Acrotelm Thickness (m)	Catotelm thickness (m)	Acrotelm m Von Post	Catotelm Von Post 0-1m	Catotelm Von Post 1-2m	Acrotelm Von Post	Catotelm Von Post 0-1m B	Catotelm Von Post 1-2m B	Comments on Core	Comments on Location
PR1_448	293143	340725	0.8	0	0										Silty clay turning into clayey silt at 0.60m	Farmland, gentle slope
PR1_629	292643	339925	0.65	0.65	0.65	0.65	0.2	0.45	H1	H6		B5	B4		Top 0.10m too wet to stay in corer, rock at 0.65m	Open moorland, gentle slope
PR1_636	293343	339925	0.7	0.95	0.65	0.65	0.25	0.4	H1	H6		B5	B4		Top 0.15m too wet to stay in corer, silty clay at 0.65m	Open moorland, gentle slope
PR1_681	294043	339725	0.8	0.9	0.8	0.8	0.1	0.5	H3	H7		B4	B4		Top 0.10m too wet to stay in corer, silty clay at 0.60m	Open moorland, moderate slope

ANNEX 2: AUTHOR EXPERIENCE

7.1.8 This report was produced by Dr Giles Exley, under the supervision of Dr Catherine Isherwood.

7.1.9 Field surveys were undertaken by Giles Exley, Chris Palmer, Douglas Morrison and Vanja Krage. All are members of professional institutions and are working towards chartership. All have significant experience of peat surveying and classification from wind farm developments, peatland restoration surveys, overhead line route studies and ground investigation works, and other infrastructure projects including substation development and major road alignments.

7.1.10 Catherine Isherwood is a Chartered Geologist with an MA and PhD in Geological Sciences from the University of Cambridge and an MSc in Hydrogeology from Newcastle University. She has 20 years' experience in environmental impact assessment and the assessment of peat soil and slope stability.

7.1.11 The report has been reviewed and authorised by Catherine Isherwood.

7.1.12 The assessment method was developed with input from a Chartered Engineer and a Chartered Environmentalist with a combined experience of more than 35 years.