

Peat Stability Risk Assessment (PSRA) for Derryadd Wind Farm

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REVISION SUMMARY

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EXECUTIVE SUMMARY

Gavin and Doherty Geosolutions (GDG) was commissioned by Tobin to undertake a Peat Stability Risk Assessment (PSRA) for the proposed Derryadd Wind Farm (the "Proposed Development"). In accordance with the planning guidelines complied by the Department of the Environment, Heritage and Local Government (DoEHLG, 2019), where peat is present on a proposed wind farm development, a peat stability assessment is required.

The findings of the peat assessment showed that the site has an acceptable margin of safety and is suitable for the proposed wind farm development.

Consultation with published GSI maps and the observations from site investigations indicate that a large proportion of the site consists of cut-over Raised Peat. Peat is mapped across the site, aside from several areas of Glacial Till adjacent to the site. There are also some bodies of Till derived from limestones (TLs) mapped within the proposed wind farm site, forming small, tear-shaped islands within the peat. These pockets of Glacial Till are mapped underlying the proposed T01, T02, and T03 locations. These are pockets of Till located to the south of T04, north of T11, to the west of T16 and T17, and directly south of T20. Peat thickness encountered by intrusive investigations across the site varies from 0m to a maximum thickness of 6.2m, with an average of 1.38m recorded. In total, 47% of recorded peat thicknesses were under 1m, and 77% were under 2m. Peat depths over 2m were encountered within the southern part of the site, concentrated around the vicinity of T19, T20 and T22. The deepest areas of peat (depth 6.2m) were recorded in isolated locations at the east of T01 and T02 at a location where no infrastructure is proposed and at discrete locations east of the proposed internal floated access road between T8 and T14.

A desk study, site walkovers, ground investigation campaigns, stability analyses and a risk assessment were carried out to assess the risks posed by peat failures within the proposed wind farm site. The risks were assessed following the principles in Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, 2017).

The stability analysis aims to determine the stability, i.e., the Factor of Safety (FoS) of the peat slopes. The FoS provides a direct measure of the degree of stability of a peat slope. A FoS of less than 1.0 indicates that a slope is unstable; an acceptable FoS for slopes is 1.3 or greater. The results of the factor of safety analysis, indicate that the site is stable and safe for the construction and operation of the proposed development. The FoS analysis highlighted the localised areas of a low factor of safety along the steep faces of the existing drainage and historic peat extraction faces at the site. These linear features are not considered to be a landslide or bog burst risk but are indicative of potential localised instability risks which can be easily managed during construction. Management and reinstatement of these localised instability risks is outlined in the associated Peat and Spoil Management Plan (PMP) in Appendix 9.2 of the Soil Chapter.

A risk assessment was carried out considering the FoS value calculated in the stability analysis and other factors that could influence peat stability, considering how damaging a peat slide would be to this particular site's environment. The results of the stability risk assessment suggest that the Proposed Development has a negligible to low stability risk.

The site was found to have both acceptable factors of safety and levels of risk against peat instability. No immediate peat hazard has been identified during the desk study, the site reconnaissance and stability factor analysis. For this reason, no peat stability construction buffer zones are highlighted within or adjacent to any of the proposed wind farm site.





It is suggested that any peat deposition adjacent to the existing site drainage must maintain a minimum offset of 1m from the edge of the drain.





1 INTRODUCTION

Gavin and Doherty Geosolutions (GDG) was commissioned by Tobin Consulting Engineers to undertake a Peat Stability Risk Assessment (PSRA) for the Derryadd Wind Farm site.

GDG has been involved in many wind farm developments in both Ireland and the UK at various stages of development, i.e. preliminary feasibility, planning, peat stability assessment, design and construction. In addition to this, the GDG team, comprised of engineering geologists, geomorphologists, geotechnical engineers and environmental scientists, has developed expertise in landslide hazard mapping. GDG's experience includes leading a recent national landslide hazard mapping pilot study which included extensive landslide runout and hazard mapping and calculation in Irish blanket peat.

1.1 STATEMENT OF AUTHORITY

This document was prepared by Gavin & Doherty Geosolutions (GDG). GDG is a specialist engineering consultancy with a foundation in geoscience, environmental services and geotechnical engineering.

The members of the GDG team involved in this assessment include:

- Paul Quigley (Project Director). Paul is a Chartered Engineer with 28 years of experience in geotechnical engineering and UK Registered Ground Engineering (RoGEP) Adviser. He has worked on a wide variety of projects for employers, contractors and third parties gaining a range of experience including earthworks for major infrastructure schemes in Ireland and overseas, roads, tunnelling projects, flood protection schemes, retaining wall and basement projects, ground investigations and forensic reviews of failures. Paul has published numerous peer-reviewed technical papers and has acted as an independent expert for a number of legal disputes centred on ground-related issues. He is a reviewer for the ICE Geotechnical Engineering Journal, a member of the Eurocode 7 review panel at NSAI and a former Chairman of the Geotechnical Society of Ireland.
- John O'Donovan leads the onshore renewable sector at GDG. He completed his PhD at Imperial College investigating the use of DEM to model wave propagation techniques to measure smallstrain soil stiffness. Following completion of the PhD John spent 2.5 years working with Buro Happold's Ground Engineering Group. He has over 12 years of experience in engineering and nine years in his current role. At GDG John manages onshore wind farm projects and solar farm projects. John specialises in dealing with difficult ground conditions and providing robust designs for projects in peatland areas. John also works on the landfall and onshore aspects of offshore windfarms including cable routing and onshore substation foundation design.
- Stephen Curtis is a senior engineering geologist on the onshore renewable team. He has over seven years of experience in both site investigation contracting and geotechnical consultancy environments. He is Chartered with the Institute of Geologists of Ireland (IGI) and the European Association of Geographers. Stephen has worked on multiple renewable energy projects; primarily solar and wind farm projects in Ireland and the UK for over four years. He has been involved in the feasibility study, planning, design and construction stages of wind and solar farm developments, with a particular focus on geotechnical risk management, and mitigation for construction in upland peat areas and Irish glacial ground conditions.
- Tomás McGrath. Tomás is a Chartered Engineer with 9 years' post graduate experience in civil and geotechnical engineering. He joined the Infrastructure team of Gavin and Doherty





Geosolutions Ltd. in 2018. His role since joining the team has included geotechnical interpretation, geotechnical design, structural design, design review, project management of multidisciplinary teams, and bid management. Tomás has led the design team or contributed to the detailed design of several onshore wind and solar farm developments across Ireland and the UK. His area of expertise includes turbine foundation design and site inspection, pile design for wind turbine foundations, stability analysis in soft ground, access track design, hardstand design for site compounds, substations, crane lifts and laydown areas, and other temporary works for grid infrastructure in peat.

- Chris Engleman is a Professional Geologist (PGeo, EuroGeol) with an MGeol from the University
 of Leeds. He is Chartered with the Institute of Geologists Ireland (IGI), and the European
 Federation of Geologists. Chris has five years of industry experience within the onshore
 renewables sector and the field of geological mapping; predominantly working on projects for
 peat stability and management (including PSRAs), ground investigation, rock and soil logging, GIS
 mapping and geotechnical design. He has experience in peat stability analysis,
 geological/geomorphological mapping (with a particular focus on Quaternary geology), site
 investigation, project management and GIS mapping. He has worked on several EIAR projects in
 both Ireland and Scotland, including Peat Stability Risk Assessments, Peat and Spoil
 Management Plans, and Soils and Geology Chapters.
- Johan van Niekerk is a design engineer working in the GDG Onshore Renewables team. He has over five years of experience in consultancy and has worked on a variety of projects in the energy and mining industry, mostly focused on the geotechnical design of infrastructure.
- Kelly Griffin. Kelly is a graduate civil engineer within the onshore renewables team in GDG with
 over two years of industry experience. Kelly has completed structural and geotechnical design
 work on various projects including temporary works design, retaining wall design, shallow
 foundation design and earthworks in Ireland and the UK. Kelly authored the initial revision of the
 report.

1.2 PROPOSED DEVELOPMENT

The proposed Derryadd Wind Farm is located in south County Longford, located primarily on three bogs within the Mountdillon Group of peat production bogs, namely Derryaroge, Derryadd and Lough Bannow cutaway bogs and a very small proportion of a fourth cutaway bog, Derryshannoge. The proposed development site has a total area of approximately 1900 hectares and is located in an area surrounded by the towns and villages of Lanesborough, Derraghan, Keenagh, and Killashee.

A detailed map of the proposed site's administrative locations is provided in Figure A-1 In Appendix A.

The proposed development infrastructure will comprise the following:

- 22 no. wind turbines with a blade tip height of 190 m, blade rotor diameter of 165 m, hub height of 107.5 m and the associated infrastructure including tower sections, nacelle, hub, and rotor blades and all associated foundations and hard-standing areas in respect of each turbine;
- New internal site access roads, approximately 27,500 m in length including passing bays and associated drainage;
- 2 no. permanent Meteorological Masts, both of which will be 120 m in height, and associated hardstanding areas for both masts, as well as the decommissioning and removal of an existing 100 m Meteorological Mast on-site in Lough Barrow Bog;





- 4 no. Borrow pits in Derryadd Bog; All works associated with the opening, gravel and spoil extraction and decommissioning of the borrow pits;
- 4 no. temporary construction compounds, including material storage, site welfare facilities, and site offices;
- 4 no. temporary security cabins at the main construction site entrances as well as at a number of access points around the proposed wind farm site;
- 1 no. 110 kV electrical substation compound in Derryaroge Bog. The substation will consist of 2 no. control buildings, a 36 m high telecommunications tower, associated electrical plant and equipment, groundwater well, wastewater holding tank and welfare facilities.
- All associated underground electrical and communications cabling connecting the turbines and masts to the proposed electrical substation, including road crossing at N63 and associated grid connection via a 110 kV loop-in connection to the existing Lanesborough-Richmond 110 kV overhead line which traverses the proposed wind farm site;
- 1 no. 16 MW battery storage facility;
- 2 no. Peat Deposition Areas, one to the north of the proposed substation compound in Derryaroge Bog and one in Derryadd Bog;
- New site access entrances, temporary improvements and modifications to existing public road infrastructure to facilitate delivery of abnormal loads including locations on N6 Eastbound Slip Road, N6/N61 Roundabout at Athlone, N61/N63 Roundabout at Roscommon, N63 Roscommon Arts Centre Roundabout and N61/N63 Roundabout, Northeast of Roscommon.
- Hinge 3 No. Permanent lighting fixtures in Folio RN40465F in Roscommon town to facilitate the delivery of abnormal loads (i.e. turbine blades);
- Approximately 7,500 m of dedicated amenity access tracks to provide linkages between the proposed wind farm site roads, Royal Canal Greenway (to the east), the Corlea Visitor Centre amenity areas (to the south) and the Midlands Trail Networks project (to the north).;
- 3 no. Permanent amenity carparks, one of which is situated in Derryaroge Bog (19 no. car parking spaces in total) and two carparks in Derryadd Bog (19 no. car parking spaces in each carpark);
- All associated site work and ancillary works including new drainage and updating existing drainage, access road, earthworks, site reinstatement and erosion control, which will be aligned with the existing and future site rehabilitation plans; and,
- A 10-year planning permission is being sought with a 30-year operational life from the date of commissioning of the entire wind farm.

This report examines the conditions at the proposed wind farm site as defined in Chapter 3 of the EIAR.

1.3 OVERVIEW OF PEAT LANDSLIDES

1.3.1 PEAT LANDSLIDE TYPES

The literature typically refers to two general groups of peat landslides: peat slides and bog bursts. Some descriptions of each type are provided in Table 1-1.



Table 1-1: Peat landslide types.

Characteristics	Peat slide	Bog burst	
		Particularly fluid failures without	
		necessarily a clear scar margin.	
Outstanding characteristic	Shallow translational failuros	The liquefied basal material is	
		expelled through surface tears	
		followed by settlement of the	
		overlying mass.	
	Shear failure along discrete shear		
Mechanism	surfaces, typically at the peat-	Subsurface creep, swelling	
	substrate interface		
Peat depth	≤ 2 m	≥ 1.5 m	
Slono anglo	E = 15° (moderate)	2 – 10° (gentle), where deeper	
Siope aligie	5 – 15 (moderate)	peat is more likely	
Spatial distribution	Scotland, England and Wales	Ireland	

A review of the landslide information on the GSI Irish Landslides Database indicated that the nearest recorded landslides occurred approximately 9 km north-east of the development area (ID GSI_LS16-0043 and 044), as shown in Figure F-1 In Appendix F. Both events are described as peat slides and happened in February 2016. They are characterised by an area of raised peat that has undergone some slippage. In their description of the features, the GSI (2025) note that the peatslide appears to be relatively large and other possible slippages have occurred on the same raised bog previously. No available information could be found indicating the cause or trigger for these peat slide events.

Two additional landslides are also shown in Figure F-1 ca. 13 km away from the proposed wind farm site, GSI_LS03-0007 and GSI_LS-0033. These occurred in January 1818 and January 1809 respectively and very little information about these events is given.

Although there is no evidence of landslides within the proposed wind farm site, this does not necessarily mean that landslides have never occurred at the proposed site location. It is noted that the geomorphological features associated with peat landslides (peat slides and bog bursts) are softened with time through erosion, drying and re-vegetation (Feldmeyer-Christe & Küchler, 2002; Mills, 2003). Additionally, the peat extraction activities across the proposed site obscure the identification of possible historical landslides.

1.3.2 CONTROLS OF PEAT INSTABILITY

The spatial and temporal occurrence of landslides, including peat landslides, is controlled by *conditioning* and *triggering factors*.

The conditioning factors explain the spatial distribution of landslides and are related to the inherent properties of the terrain, such as soil type, slope angle, curvature (convex/concave) of the slopes and drainage.

The triggering factors explain the frequency of landslides. They can be distinguished between fast and slow triggers:

- Fast triggers:
 - Intense rainfall (the most frequent trigger);
 - Snowmelt (very frequent trigger; Warburton, 2022);





- Rapid ground accelerations (e.g. from blasting rock);
- Undercutting of peat by natural processes (e.g. fluvial) or man-made; or
- Loading the peat.
- Slow triggers:
 - Low intensity but constant rainfall;
 - \circ Afforestation / Deforestation (wildfires, pollution-induced vegetation change); or
 - Weathering (physical, chemical, biological).

Slow triggers can start landslides by themselves and can also act as *preparatory factors* for fast triggers by lowering their threshold to start landslides.

1.3.3 PRE-FAILURE INDICATORS

The presence of conditioning factors and low-pace triggers before failure is often indicated by ground conditions, features and morphologies that can be identified remotely or during the fieldwork by the geomorphologist or through basic monitoring techniques.

According to the guidelines provided by the Scottish Government (2017), the following critical features are indicative of the susceptibility or proneness to failure in peat environments:

- Presence of historical and recent failure scars and debris;
- Presence of features indicative of tension (e.g. cracks);
- Presence of features indicative of compression (e.g. ridges, thrusts, extrusion features);
- Evidence of peat creep (typically associated with tension and compression features);
- Presence of subsurface drainage networks or water bodies;
- Presence of seeps and springs;
- Presence of artificial drains or cuts down to substrate;
- Presence of drying and cracking features;
- The concentration of surface drainage networks;
- Presence of soft clay with organic staining at the peat and (weathered) bedrock interface; and
- Presence of iron pans or similar hardened layers in the upper part of the mineral substrate.

Other evidence of peat instability unrelated to landslides has been considered, namely quaking peat in horizontal areas with very low bearing capacity.

1.3.4 PEAT STABILITY ASSESSMENT WORKFLOW

GDG has carried out the PSRA for the proposed wind farm site following the principles set out in the *Proposed electricity generation developments: peat landslide hazard best practice guide* (Scottish Government, 2017). This guide has been used in this report as it provides best practice methods to identify, mitigate and manage peat slide hazards and associated risks concerning consent applications for electricity generation projects.





Figure 1-1**Error! Reference source not found.** Shows a workflow diagram showing the general methodology for the PSRA. The methodology can be summarised into the following steps:

- 1) Completion of the desk study.
- 2) Undertake in situ reconnaissance of the proposed site including:
 - Carry out geo-investigations especially concentrated at the proposed infrastructure areas, including peat probing, hand shear vane testing and trial pitting;
 - Record geological and geomorphological features, including exposures of the soil profile and evidence of peat instability; and
 - Record hydrologic and vegetation features.
- 3) Risk assessment, including:
 - Interpolation of the peat probe values and generation of the peat depth map;
 - Creation of the Factor of Safety (FoS) maps using a deterministic approach (Bromhead, 1986) for drained and undrained conditions;
 - Qualitative hazard assessment by combining the FoS with observations of the peat condition identified both on aerial imagery and during fieldwork.
 - Qualitative consequences assessment;
 - Calculation of the peat landslide risk by multiplying hazards and consequences;
 - Reclassification of the risk values into four classes:
 - Negligible;
 - Low;
 - Medium; and
 - Serious.
- 4) Review the proposal of actions required for each infrastructure element.







Figure 1-1: Workflow of the PSRA methodology for the acceptability of the proposed site layout.

2 DESK STUDY

For a preliminary site suitability analysis and background knowledge of local peat stability and ground conditions, the following areas have been considered:

- 1) Geology and Quaternary sediments (subsoils);
- 2) Soils;
- 3) Hydrogeology;
- 4) Multi-temporal aerial / Satellite imagery;
- 5) Topography;
- 6) Landslide inventories and landslide susceptibility;
- 7) Hydrology;
- 8) Land cover and land use;
- 9) Relevant academic literature and publications.

2.1 BEDROCK GEOLOGY

The bedrock geology on the 1:100,000 scale mapping from the GSI indicates the regional geological setting of the proposed wind farm site and the surrounding environment. The regional setting of the proposed wind farm is characterised by 13 geological formations within 6 km of the proposed wind farm site boundary.





At Derryaroge and Derryadd the underlying bedrock is predominantly Visean Limestone (Undifferentiated). The bedrock geology at the Proposed Development is outlined in Figure B-1 to Figure B-3 in Appendix B.

The southern portion of the proposed wind farm at the Lough Bannow Bog is characterised by eight formations. The formations in this area are:

- Visean Limestone (Undifferentiated);
- Argillaceous Limestones;
- Ballysteen Formation;
- Meath Formation;
- Moathill Formation;
- Rinn Point Limestone Formation;
- Waulsortian Limestones; and
- Lucan Formation.

The regional bedrock geological formations are described in Table 2-1.

Table 2-1: Regional bedrock geology descriptions

Formation	Abbreviation	Description
Meath Formation	ME	Limestone, calcareous sandstone
Moathill formation	MH	Limestone, calcareous sandstone, shale
Rinn Point Limestone Formation	RP	Basal clastics
Ballysteen Formation	BA	Dark muddy limestone, shale
Fearnaght Formation	FT	Pale conglomerate and red sandstone
Lucan Formation	LU	Dark limestone and shale, calp
Argillaceous Limestones	AL	Dark limestone and shale, chert
Visean Limestone (undifferentiated)	VIS	Undifferentiated limestone
Waulsortian Limestones	WA	Massive unbedded lime-mudstone

The underlying bedrock for each proposed turbine location and key infrastructure elements is presented in Table 2-2. This table shows four types of bedrock formation underlying the proposed turbine locations and proposed infrastructure. Faults are shown on the geological mapping in Appendix B, running through Lough Bannow close to turbines T16, T17, T21 and T22. No bedrock outcrops are indicated within the proposed wind farm site extent in the geological mapping.

 Table 2-2: Underlying bedrock formation of each proposed turbine and infrastructure location.





Infrastructure Location	Bedrock Formation	Bedrock lithology
T1 to T15	Visean Limestones (Undifferentiated)	Undifferentiated Limestone
T16 and T18 to T21 and met mast	Moathill Formation	Limestone, calcareous, sandstone and shale
T17	Argillaceous Limestones (Visean)	Dark limestone, shale and chert
T22	Ballysteen Formation	Dark muddy limestone and shale
Borrow Pit Location BP01 to BP04	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Substation (including grid connection)	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Battery Storage Area	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Construction Compound No. 1	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Construction Compound No. 2	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Construction Compound No. 3	Argillaceous Limestones (Visean)	Dark limestone, shale and chert
Construction Compound No. 4	Ballysteen Formation	Dark muddy limestone and shale
Amenity Car Park	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Security hut no.1 and no.2	Visean Limestone (Undifferentiated)	Undifferentiated Limestone
Security hut no.3	Argillaceous Limestones (Visean)	Dark limestone, shale and chert
Security hut no.4	Ballysteen Formation	Dark muddy limestone and shale

The GSI database contains records of historical ground investigations carried out within and nearby to the development area. The locations of these historic ground investigations are within the proposed wind farm boundary (within Lough Bannow Bog) and within 1 km of the proposed wind farm site boundary. Logs of all but two of the boreholes are available from the database which indicate that the boreholes were drilled for mining exploration purposes. Limestone, sandstone, dolomite, wackestone, siltstone and claystone were recorded in these boreholes. These lithological descriptions are generally in agreement with those provided by the GSI as shown in Table 2-1. The





depths to bedrock identified during these ground investigations range between 3.0mbgl and 18.0mbgl.

Ground investigations specific to the proposed development are outlined in Section. 3.2, and described in detail in Chapter 9 (Lands, Soils and Geology) of the EIAR. These specific ground investigations broadly support the GSI mapping.

2.2 QUATERNARY SEDIMENTS

The GSI Quaternary Sediments Map (1:50k) at the local scale is shown in Figure B-4 to Figure B-6 in Appendix B. Peat is encountered across the proposed wind farm site, mapped throughout by the GSI as cut-over raised peat. There are also some bodies of Till derived from limestones (TLs) mapped within the proposed wind farm site, forming small, tear-shaped islands within the peat. These pockets of Glacial Till are mapped underlying the proposed T01, T02, and T03 locations. These are pockets of Till located to the south of T04, north of T11, to the west of T16 and T17, and directly south of T20. The bodies of Till are related to drumlins mapped by the (illustrated on Figure B-4 to Figure B-6 as "subglacial lineation landforms". Glacial Till typically comprises a heterogeneous mix of sand, gravel, cobbles, and boulders, usually held in an over-consolidated clay matrix. A number of small areas mapped as bedrock at or near the surface can be seen in the far south of the proposed wind farm site, indicating the potential presence of bedrock within 1 m of the surface in these locations. The results of the ground investigations carried out as part of the proposed wind farm, and of historic ground investigations carried out in the surrounding areas are discussed in Section. 3.2, but broadly show agreement with the GSI mapping.

2.3 SOILS

The EPA/Teagasc (National Soils Map, 2018) databases indicate that the proposed wind farm is generally underlain by cutover-raised peat. The peat, which is shown to underly all of the bogs within the proposed wind farm site, is Holocene in age. It was formed as an extensive deposit across the landscape in the area since deglaciation approximately 7,000 – 10,000 years ago. The bogs were used for peat extraction by Bord na Móna. There is an area of made ground within the proposed wind farm site at the Mountdillon Works. There are two areas of Basic Poorly Drained Mineral Soils with Peaty Topsoil noted within the proposed wind farm site extents: north of Turbine T03 and south of Turbine T20. Figure C-1 to Figure C-3 Appendix C presents the national soils map at the local scale.

2.4 MULTI-TEMPORAL AERIAL/SATELLITE IMAGERY

The aerial/satellite imagery used for this report is the Ordnance Survey Ireland (OSI) aerial imagery (1995-2013), Google Earth multi-temporal imagery (2009 onwards), and Bing Aerial Imagery (shown in Table D-1 in Appendix D). This imagery has been used in conjunction with the historic OSI historic 6-inch and 25-inch mapping (Table D-1) to:

- Identify any evidence of peat failures;
- Identify pre-conditioning factors for failure (where visible at the resolution of the imagery);
- Observe, where possible, vegetation cover, drainage regime and dominant drainage pathways; and
- Identify evidence for land management practices with the potential to influence ground conditions (e.g. burning, artificial drainage, peat cutting and forestry).





It is noted that the time-lapse of the available imagery is too short to identify old peat instability evidence that may have been eroded or re-vegetated with time or changes in land management.

2.5 TOPOGRAPHY

The topography of the proposed wind farm site is relatively flat with elevations generally ranging from 34mAOD to 59mAOD. The proposed wind farm site covers three different bogs, from north to south: Derryaroge, Derryadd, and Lough Bannow. Each bog consists largely of flat, cut-over /cutaway bog, with low ridges trending NNW-SSE forming the local topographic highs. Localised, man-made changes in topography in the form of areas of shallow excavation are also present due to the historic peat extraction. Small 'islands' encompassing low NNW-SSE trending ridges within the Derryadd and Lough Bannow Bog extents are excluded from the proposed wind farm site. The topography of the proposed wind farm site is illustrated in Figure E-1 to Figure E-3 in Appendix E.

The Derryaroge bog is largely flat-lying, ranging from topographic lows of 34mOD in drains at the north of the bog, to highs of 46m OD, in a small NNW-SSE trending low ridge in the centre of the bog. The Derryadd bog is largely flat-lying cutaway bog, with low points of 39m OD in drains in the north of the bog, and topographic highs of 50m OD at the edge of the low ridges which are outside of the proposed wind farm site. The Lough Bannow bog also consists largely of flat, cut-over /cutaway bog, with topographic lows of 43m OD in the NW corner of the bog, and topographic highs of 59m OD in the SE corner, close to the proposed wind farm boundary.

Assessment of the topographic DEM dataset issued by Tobin outlines the slopes at the ground profile slopes at the proposed wind farm site predominantly range between 0° and 5°. Areas within the proposed wind farm site with slopes over 5° are manmade slopes mostly related to existing peat cuttings from industrial harvesting and drainage excavations.

The topographic information within the northern area of the site in the land adjacent to T6 and T7 is limited as the LiDAR survey collected is limited by the presence of surface water. The area was observed from a distance during the site visit and the GDG engineers have noted that there are no evident rises or falls in the topographic elevations. The area appears to be a flat, peat bog or wetland area with some extensive low vegetation.

2.6 LANDSLIDE MAPPING

A review of the landslide information on the GSI Irish Landslides Database (GSI, 2025) indicates that the nearest recorded landslides occurred approximately 9 km north-east of the proposed wind farm site (ID GSI_LS160043 and 044), as shown in Figure F-1 in Appendix F. Both events are described as peat slides and happened in February 2016. They are characterised by an area of raised peat that has undergone some slippage. In their description of the features, the GSI (2025) notes that the peat slide appears to be relatively large and other possible slippages have occurred on the same raised bog previously.

Two additional landslides are also shown ca. 13 km away from the proposed wind farm site. Figure F-1, GSI_LS030007 and GSI_LS-0033. These occurred in January 1818 and January 1809 respectively and very little information about these events is given.

The proposed wind farm site is in a region of low rainfall and relatively flat topography, and there is no record of past landslide events from the national landslide database nor the desk study and fieldwork within the proposed wind farm site boundary.

Figure F-1 shows the Regional Landslide Susceptibility while Figure F-2 to Figure F-4 Show the Local Landslide Susceptibility. This map was obtained by using an empiric probabilistic method at a regional scale and did provide input into site-specific scale engineering studies. The proposed wind





farm site is designated as 'Low' susceptibility, with a very localised band designated as 'Moderately Low' running along the southeastern proposed wind farm site boundary.

2.7 HYDROGEOLOGY

2.7.1 BEDROCK AQUIFERS

The bedrock aquifer types mapped by the GSI (2025) within the proposed wind farm site boundary and surrounding area are shown in Figure G-1 in Appendix G. According to GSI's groundwater map viewer, the proposed wind farm site is underlain by two different aquifer bodies. The majority of the proposed wind farm site (Derryaroge and Derryadd Bogs) is underlain by a Regionally Important karstified (Conduit) Aquifer (Rkc). The southern end of the proposed wind farm site at Turbines T17 to T22 (Lough Bannow Bog) is underlain by a Locally Important (LI) aquifer, defined as being a moderately productive bedrock aquifer in local zones.

Regionally important aquifers are generally capable of supplying regionally important abstractions (e.g. large public water supplies), or excellent yields (>400 m³/d). Bedrock aquifer units generally have a continuous area of >25 km² and groundwater predominantly flows through fractures, fissures, joints or conduits. Locally important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or good yields (100-400 m³/d). In the bedrock aquifers, groundwater predominantly flows through fractures, fissures, joints or conduits. Bedrock is anticipated to consist of a limited and relatively poorly connected network of fractures, fissures and joints, giving a low fissure permeability which tends to decrease with depth (GSI, 2025).

2.7.2 GROUNDWATER VULNERABILITY

Groundwater vulnerability in Ireland, as defined in the EC Water Framework Directive – Recharge and Groundwater Vulnerability, is a function of the thickness and permeability of the subsoil that overlies bedrock. These factors strongly influence the attenuation processes and the time it takes for contamination to be released into the subsurface. The GSI Groundwater Vulnerability map containing groundwater vulnerability classifications for the proposed wind farm site (GSI, 2025) at the regional view is shown in Figure G-2 in Appendix G

The majority of the proposed wind farm site exhibits 'Low' degrees of groundwater vulnerability with some localised isolated areas of 'Moderate' groundwater. Vulnerability transitions from 'Moderate' to 'High' and at some locations to 'Extreme' and 'Rock at or near Surface or Karst' in areas to the south of the proposed wind farm site. The areas of 'Extreme' vulnerability and 'Rock at or near Surface or Karst' are southwest of T16 and T17 and correspond to areas mapped as Bedrock Outcrop/Subcrop (Rck) in the GSI Quaternary Sediments map (Section. 2.2). Areas of 'Moderate' vulnerability mapped just outside of the proposed wind farm site conform to the outlines of possible drumlins and reflect the wider regional trend of localised bulbous-shaped areas of elevated groundwater vulnerability due to drumlin geomorphologies of higher permeability soils.

Due to the localised variability within the proposed wind farm site, pre-development vulnerability observed at individual wind turbines and other infrastructure such as borrow pits, site compounds and peat storage areas will vary depending on location.

2.7.3 SUBSOIL PERMEABILITY

The subsoil permeability affects how easily rainwater can soak down into the ground and fill up the groundwater resource (aquifer). An aquifer is a body of rock and/or sediment that holds groundwater. The GSI Subsoil Permeability Map (2025) for the proposed wind farm site at the regional view is shown in Figure G-3.





The Subsoil Permeability map shows how permeable the subsoils are in Ireland. The map shows the subsoil permeability category at any point on the land surface as long as the subsoil is greater than 3 metres thick. There are three categories: 'High', 'Moderate' or 'Low'. The majority of the proposed wind farm site is underlain by 'Low' subsoil permeability. Localised areas adjacent to the southern boundary and southeast are currently 'Not Mapped' due to assumed low depth to bedrock and sections of bedrock outcropping.

There are no sand and gravel aquifers within the proposed wind farm site boundary or in the vicinity, although it is possible that localised perched groundwater is present within granular layers and lenses within the Glacial Till and alluvial soils.

2.8 HYDROLOGY

According to the Ordnance Survey Ireland (OSI) shapefile of rivers, lakes and catchments/basins (Figure H-1 in Appendix H), the proposed wind farm site is located within the upper Shannon subcatchment.

Derryaroge Bog is approximately 1.20km south of the River Shannon which runs in a northwest direction to the proposed wind farm site. Lough Bannow Bog is approximately 0.5 km to the west of the Royal Canal which runs in a northwest to east direction.

2.9 LAND COVER AND LAND USE

Land cover mapping by Corine (2018, Figure I-1 in Appendix I) indicates that almost the entirety of the proposed wind farm site is covered by peat bog, with small patches of transitional woodland scrub mapped directly to the east and south of T08, and to the west and southwest of T17. Much of the land directly adjacent to the proposed wind farm boundary is recorded as pastureland, with small patches of coniferous and broad-leaved forest mapped close to the southern boundary. Overall, the proposed wind farm site varies greatly from areas that are re-vegetating rapidly since they came out of industrial peat extraction to bare peat areas that were still subject to peat extraction until the cessation of the practice in Derryadd in 2019. The majority of the site is now developing pioneer cutaway habitats. Some parts of the site have recently developed pioneer wetlands communities including Reed beds. The drier sections of the site have developed areas of Birch-dominated scrub (Refer to Chapter 7 (Biodiversity – Flora and Fauna) for more detail).

3 SITE RECONNAISSANCE AND GROUND INVESTIGATION

3.1 SITE RECONNAISSANCE

GDG conducted three separate site reconnaissance visits as part of this assessment:

- Visits for the previous turbine layouts in October 2016 and January 2017 to record geomorphological features concerning the proposed wind farm development, peat depths (peat probing) and peat strength (hand shear vanes),
- A further visit to the current Proposed Development layout in November 2023. This visit consisted of visits to all turbine locations, geomorphological mapping and peat probing. Access was not available to Turbines 5, 6 and 7 due to ponded surface water.

An indication of the existing site terrain with a flat topography is shown in Figure 3-1, Figure 3-2, and Figure 3-3. No evidence of any previous landslides or peat instability was identified during the walkover.







Figure 3-1: General site terrain and conditions in the northern area of the site



Figure 3-2: General site terrain and conditions at the middle area of the site (exposed peat surface with ponded water).







Figure 3-3: General site terrain and conditions at the middle area of the site (localised ponding of surface water).

3.2 GROUND INVESTIGATION

Site surveys relating to the soil and geological environment and ground investigations were undertaken in several phases between October 2016 to February 2023. These included:

- GDG 28th of October 2016 to 11th of January 2017. Site walkover to review the ground conditions and assess the topography, geomorphology and requirements for further investigations and 25 no. Trial Pits are presented in Appendix 9.1.1 of the EIAR;
- Tobin April 2017 8 no. Trial Pits at potential substation locations, presented in Appendix 9.1.2 of the EIAR;
- Tobin December 2017- 35 no. Trial pits at proposed borrow pits, presented in Appendix 9.1.3 of the EIAR;
- Tobin March-April 2018- 49 no. Trial pits at proposed turbine locations, along access tracks and at potential borrow pits presented in Appendix 9.1.4 of the EIAR;
- Hand shear vane tests on the material encountered in the trial pits, March 2017 April 2018 presented in Appendix 9.1.3 and Appendix 9.1.4 of the EIAR;
- Irish Drilling Ltd. June 2017- 5no. Rotary core drillings to assess interconnectivity of the proposed development site with nearby turloughs; (this information informed the subsequent and separate borrow pit assessment) presented in Appendix 9.1.5 of the EIAR;
- Irish Drilling Ltd. April 2017 70no. Peat probes at proposed turbine locations, along access tracks and at potential borrow pits presented in Appendix 9.1.6 of the EIAR;
- Tobin March 2018- 131 no. Peat probes at proposed turbine locations, along access tracks presented in Appendix 9.1.7 of the EIAR;
- Lab testing from 2017 GDG trial pits, presented in Appendix 9.1.8 of the EIAR.





- Irish Drilling Ltd.- February-May 2021, presented in Appendix 9.1.9 of the EIAR. An extensive ground investigation campaign was carried out across the site. These ground investigation locations related to the previously approved proposed development layout as described in Section 2.3 of Chapter 2 (Background to the Proposed Development) of the EIAR. The ground investigation campaign was composed of the following:
 - 94 no. Cable percussion boreholes,
 - 90 no. Rotary boreholes for recovery of overburden and bedrock cores,
 - 336 no. Trial pits,
 - 343 no. Dynamic probes,
 - Geophysical investigation carried out by Minerex Ltd. composed of the following:
 - Electronic Resistivity Tomography (ERT),
 - Seismic refraction,
 - Multi-channel Analysis of Surface Waves (MASW),
 - Wenner Array.
 - A range of in-situ tests were carried out including Standard Penetration Testing (SPT) and variable head testing,
 - Geotechnical and geochemical laboratory testing.
- Irish Drilling Ltd. January-February 2023, presented in Appendix 9.1.10 of the EIAR. An
 extensive ground investigation campaign was carried out across the site. These ground
 investigation locations related to the revised turbine and substation layout of the proposed
 development as part of this planning application and EIAR. The ground investigation campaign
 was composed of the following:
 - 3no. Rotary core drillings,
 - 34no. trial pits.
 - Logging of the soil layers and sampling of each stratum encountered; and
- GDG November 2023- 97no. peat probes and site inspections at the updated proposed infrastructure locations presented in Appendix 9.1.11 of the EIAR.

The site investigation locations considered the following criteria:

- Spatial distribution of the proposed infrastructure;
- Distance between probe points to avoid interpolation of peat depths across large distances;
- Changes in slope angle, as peat depths are likely to be shallower on steeper slopes;
- Changes in vegetation, which can reflect changes in peat condition;
- Changes in hydrological conditions; and
- Changes in land use.

Ground investigation locations are shown in Figure J-1, Figure J-2 and Figure J-3 in Appendix J.

Table J-1 to Table J-22 in Appendix J present the observations made at the proposed infrastructure.





3.2.1 PEAT DEPTH ENCOUNTERED

The ground investigations indicate that the ground conditions at the site comprise predominantly of areas of cut-over/cutaway raised peat generally of thicknesses less than 2.0m, but isolated pockets of thicknesses of up to approximately 6.2m were identified.

Peat thickness encountered by intrusive investigations at 773 No. Locations across the site, recording peat thicknesses up to 6.2m, with an average of 1.38m recorded. The frequency of different peat thicknesses is shown in Figure 3-5. In total, 47% of recorded peat thicknesses were under 1m, and 77% were under 2m. Peat depths in excess of 2m were encountered within the southern part of the site, concentrated around the vicinity of T19, T20 and T22, with peat of over 2m depth also recorded at the T5 and T18 locations. The deepest areas of peat (depth 6.2m) were recorded in isolated locations to the east of T01 and T02 at a location where no infrastructure is proposed and at discrete locations east of the proposed internal floated access roads. A summary of the recorded average peat depths at each infrastructure location is illustrated in Table 3-1. A photo of the 2m deep peat observed in GDG TP108 (near T19) can be seen in Figure 3-4.

Infrastructure Location	Average Peat Depth (m)	Infrastructure Location	Average Peat Depth (m)
Turbine 1	0.26	Turbine 19	0.89
Turbine 2	0.37	Turbine 20	1.21
Turbine 3	0.53	Turbine 21	0.37
Turbine 4	1.25	Turbine 22	1.79
Turbine 5	2.35	Battery Storage compound	0.9
Turbine 6	1.86	Substation	1.7
Turbine 7	1.57	Construction Compound 1	3.1
Turbine 8	0.70	Construction Compound 2	3.4
Turbine 9	0.68	Construction Compound 3	0
Turbine 10	0.29	Construction Compound 4	1.8
Turbine 11	0.41	Met Mast 1 (Derryaroge Bog)	1.9
Turbine 12	0.29	Met Mast 2 (Lough Bannow Bog)	2.9
Turbine 13	0.84	Borrow Pit 01	0.82
Turbine 14	0.46	Borrow Pit 02	0.91
Turbine 15	0.86	Borrow Pit 03	0.6

Table 3-1: Average peat depths at infrastructure locations.





Turbine 16	1.79	Borrow Pit 04	0.82
Turbine 17	0.62	Peat Deposition Area (Derryaroge Bog)	1.6
Turbine 18	2.63	Peat Deposition Area (Derryadd Bog)	1.5



Figure 3-4: Photo through Trial pit (GDG TP08) near T19 showing cut-over peat underlain by cohesive Glacial Till (Photo Dated November 2016)







Figure 3-5: Histogram of peat probe thickness results across the site

It is noted that data obtained through peat probing cannot be utilised in classifying the peat material, given that peat probing does not fully distinguish between the different types of peat material and between peat and other soft ground. The observations, sampling recovery and description from the trial pits were considered the most reliable source of representative peat depths across the site. However, it is considered that the peat probing data generally compares well with trial pitting data, and so all available data types: peat probe, shear vane and trial pit locations, have been used in the peat thickness assessment.

A raster map was created in GIS software presenting the interpolated peat depth across the site from the peat probe points using the inverse Distance Weighted (IDW) method. This interpolated raster of peat depths is represented in Figure J-4 to Figure J-7 in Appendix J.

3.2.2 PEAT STRENGTH ASSESSMENT

In addition to peat depths, assessment of peat condition and strength has been carried out throughout the ground investigation campaigns.

In general, the peat is described as pseudo fibrous or fibrous with a Von Post measurement (from Hobbs, 1986) varying between H3-H5 (very slightly to moderately decomposed peat), some occasional thin thicknesses (<0.5 m) of strongly decomposed amorphous peat with a Von Post reading >H6 (moderately highly decomposed peat or higher) is recorded. There is little evidence of any trend in the Von Post results in plan, or laterally throughout the site. It was common for the Von Post number to increase with depth, although there was considerable local variation and reversals of this trend were also observed.

Over 600 No. Shear vane tests were carried out during the several site investigation campaigns at locations throughout the proposed wind farm site. The tests were carried out in trial pits, and at 0.5m depth intervals through the peat material encountered at the site to best understand any variation within the peat material with depth. A large variation in shear vane results was seen throughout the peat material ranging up to 45 kPa. The weakest peat recorded was a shear strength





of 5 kPa was found at scattered locations of the site. These low shear strength results were generally found in the upper part of the ground profile (< 0.5 m). There was no evidence for particularly weak zones being present at depth (>1.5m) within the peat mass. No clear trend was evident between variation in the shear vane result and the Von Post description.

3.2.3 LIMITATIONS DURING SITE VISITS

During the 2023 peat probing and site reconnaissance campaign access was not possible to the Turbine 6 and Turbine 7 locations due to ponded surface water. Access was gained as close as safely possible to these locations and ground investigation information has been gathered in these areas in past site investigation campaigns.

The topographic information at these locations was also limited as the LiDAR survey collected is limited by the presence of surface water. The area was observed from a distance during the site visit and the GDG engineers have noted that there are no evident rises or falls in the topographic elevations. The area appears to be a flat peat bog or wetland area with some extensive low vegetation.

The construction phase contractor will be required to develop a methodology for investigating these areas and will include these in their design assessments. The findings of the 2023 site reconnaissance at Turbine 6 and Turbine 7 are outlined in Table J-6 and Table J-7 of Appendix J.

4 PEAT STABILITY ASSESSMENT

The peat stability assessment is one of the inputs required for the peat hazard assessment and risk calculation. This section presents:

- A review of the general approaches to assess peat stability;
- The concept of Factor of Safety (FoS);
- The methodology adopted for this report and the parameters required; and
- The resulting FoS delineates safety buffers and peat stockpile restricted areas if required.

4.1 MAIN APPROACHES TO ASSESS PEAT STABILITY

There are several possible approaches for assessing peat stability. However, there are two main approaches typically used in Ireland for assessing peat stability for wind farm developments:

- 1) Qualitative geomorphological judgement; and
- 2) Quantitative assessment:
 - a) Empirical probabilistic approach.
 - b) Physically-based deterministic approach (Factor of Safety FoS).

Approach 1 is subjective and thus not adopted for this study. Approach 2a is objective and quantitative but is more appropriate for land planning and decision-making studies at a regional scale. However, the 2a method does not provide an engineering indication of physical stability as Approach 2b does. In this report, the peat stability assessment is carried out by using Approach 2b: the deterministic (FoS) approach (Bromhead, 1986), as this is considered the most comprehensive assessment of peat slope stability. This approach is further discussed in the following sections.





4.2 THE FACTOR OF SAFETY (FOS) CONCEPT

The factor of safety is a measure of the stability of a slope. For any slope, the degree of stability depends on the balance between the landslide driving forces (weight of the slope) and its inherent shear strength, illustrated in Figure 4-A.



Figure 4-A: Balance of forces in a slope (Scottish Government, 2017).

Therefore, the factor of safety provides a direct measure of the degree of stability of a slope by the ratio of the shear resistance along a potential surface of failure and the landslide driving forces acting on such surface. Multiple potential surfaces of failure are possible, but the FoS assigned to a slope is that of the surface of failure with the lowest value of FoS.

- FoS < 1 indicates a slope is unstable and prone to failure.
- FoS = 1 indicates a slope is theoretically stable but may not be safe particularly if any changes to loading or environmental conditions were to occur.
- FoS ≥ 1.3 was the acceptable safety threshold in the previous code of practice for earthworks British Standard BS 6031:1981 (BSI, 1981). This document states that for a firsttime failure with a good standard of site investigation, a FoS greater than 1.3 indicates that the slope is stable and safe.

Eurocode 7 (EC7) (I.S. EN 1997 1.2005+AC.2009) is the current code of practice for the design of geotechnical engineering works. The design philosophy used in EC7 applies partial factors to soil parameters, actions and resistances. Unlike the traditional FoS approach, EC7 does not provide a direct measure of stability, as global factors of safety are not used.

Therefore, to provide a direct measure of the peat stability across proposed wind farm site, the BS 6031:1981 FoS method has been used for this assessment rather than EC7 partial factors. As a general guide, the FoS limits for peat slopes used in this report are summarised in Table 4-1.

Table 4-1: Factor of Safety limits used in this report.

Factor of Safety limits	Slope stability
FoS < 1	Unstable
1 ≤ FoS <1.3	Stable but not safe
FoS ≥ 1.3	Stable and safe

4.3 METHODOLOGY ADOPTED AND PARAMETERS

The stability of a peat slope is dependent on several factors working in combination, namely the slope angle, the shear strength of the peat, the depth of the peat, the pore water pressure and the loading conditions. An adverse combination of these factors could potentially result in peat failure. An adverse value of one of the above-mentioned factors alone is unlikely to result in peat failure. The infinite slope model (Skempton and DeLory, 1957) is used to combine these factors to determine a factor of safety for peat sliding in the proposed wind farm site. This model is based on a translational slide, which is a reasonable representation of the dominant mode of movement for peat failures.

To determine the stability of the peat slopes in the proposed wind farm site, short-term stability during construction (using undrained soil strength conditions) and long-term stability during operation, using undrained soil strength conditions, analyses have been carried out.

4.3.1 UNDRAINED SOIL STRENGTH CONDITIONS

The undrained loading condition applies in the short-term during construction and until construction, induced pore water pressures dissipate.

Undrained shear strength values (c_u) for peat are used for the total stress analysis. Based on the findings of the Derrybrien failure, undrained loading during construction was found to be the critical failure mechanism.

The shear strength values obtained within the peat material during the ground investigations ranged between 5 and 45kPa (Section. 3.2.2). Based on GDG's experience in the assessment of similar cutaway raised peat and values reviewed in literature, the lower bound value from the ground investigation information of 5 kPa is considered conservative and as such has been adopted for the undrained calculation.

The formula used to determine the factor of safety for the undrained condition in the peat (Bromhead, 1986) is as follows:

$$F = \frac{c_u}{\gamma z sin\alpha cos\alpha}$$

Equation 4.3-1

Where,

F = Factor of Safety;

c_u = Undrained strength (5 kPa in the proposed wind farm site);

 γ = Bulk unit weight of the material (assumed 10 kN/m³);





z = Depth to failure plane assumed as the depth of peat (this is the interpolated raster of peat depth); and

 α = Slope angle (in each pixel of 1 m. This is obtained from the 1-m DEM provided by the Client).

4.3.2 DRAINED SOIL STRENGTH CONDITIONS

The drained loading condition applies in the long term. The condition examines the effect of the change in groundwater level as a result of rainfall on the existing stability of the natural peat slopes.

A drained analysis requires effective cohesion (c') and effective friction angle (ϕ ') values for the calculations. These values can be difficult to obtain because of the disturbance experienced when sampling peat and the difficulties in interpreting test results due to the excessive strain induced within the peat. To determine suitable drained strength values, a review of published information on peat was undertaken. Table 4-2 shows a summary of the drained parameters used in published literature. Based on GDG's experience in the assessment of similar cutover/cutaway peats, and the values reviewed in the literature, it was considered appropriately conservative to use design values below the averages, namely c' = 4 kPa and ϕ ' = 25°.

Reference	Cohesion, c' (kPa)	Friction Angle
Hanrahan et al. (1967)	5 to 7	36 to 43
Rowe and Mylleville (1996)	2.5	28
Landva (1980)	2 to 4	27.1 to 32.5
Landva (1980)	5 to 6	-
Carling (1986)	6.5	0
Farrell and Hebib (1998)	0	38
Farrell and Hebib (1998)	0.61	31
Rowe, Maclean and Soderman (1984)	3	27
McGreever and Farrell (1988)	6	38
McGreever and Farrell (1988)	6	31
Hungr and Evans (1985)	3.3	-
Madison et al. (1996)	10	23
Dykes and Kirk (2006)	3.2	30.4
Dykes and Kirk (2006)	4	28.8
Warburton et al (2003)	5	23.9
Warburton et al (2003)	8.74	21
Entec (2008)	3.8	36.8
Komatsu et al (2011)	8	34
Zhang and O'Kelly (2014)	0	28.9 to 30.3

Table 4-2: Effective cohesion and friction angle values from the literature

The formula used to determine the factor of safety for the drained condition in the peat (Bromhead, 1986) is as follows:





$$F = \frac{c' + (\gamma z - \gamma_w h_w) \cos^2 \alpha \tan \phi'}{\gamma z \sin \alpha \cos \alpha}$$

Where,

F = Factor of Safety;

c' = Effective cohesion (4 kPa);

 γ = Bulk unit weight of the material (10 kN/m³);

z = Depth to failure plane assumed as the depth of peat (this is the interpolated peat depth);

 γ_w = Unit weight of water (9.81 kN/m³);

 h_w = Height of the water table above the failure plane (= z i.e. surface level);

 α = Slope angle (in each pixel. This is obtained from the 1-m contour lines provided by the Client);

ø' = Effective friction angle (25°).

The following assumptions have been made as part of the analysis:

- 1) Peat depths are based on the maximum peat depths recorded in each probe from the walkover surveys (as outlined in Section 3).
- 2) The slope angles derived from the DEM, as outlined in Section 2.5, accurately represent slope angles on site.
- 3) The surface of failure is assumed to be parallel to the ground surface.
- 4) The peat stability is calculated in pixels of 1 m across the fringe containing information on peat depth and the proposed infrastructure.

Two surcharging conditions are considered for the stability analysis:

- No surcharging load; and
- Surcharging load of 10 kPa, equivalent to 1 m of stockpiled or side-cast peat.

4.4 FOS RESULTS

The factors of safety obtained for the two different conditions (undrained and drained) and for the two surcharge scenarios (no surcharge and 1 m of peat surcharge) are presented in table format and map format.

Table K-1 and Table K-2 in Appendix I show the FoS calculation process in the proposed turbine sites only for undrained and drained conditions, respectively. The FoS calculation for the rest of the sites, i.e. the proposed substation, temporary construction compounds, access roads, borrow pit, substation, battery storage, security compounds, etc. (more than 5000 pixels of 1 m), has been carried out semi-automatically in GIS by implementing Equation 4.3-1 and Equation 4.3-2 in the GIS raster calculator.

4.4.1 FoS FOR UNDRAINED CONDITIONS

The spatial distribution of the FoS values calculated for undrained conditions (no surcharge) is shown in Figure K-1 to Figure K-3 in Appendix K. At each turbine location, the construction compound, the substation and borrow pit location, the pixels exhibit a FoS > 1.3 (green: stable and safe). Several





small isolated areas of $1 \le FoS < 1.3$ (yellow: stable but not safe), and FoS <1 (red: not stable) are identified. These areas correlate with existing drainage excavations generally orientated northwest to southeast. The narrow linear features are associated with steep slopes at drainage excavations and are not considered to present a significant peat landslide risk.

4.4.2 FoS FOR UNDRAINED CONDITION AND SURCHARGE OF 10 KPA

Figure K-4 to Figure K-6 in Appendix I depict the spatial distribution of the FoS values calculated for undrained conditions and with a 10 kPa surcharge. The 10kPa simulated the placement of 1m of peat material on the ground surface. In terms of the factor of safety results, the undrained condition with the 10kPa surcharge is considered to be the critical stability scenario. Almost all of the pixels are shown to be stable and safe (FoS > 1.3, green), including each turbine location, the construction compound, the substation, battery storage areas, security compounds and borrow pits several small isolated areas were identified with $1 \le FoS < 1.3$ (yellow: stable but not safe), and FoS <1 (red: not stable). The narrow linear features are associated with steep slopes at peat-cut faces and drainage excavations and are not considered to present a significant peat landslide risk. However, the construction methods and mitigations outlined in the associated Peat and Spoil Management Plan will ensure the safe and stable construction of the proposed structure in these locations.

4.4.3 FOS FOR DRAINED CONDITIONS

The spatial distribution of the FoS values calculated for undrained conditions (no surcharge) is shown. in Figure K-7 to Figure K-9 in Appendix K. Each of the pixels exhibits a FoS > 1.3 (green: stable and safe). Several small isolated areas were identified with $1 \le FoS < 1.3$ (yellow: stable but not safe), and FoS <1 (red: not stable). These areas correlate with existing drainage excavations generally orientated northwest to southeast. The narrow linear features are associated with steep slopes at drainage excavations and are not considered to present a significant peat landslide risk.

4.4.4 FoS FOR DRAINED CONDITION AND SURCHARGE OF 10 KPA

The spatial distribution of the FoS values calculated for undrained conditions (no surcharge) is shown in Figure K-10 to Figure K-12 in Appendix K. At each turbine and hardstand location, the pixels exhibit a FoS > 1.3 (green: stable and safe). Several small isolated areas were identified with $1 \le FoS < 1.3$ (yellow: stable but not safe), and FoS <1 (red: not stable). These areas correlate with existing drainage excavations generally orientated northwest to southeast. The narrow linear features are associated with steep slopes at drainage excavations and are not considered to present a significant peat landslide risk.

4.5 ASSESSMENT AND INTERPRETATION OF FOS RESULTS

The interpretation of the factor of safety analysis and accurate assessment of the peat stability conditions is an approach which combines the developed polygon areas of the FoS results, areas of risk identified during the site walkovers and potential risk areas identified from the examination of peat depths and site topography. It is noted that the results from all FoS analyses (drained/undrained, with and without surcharge) are used, highlighting any areas indicative as having a FoS of less than 1.3 in the worst-case surcharged condition with 10kPa. These areas were then cross-examined with the observations from the site visits and topographic models (see Appendix E for LiDAR DEM drawings).





The results of the FoS analysis indicate that the peat conditions at the site are stable and safe in their natural (unsurcharged) conditions using both undrained and drained soil strengths, except for the steep cut faces at locations of previous peat extraction and land drainage. These narrow linear features are located away from the footprint of the key wind farm infrastructure and are considered to not be a significant peat landslide risk. Any potential failure which could occur here would be a very small localised failure of the peat extraction face. These areas have been examined during site walkovers, with the observations supporting this conclusion.

The results of the assessment which include a surcharge indicate low FoS results along existing drainage and peat extraction faces. The linear areas indicating a low factor of safety with the surcharge are more extensive and occur adjacent to and, in limited areas, within the footprint of the proposed wind farm. These areas are considered to not be a significant peat landslide risk. However, the Contractor will be required to follow the construction methods and mitigations outlined in the associated Peat and Spoil Management Plan will ensure the safe and stable construction of the proposed structure.

Required mitigation methods include:

- the offset of peat reinstatement by at least one meter from the edge of peat cutting, or
- the reinstatement of the peat-cutting face with excavated acrotelm peat to restore a safe, natural slope on the peat surface.

Both methods are subject to the Detailed Designer's local and global stability assessment and should consider variable and static surcharge loading from engineered fill materials and associated construction activities.

5 PEAT STABILITY RISK ASSESSMENT (PSRA)

A peat stability risk assessment (PSRA) has been carried out at each of the proposed infrastructure locations, taking into consideration the landslide hazard probability and potential consequences at each location. The peat stability factor of safety is the most significant factor in generating a risk rating. The production of a PSRA risk rating for the site access tracks is not possible as they are linear structures which cover significant distances, but the same considerations were used in the design and assessment of the stability of the access road alignment. The results of the FoS analysis have been considered for all access tracks.

5.1 **RISK DEFINITION**

Risk is the potential or probability of adverse consequences, including economic losses, environmental or social harm or detriment. Risk is expressed as the product of a hazard (e.g. peat landslide) and its adverse consequences (Lee & Jones, 2004; Corominas et al., 2014) (Equation 5.1-1). Some use approximate synonyms and refer to risk as the product of the likelihood and the impact or the product of susceptibility and the exposure.

Risk = (Hazard) x (Adverse Consequences)

Equation 5.1-1





5.2 GENERAL METHODS FOR RISK ASSESSMENT

There are various levels of risk assessment, ranging between:

- Detailed quantitative risk assessments (QRA) where the objective is to generate more precise measures of the risks (e.g. expressing risk as a specific probability of loss). These require a large amount of quantitative input and time; and
- High-level qualitative assessments where the objective is to develop an approximate estimate of the risks, particularly in relative terms (e.g. low, medium and high levels of risk).

A qualitative approach has been followed for this PSRA given the availability of information and the time frame. To apply Equation 5.1-1, the quantitative information (e.g. FoS) and the qualitative information (e.g. geomorphic observations relevant to the stability of peat) that determine the hazard and the consequences need to be transformed into subjective ratings. The following sections address the calculation of the two risk components: hazard and consequence.

5.3 HAZARD ASSESSMENT

Landslide hazard is the likelihood or probability of landslide occurrence in each location and a given period. The likelihood or hazard of peat landslides has been determined according to the guidelines for geotechnical risk management given by Clayton (2001) in *Managing geotechnical risk*, taking into account the approach of MacCulloch's (2005) *Guidelines for the risk management of peat slips on the construction of low volume/low-cost roads over peat*. The available data from the desk study, site reconnaissance and site investigations was used in combination with these guidelines.

The hazard is calculated from a variety of weighted factors, including the FoS and thirteen secondary factors related to geomorphic observations, topography, hydrology, vegetation, peat workings, existing loads and slide history (Appendix L). These secondary factors are difficult to quantify in a stability calculation but may contribute to peat instability. These factors are drawn from the Scottish Government Best Practice Guidelines (2017), Mills and Rushton (2023) and past experience on previous projects.

Each hazard factor has been reclassified into one of four classes with rating values ranging from 0 to 3 (Appendix L). A rating of 0 indicates that the hazard factor is not relevant; ratings 1, 2 and 3 indicate low, moderate and high correlation to peat slide hazard, respectively.

Weighting values have been assigned to these factors to reflect their relative importance in peat stability. Both the rating and the weighting values have been assigned according to the expert criteria of the project team and are presented in Appendix L. The hazard score of each factor is the multiplication of its rating value and weight value. These factors and their corresponding weightings are presented in Table 5-1.

The hazard values for a given infrastructure element are the sum of the scores of all the hazard factors divided by the maximum hazard value possible to obtain a normalised hazard value ranging from 0 to 1 (see tables in Appendix L). Hazard is grouped into four categories: Negligible, low, medium and high.




	Hazard fa	ctors	Role in peat stability	Weight
	Factor of S	afety	This is the most critical factor, including the slope angle, the peat depth, the peat density, the peat cohesion in the drained and undrained conditions, as well as the effective friction angle. This is the complete factor. See Section 4 for further details.	10
		Curvature Plan (across the slope)	This represents the curvature across the slope and the funnelling/dispersion of the runoff.	
	Topography	Curvature Profile (downslope)	This represents the curvature down-slope and, therefore, the capacity of water retention and infiltration. Convex slopes are typically more prone to landslides.	
		Distance from watercourse (m)	This tends to affect the likelihood of landslides, especially in sectors where this distance is short.	
	Hydrology	Evidence of piping	The presence of piping is clear evidence of potential peat instability.	
	Hydrology	The direction of existing drainage ditches	Drainage ditches that are aligned cross slope can affect the overall stability of a slope face.	1
ctors		Bush	This is an indicator of the type of peat at the site and the hydrological nature of the site.	
scondary fa	Vegetation	Forestry	The vigour of forestry is another indicator of peat stability, with stunted trees more frequent in unstable sectors.	
Š	_	Peat cuts	This factor evaluates the effect of various peat workings	
	Peat workings	Peat cuts vs contour lines	On the stability of the peat. Where the peat cuts parallel the contour lines, the potential instability increases.	
	Existing loads	Roads	Side-cast of solid roads and floating roads pose a load to the peat blanket.	
		Distance to previous slides (km)	This suggests that landslides at the site are likely if a peat slide has occurred at the site or within a 10- kilometre radius. The weight assigned doubles the weights for the other secondary factors	
	Slide history	Evidence of peat movement (e.g. tension cracks, compression features).	This factor evaluates the effect of any existing peat movement indicators on-site, such as tension cracks. The weight assigned doubles the weights for the other secondary factors.	2

Table 5-1: Factors affecting peat stability and hazard.





5.4 ADVERSE CONSEQUENCES ASSESSMENT

The impacts of peat landslides on the infrastructure elements, surrounding environment, and existing assets may typically generate a variety of adverse consequences. This report assessed these consequences qualitatively following the Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (PLHRABPG, Scottish Government, 2017). Both the rating and the weighting values have been assigned according to the expert criteria of the project team and are presented in Appendix L.

Table 5-2 Summarises the consequences considered for the PSRA of the proposed wind farm.

Consequence factors	Description	Weight
Volume of potential peat flow (function of distance from the nearest watercourse and peat depth in the area)	This is the second most heavily weighted factor. It is estimated based on the distance from the nearest defined watercourse and the depth of peat in the area. The longer the distance and the deepest the peat depth, the larger the landslide.	3
Downslope features	This factor accounts for the type/shape of downslope features that may hamper or favour the propagation downhill of the peat flow.	
Proximity from the defined valley (m)	This is the distance from the site to the nearest defined river valley. Rivers close to potential landslide sectors are more vulnerable to a landslide event.	
Downhill slope angle	This factor accounts for the runout distance as a matter of slope angle.	
Downstream aquatic environment	Reflects the severity of a peat slide event's impact on the receiving aquatic environment.	1
Public roads in the potential peat flow path	Rates the impact of a peat slide striking a public road.	
Overhead lines in the potential peat flow path	Rates the impact of a peat slide striking a service line.	
Buildings in the potential peat	Rates the impact of a peat slide striking a habitable	
flow path	structure.	
Capability to respond (access and	Rates the capability of the site staff to respond to a peat	
resources)	instability event.	

Table 5-2: Consequences considered for the PSRA

The nine consequence factors considered have been reclassified in the same fashion the hazard factors were reclassified (Appendix L). A rating of 0 indicates that the consequence factor is not relevant and a rating of 3 indicates high consequences.

'Volume of potential landslide' has been assigned a weight of 3 to reflect its relative importance in the potential consequences. The rest of the factors have been assigned a weight of 1. Both the rating and the weighting values have been assigned according to the expert criteria of the project team. The score of each consequence factor is the multiplication of its rating value and its weight value (Appendix L).





The consequences value for a given infrastructure element is the sum of the nine consequences scores. This total value is then divided by the maximum consequence value possible to obtain a normalised consequence value ranging from 0 to 1 (see tables in Appendix L). Consequences are grouped into four categories: Negligible, low, medium and high.

5.5 **RISK CALCULATION**

The risk in each proposed wind farm infrastructure element is calculated with Equation 5.1-1, i.e. multiplying the scores of the hazard and the scores of the consequences, in line with the PLHRABPG (Scottish Government, 2017). The risk rating ranges between 0 and 1 and the following levels of risk rating have been distinguished (Table 5-1 and Table 5-2):

- <u>High (0.6 to 1)</u>: Avoid project development at these locations. Mitigation is generally not feasible.
- <u>Medium (0.4 to 0.6)</u>: The project should not proceed unless risk can be avoided or mitigated at these locations without significant environmental impact to reduce risk ranking to low or negligible.
- <u>Low (0.2 to 0.4)</u>: Project may proceed pending further investigation to refine assessment and mitigate hazard through relocation or implementation of mitigation measures at these locations.
- <u>Negligible (0 to 0.2)</u>: Project should proceed with monitoring and mitigation of peat landslide hazards at these locations as appropriate.



Figure 5-A: Risk ratings at the proposed turbine locations







Figure 5-B: Risk ratings at the proposed substation, battery storage compound, peat deposition areas, construction compound, security cabins, and borrow pits

Appendix L gathers the risk calculation process at each turbine considering the four scenarios of hazard: Undrained; undrained with a surcharge of 1 m; drained; and drained with a surcharge of 1m. Figure 5-A and Figure 5-B Summarise the risk rating obtained at the turbines and other infrastructure locations. All the turbines and infrastructure elements are located in sectors of negligible risk.

It is stressed that the resulting risk rating does not indicate a probability of a landslide occurring; it simply expresses a rating of the potential risk.

6 **MITIGATION MEASURES**

As outlined in Section 5.5, the peat stability risk assessment has yielded a negligible risk rating for each infrastructure location. The Scottish Government Best Practice Guidelines (2017) state the following for areas with negligible risk levels: "Project should proceed with monitoring and mitigation of peat landslide hazards at these locations as appropriate."

All earthworks shall be designed by a competent geotechnical designer who shall be informed where necessary by a post-consent detailed ground investigation campaign which will need to include intrusive methods such as trial pitting and borehole locations with a specified suite of in-situ and geotechnical laboratory testing to further assessment the engineering characteristics of the infrastructure locations.

Possible mitigation measures in relation to peat instability are considered below. Additional mitigation measures relating the handling and deposition of peat are outlined in the Peat and Spoil Management Plan (GDG, 2025) in Appendix 9.2.





6.1 MITIGATION BY AVOIDANCE

Site infrastructure has been sited to avoid areas of medium or high risk where possible, and all main infrastructure locations are assessed as being of negligible risk.

6.2 ENGINEERING MITIGATION MEASURES

Many of the site-specific (e.g. peat depth, slope angle) and site-independent variables (e.g. weather) that contribute to the incidence of natural peat landslides are beyond engineering control without significant damage to the peat itself. However, several engineering measures exist to minimise the risks associated with potential triggers (such as short-term peaks in hydrogeological activity).

6.2.1 CONSTRUCTION MANAGEMENT

Inappropriate storage of excavated peat and overburden, as well as uncontrolled loading of peat material, is considered one of the main causes of peat instability and landslide event triggers during the wind farm construction process. The management and control of these activities is key to derisking peat stability at the wind farm site. It is required that the construction method statements for the project also take into account, but not be limited, to the guidance documents listed in Section 1.3.4 and the recommendations and requirements outlined throughout this document.

The general requirements for the management of peat and the mitigation of peat instability at the site are as follows:

- Appointment of experienced and competent contractors and designers;
- The construction works on site will be supervised by experienced and qualified personnel;
- Allocate sufficient time for the project to be constructed safely with all peat stability mitigation measures included in the programme;
- Set up, maintain and report findings from monitoring systems, including sightline monitoring;
- Maintain vigilance and awareness through Tool-Box-Talks (TBTs) on peat stability;
- Prevent undercutting of slopes and unsupported excavations;
- Prevent placement of loads/overburden on marginal ground;
- Manage and maintain a robust drainage system. This will be the responsibility of the appointed contractor and their designer;
- Storage of peat material including temporary and side casting be carried out in the permitted areas only.
- Acrotelm (upper) peat material may be used as landscaping material where topography allows and the detail designer has assessed the stability risk;
- Uncontrolled placement of peat or loading of peat material must be avoided;
- Water flows within drainage systems will be controlled. Velocities of slows must be controlled using check damns within drainage systems and the uncontrolled release of water onto slopes can create a landslide risk and must be avoided,
- All construction requiring cut and fill earthworks required a robust monitoring and inspection programme. The details of this inspection programme will depend on the purpose and methodologies of the works and the ground conditions;
- A method statement and risk assessment (RAMS) which considers the potential causes and mitigations of peat instabilities and landslides is required and must be regularly





communicated to all site staff. An observational approach by all site staff to the ground conditions and the risks should be promoted and any changes in the ground or site conditions should be reported and the risk dynamically assessed. The RAMS will be reviewed for compliance with the PSRA, prior to acceptance by the developer.

6.2.2 DRAINAGE MEASURES

The drainage measures are outlined in Chapter 3 (Description of the Proposed Development) of the EIAR. Surface water drainage plans will be implemented to account for modified flows created by construction, which in turn may affect peat stability, pollution and wildlife interests. Drainage measures need to be carefully planned to minimise any negative impacts.

Runoff will be maintained at the existing runoff rates. Controlled discharge will be maintained at existing pumping rates. The layout of the proposed wind farm site has been designed to collect surface water runoff from hard standing areas within the development and discharge to associated surface water attenuation lagoons adjacent to the proposed infrastructure. It will then make its way into the existing field drains and existing IPC settlement / slit pond infrastructure before being discharged through existing discharge points by pump or gravity flow. From here the water will outfall at the appropriate existing run-off rates. Where temporary excavations for turbines and borrow pits, water will be stored within the existing topographical depressions.

6.3 MONITORING

The installation of movement monitoring posts is recommended for areas where works are taking place on or adjacent to identified peat depths greater than 2m.

Movement monitoring posts shall be installed upslope and downslope of the works areas and shall be as outlined:

- Posts shall be 1m to 1.5m in length, installed at 5m intervals with no less than seven posts in each line of sight (~30m).
- A string line shall in attached to the first and last post with all intermediate posts in contact with one side of the string line,
- A numbering system shall be designed for the monitoring posts and a record shall be kept of this numbering system.

Movement monitoring posts shall be observed at least once a day with more frequent inspections in which adjacent works are ongoing. Should movements be recorded the frequency of these inspections will be increased. Records shall be kept of all monitor post inspections concerning date, time and any relative movement between posts, if any. Any movement identified in the posts shall be recorded concerning the post numbering system.

The contractor shall also develop a routine inspection of all areas surrounding work in peat, not just exclusively on the monitoring posts. These inspections shall include an assessment of ground stability and drainage conditions. These inspections should identify any cracking or deformation on the peat surface, excessive settlement on structures, drain blockages or springs etc.

6.4 ENGINEERING MITIGATION MEASURES TO CONTROL LANDSLIDE IMPACTS

Although the stability of the peat and overburden is considered to be safe for the construction activities proposed, the peat and spoil should be managed in line with the details of this document, to ensure the risk of a peat failure or landslide is negligible. However, it is important to consider the





actions which shall be carried out if signs of instability are identified during the outlined monitoring or should a failure occur at the site.

The full methodologies for these activities will be outlined in the construction contractor RAMS and include the methodologies for immediate and long-term response.

6.4.1 MOVEMENT OR INSTABILITY OBSERVED IN MONITORING AREAS

Where excessive movement has been observed in the installed monitoring outlined in Section 6.3 The following measures will be taken;

- All construction activities will be suspended in the area,
- The Contractors Geotechnical Engineer shall carry out an assessment of the peat instability including drainage. The Contractor's Geotechnical Engineer shall compile a report outlining the surveys undertaken, the potential cause of the instability, an assessment of any increased risk caused by the instability, and the further measures required to manage this risk,
- An increased monitoring regime shall be specified including an increase in the number of monitoring post lines, a decrease in monitoring post spacing and an increase in the frequency of monitoring post observations,
- Should no further movement be detected, construction activities will be recommenced while maintaining the increased monitoring regime,
- Should further excessive movement be detected, the Contractor's design and project geotechnical engineer will need to be informed and the design of further reinstatement works will be required such as excavation of the disturbed material, installation of granular berms or similar.

6.4.2 EMERGENCY RESPONSE TO A LANDSLIDE EVENT

If the scenario of a landslide, bog burst or peat slide occurs at the site the following steps shall be carried out by the contractor:

- All members of the project will be alerted immediately or as it is safe to do so;
- All site works will be ceased, and all available resources will be used for the management and mitigation of the risks posed by the event;
- The key initial activity will be to prevent displaced materials from reaching any watercourses or sensitive environments. Given the terrain of the Proposed Development Site, the key risk is the development of a propagation landslide or slip within topographic valleys and watercourses. Where possible, check barrage structures or catch ditches on land or within these topographic valleys and watercourses shall be constructed to aid prevent further runout of the disturbed peat or spoil material.

6.4.2.1 CHECK BARRAGES

Check barrages are permeable granular structures constructed within the path of a landslide to prevent the further downhill or downstream movement of the disturbed material. Typically, these will be constructed of locally generated stone material, often of large sizing. The large material sizing will allow water to pass through the check barrage material, avoiding a build-up in hydrostatic pressure while containing the debris within the slide. Check barrage will typically be a dam structure





between 1 and 1.5m high, with slopes between 1(V):1.5(H) or 2(H), and constructed across the full section of topographic valley and/or watercourse.

The check barrage is an emergency preventative measure only to restrict or reduce the movement of displaced material downslope and away from a watercourse. Further assessment and reinstatement works will likely be required should a landslide occur, and engagement and reporting of the incident will be required by all parties involved in the project. Should the check barrage no longer be required it may be removed and the area reinstated.

The use of check barrages is only proposed for use in the unlikely event of a large landslide event. The proposed locations are only indicative, targeting potential topographic channels but will vary depending on the location and nature of the slide event. The Contractors will need to include an assessment of potential check barrage locations and methods for their construction within the emergency procedures in their associated Method Statement documentation.

6.4.2.2 CATCH DITCHES

Similarly, ditches may also slow or halt runout, although it is preferable that they are cut in non-peat material. Simple earthwork ditches can form a useful low-cost defence. Paired ditches and barrages have been observed (Tobin, 2003) to slow peat landslide runout at failure sites.





7 GEOTECHNICAL RISK REGISTER

Table	7-1:	Geotechnical	Risk	Register
i abic		acoteenneur		TCB StCl

The soil parameters are based on the hand shear vane test carried out during the site investigations. The interpreted undrained shear strength values take into account a conservative reduction factor for the influence of the fibres within the peat. Extensive sampling ground investigation at infrastructure location including trial pitting to assess the composition and strength of the peat and collect samples for testing. The derived values were compared with a literature review of the most common general drained and undrained parameters for each type of soil and on the descriptions. It is expected that further testing and assessment of the peat during further strength parameters shippage	Ref.	Risk	Contributing Factor	Mitigation
 hand shear vane test carried out during the site investigations. The interpreted undrained shear strength values take into account a conservative reduction factor for the influence of the fibres within the peat. Extensive sampling ground investigation at infrastructure location including trial pitting to assess the composition and strength of the peat and collect samples for testing. The derived values were compared with a literature review of the most common general drained and undrained parameters for each type of soil and on the descriptions. The collapse of dried peat berms/ peat slippage Overestimation of soil strength parameters 				The soil parameters are based on the
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required before construction. This will	-	slippage	strength parameters	ground investigation campaigns will be
allow for a reduction device a fibe				required before construction. This will
allow for a robust understanding of the				allow for a robust understanding of the
ground conditions and the detailed				ground conditions and the detailed
design of access roads and structures.				design of access roads and structures.
An extensive testing protocol shall be				An extensive testing protocol shall be
developed by the Construction phase				developed by the Construction phase
contractor and the design team. These				contractor and the design team. These
tests shall be observed by a suitably				tests shall be observed by a suitably
qualified engineer and reported to the				qualified engineer and reported to the
owner's engineer.				owner's engineer.
It would be expected that an				It would be expected that an
observational approach will be required				observational approach will be required
when constructing on peat due to the				when constructing on peat due to the
IImitations associated with testing and				initiations associated with testing and
verifying its strength and the contractor				verifying its strength and the contractor
is required to trequently inspect the peat				is required to frequently inspect the peat
material and provide proof of inspection.				Extensive ground investigation industing
2 The collapse of Underestimation of trial nitting and neat probing has been	2	The collapse of	Underestimation of	trial pitting and neat prohing has been
berm/peat slippage peat depth carried out across the site. GI locations	2	berm/peat slippage	peat depth	carried out across the site. GI locations





Ref.	Risk	Contributing Factor	Mitigation
			have been carried out at locations where access was possible. Access was limited to some areas of the site as outlined in section 3.2.3 due to ponded surface water. Further GI will be required at these locations during the detailed design and construction phase to assess peat depths in these areas. This will be carried out by the detail designer and Contractor's team. The design team shall develop their own testing criteria to satisfy and de-risk the possibility of larger peat depth occurring at these locations.
3	Failure of peat slope due to loading or agitation of existing instability	Failure to identify existing instability/ peat deformation at the site	Assessment of satellite imagery and topographical data for evidence of past landslide events was carried out as part of the desk study, finding no evidence of past instabilities or landslide events within the site area. The Geological Survey of Ireland (GSI) landslide database was examined identifying no landslide events in the local region within 5km of the site, the closest approx. 9km from the site boundary. During the site walkovers, the site GDG engineers examined the landscape and the areas surrounding the proposed infrastructure for evidence of instability or past landslide events. No past landslide or instability events were identified. Although there is no evidence of landslides within the proposed wind farm site, this does not necessarily mean that landslides have never occurred at the proposed wind farm site. It is noted that the geomorphological features associated with peat landslides (peat slides and bog bursts) are softened with time through erosion, drying and re- vegetation, particularly given the forestry and peat extraction activities which have taken place at this site. Further inspection will be required during the detailed design and





Ref.	Risk	Contributing Factor	Mitigation
			construction stage to inspect for peat
			instabilities. This will be carried out by
			the detail designer and Contractors
			team. The design team shall develop
			their own inspection and testing criteria
			to satisfy and de-risk the possibility of
			larger peat depth occurring at these
			locations.
4	The collapse of peat berm/peat slippage	Failure due to excessive loading of peat	The peat stability analysis factor of safety exercise examines the peat in the drained and undrained condition both without and with the addition of a surcharge equating to 1m of peat loading. Areas indicative of a low FoS result with the 1m peat surcharge within or adjacent to the proposed site infrastructure have been outlined in Section 4.4. Requirements for the safe and sustainable storage of peat and spoil material are outlined in the associated Peat and Spoil Management Plan (PSMP) document (GDG, 2025). The requirements and restrictions for peat and spoil management outlined in
5	Instability of peat slippage	Variations in the groundwater conditions at the site	this document must be adhered to during the construction phase. The groundwater conditions were examined during the walkovers and within the borehole and trial pit locations. A worst case scenario of groundwater at ground level has been assumed for the peat stability analysis. Areas of saturated surface peat were identified during the walkovers as outlined in Section 3 and these have been considered in the risk assessment and findings of the report. Water strikes, peat water content and groundwater conditions are noted in the trial pit locations. The groundwater conditions and peat moisture content may vary seasonally and/or more frequently with the immediate weather conditions. Long-





Ref.	Risk	Contributing Factor	Mitigation
			term groundwater monitoring across the site should be considered in further design stage ground investigations and further lab testing of the peat in its in- situ condition will need to be assessed for the construction design.
6	Instability due to unmapped subsurface karst features	Voids and subsidence due to karstic weathering of the underlying limestone bedrock.	The existing geological mapping and GI indicate the proposed wind farm site sits on limestone bedrock, which may be susceptible to karstic weathering. There are two turloughs and a group of enclosed depressions approximately 3 to 4 km to the west of the southern portion of the proposed wind farm site, and another group of enclosed depressions approximately 2 km to the east of the northern portion of the proposed wind farm site. An enclosed depression is regarded by the GSI as a water entry point into the ground in the form of, for example, a doline or a sinkhole. Karst surface features were not observed on site walkovers, although it is noted that karst features would not be easy to identify as the site is predominantly cut bog. Rotary drilling of bedrock within Derryadd Bog identified weathered limestone bedrock. Some joints in the limestone bedrock have been described as open (0.5 to 2.5 mm wide) and moderately wide (10 - 100 mm wide), indicating some minor dissolution at joints. The drilling did not encounter any significant karstic features such as voids. It is possible that karst features (voids, conduits and highly weathered zones) are located below the site extents which have not been identified due to the thick cover of peat and subsoils.





8 CONCLUSIONS AND RECOMMENDATIONS

Following the guidance of the Scottish Government (2017), a review of the relevant published information (e.g. geology, soils, existing landslides) available from the GSI, EPA etc., and relevant background literature was undertaken for the proposed wind farm (Section 2). Site reconnaissance and site investigations were carried out to validate and enhance the desk study information. Based on the available data, the fieldwork and GDG's professional judgement, it is concluded that significant peat slides are unlikely on the proposed wind farm site with diligent peat management and careful consideration of the peat conditions at the site at the detailed design and construction phase.

A deterministic Factor of Safety was calculated across the proposed infrastructure locations, and from this, a robust peat stability risk assessment (PSRA) was performed. The findings of the peat assessment showed that the site has an acceptable margin of safety and is suitable for the proposed turbine locations.

The peat stability risk for the proposed infrastructure is negligible. However, the results of the factor of safety deterministic calculation and the site walkover allowed for the identification of some areas of potential local instability where the proposed wind farm footprint is on or adjacent to historic peat extraction works or drainage excavations. These narrow linear areas are not considered to be a landslide or bog burst risk and may only cause a local failure or small volume by failure of the existing cutting face. The Contractor shall follow the construction methods and mitigations outlined in the associated Peat and Spoil Management Plan (GDG, 2025) relating to these existing cuttings to ensure the safe and stable construction of the proposed structures. As per section 6, mitigation methods include the offset of peat reinstatement by at least one meter from the edge of peat cutting or the reinstatement of the peat cutting face with excavated acrotelm peat to restore a safe, natural slope on the peat surface. These must be adhered to in future phases of the proposed wind farm.

All earthworks will be designed by a competent geotechnical designer which will be informed by a detailed ground investigation.

Construction works shall follow the recommendations of the Peat and Spoil Management Plan (GDG, 2025). During construction, it is strongly recommended to carry out frequent monitoring works, especially after heavy rainfall events or prolonged rainfall.





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Appendix A LOCATION AND ADMINISTRATIVE LIMITS

Figure A-1 : Location of the proposed site and administrative limits







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Appendix B GEOLOGY



Figure B-1: Local bedrock geology (GSI)



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Figure B-2: Local bedrock geology (GSI)



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Figure B-3: Local bedrock geology (GSI)



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Figure B-4: Local Subsoils (GSI Quaternary Sediments)



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Figure B-5: Local Subsoils (GSI Quaternary Sediments)



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Figure B-6: Local Subsoils (GSI Quaternary Sediments)



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Appendix C SOILS



Figure C-1: Local Soils (EPA/Teagasc National Soils)



- Proposed Wind Farm Site Boundary
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial
- Balance of Plant) Compound

- Construction Compound Internal Access Road Peat Deposition Area - Temporary Peat Deposition Area
- Basic Deep Poorly Drained Mineral Basic Deep Well Drained Mineral Basic Poorly Drained Mineral Soils with
- Basic Shallow, lithosolic or podzolic type soils Cutaway/cutover peat

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Figure C-2: Local Soils (EPA/Teagasc National Soils)



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Figure C-3: Local Soils (EPA/Teagasc National Soils)



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Appendix D HISTORIC MAPPING AND MULT-ITEMPORAL AERIAL IMAGERY













Appendix E TOPOGRAPHY











Figure E-2: Site Topography from LiDAR DEM provided by Tobin in 2024. Areas in red ('0') indicate areas of standing water.



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Pof. 22	268-606-51-025	(Mar	2 of	3)
NCI. 22	200-000-01-02:	(ind)	2 01	5)
Date	Remarks	Drawn	Checked	Approv
19/12/2023	First Issue	KG	SC	XOD
• • • • • • • • • • •	A DESCRIPTION OF A DESC	1 CBC	 FE 	A1

19/12/2023	First Issue	NU	36	200
26/11/2024	Revision based on Client Comments	SRG.	CE	AL
25/02/2025	Revision based on Client Comments	SRG	CE	AL
14/04/2025	Revision based on Client Comments	SRG	CE	AL.
Datum IRENET95	Transverse Mercator	Sca	le:1:18,0	00





Figure E-3: Site Topography from LiDAR DEM provided by Tobin in 2024. Areas in red ('0') indicate areas of standing water.





Appendix F SLOPE INSTABILITY MAPPING



Figure F-1: Regional Landslide Susceptibility (GSI)







Figure F-2: Local Landslide Susceptibility (GSI)



- Proposed Wind Farm Site Boundary A Turbine Locations - Crane Hardstanding 110kV Grid Connection Battery Storage EBOP (Electrial Balance of Plant) Compound Passing Bay - Amenity Carpark - Amenity Track Construction Compound Internal Access Road Peat Deposition Area - Temporary Peat Deposition Area - Substation Telecom Tower
- Landslide Susceptibility
- Low (inferred)
- Moderately Low



Bord na Móna

	500	1,0	00 m	N
ryadd L	ocal Landslide S (GSI.2025)	Suscep	otibilit	Y
Ref: 222	268-GDG-SL-01	7 (Ma	p 1 of	3)
0/12/2023	First Issue	KG	SC	Approved JOD
5/11/2024	Revision based on Client Comments	SRG	CE	AL
5/02/2025	Revision based on Client Comments	SRG	CE	AL
4/04/2025	Revision based on Client Comments	SRG	CE	AL
Datum	Transverse Mercator	Sc	ale:1:18,0	00





Figure F-3: Local Landslide Susceptibility (GSI)



- Proposed Wind Farm Site Boundary
- Turbine Locations
- Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial
- Balance of Plant) Compound
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road
- Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Landslide Susceptibility

Moderately High

62500



Bord na Móna

	500	1,0	00 m	Ň
ryadd L	ocal Landslide S	Suscep	otibilit	$\underline{\alpha}_{y}$
	(GSI,2025)			
Ref: 222	268-GDG-SL-01	7 (Ma	p 2 of	3)
Date	Remarks	Drawn	Checked	Approved
9/12/2023	First Issue	KG	SC	JOD
6/11/2024	Revision based on Client Comments	SRG	CE	AL
5/02/2025	Revision based on Client Comments	SRG	CE	AL
4/04/2025	Revision based on Client Comments	SRG	CE	AL
Datum	Transverse Mercator	Sc	ale:1:18.0	00





Figure F-4: Local Landslide Susceptibility (GSI)





Appendix G Hydrogeology



Figure G-1: Derryadd Regional Bedrock Aquifers and karst features.






Figure G-2: Derryadd Regional Ground Water Vulnerability



	2	4 km	, ,	Ň
dd Regio	nal GW Vulnera	bility	(GSI,2	2025)
Map R	ef: 22268-GDG-	SL-01	2	
Date	Remarks	Drawn	Checked	Approved
19/12/2023	First Issue	KG	SC	JOD
18/11/2024	Revision based on Client Comments	SRG	CE	AL
25/11/2024	Revision based on Client Comments	SRG	CE	AL
14/04/2025	Revision based on Client Comments	SRG	CE	AL
Datum	Transverse Mercator	Sca	ale:1:80,0	00





Figure G-3: Subsoil Permeability (GSI)





Appendix H Hydrology









Appendix I LAND COVER AND LAND USE



Peat Stability Risk Assessment (PSRA) for Derryadd Wind Farm GDG | Derryadd Wind Farm | 22268-PSRA-001-01



	2	4 km		
ld	Land Cover (Co	rine, 2	2018)	
R	ef: 22268-GDG-	SL-00	2	
			-	
Т	Remarks	Drawn	Checked	Approved
3	Remarks First Issue	Drawn	Checked SC	Approved 30D
23	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked sc CE	Approved 300 AL
23	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked sc CE CE	Approved 30D AL AL





Appendix J GEO-INVESTIGATIONS









Figure J-2: Site Specific Ground Investigations



Proposed Wind Farm Site Boundary ▲ Turbine Locations Crane Hardstanding
 110kV Grid Connection Passing Bay Amenity Track - Construction Compound Internal Access Road Temporary Peat Deposition Area
 Substation Telecom Tower Trial Pits (Tobin,2022) Borrow Pits (Tobin,2017) Trial Pits (GDG,2018) - Trial Pits (Irish Drilling, 2023) Irish Drilling (GI,2022) GDG GAVIN & DOHERTY GEOSOLUTIONS Bord na Móna 500 1,000 m Derryadd Project Specific GI Map Ref: 22268-GDG-SL-018 (Map 2 of 3) KG 300 19/12/2023 First Issue 26/11/2024 Revision based on Client Comments SRG CE AL 25/02/202 tevision based on Clien SRG AL CE Revision based on Clier SRG CE AL 14/04/2025 Datum Scale:1:18,000 Transverse Mercator IDENETOS





Figure J-3: Site Specific Ground Investigations







Figure J-4: Interpolated peat depth

Figure J-5: Interpolated peat depth



	500	1,0	00 m	
Pea	at Depth (GDG,2	2023)		
222	268-GDG-SL-02	0 (Maj	o 1 of	3)
023				
	Remarks First Issue	Drawn NG	Checked SC	Approved JOD
024	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved JOD AL
024 025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn NG SRG SRG	Checked SC CE CE	Approved JOD AL AL
024 025 025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE	Approved JOD AL AL AL





Figure J-6: Interpolated peat depth







Bord na Móna

	500	1,00	00 m	Ň
Pea	at Depth (GDG,2	2023)		
: 222	268-GDG-SL-02	0 (Maj	o 2 of	3)
te /2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
/2024	Revision based on Client Comments	SRG	CE	AL
/2025	Revision based on Client Comments	SRG	Œ	AL
/2025	Revision based on Client Comments	SRG	CE	AL
m 195	Transverse Mercator	Sci	ale:1:18,0	00





Figure J-7: Interpolated peat depth







Figure J-8: Peat Probe Points and Peat Depth (m) Map (1 of 3)





- Temporary Peat Deposition Area





Transverse Mercator

Bord na Móna

	500	1,0	00 m	N
	-		5	
Pea	at Depth (GDG,2	2023)		
222	268-GDG-SL-02	0 (Maj	p 1 of	3)
023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
024	Revision based on Client Comments	SRG	CE	AL
025	Revision based on Client Comments	SRG	CE	AL
2025	Revision based on Client Comments	SRG	CE	AL

Scale:1:18,000





Figure J-9: Peat Probe Points and Peat Depth (m) Map (2 of 3)



	500	1,00	00 m	^o m 👗		
Pea	at Depth (GDG,2	2023))			
ef: 222	268-GDG-SL-02	0 (Maj	o 2 of	3)		
		1	1			
Date	Remarks First Issue	Drawn KG	Checked SC	Approved 30D		
Date 12/2023 11/2024	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved 30D AL		
Date 12/2023 11/2024 02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked SC CE CE	Approved JOD AL AL		
Date 12/2023 11/2024 02/2025 04/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE	Approved JOD AL AL AL		





Figure J-10: Peat Probe Points and Peat Depth (m) Map (3 of 3)



Date 19/12/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD	
26/11/2024	24 Revision based on Client Comments		CE	AL	
25/02/2025	Revision based on Client Comments	SRG	CE	AL	
14/04/2025	/2025 Revision based on Client Comments		CE	AL	
Datum IRENET95	Transverse Mercator	Sc	cale:1:18,000		



Table J-1: Site reconnaissance of the turbine 1 site (T01)







Table J-2: Site reconnaissance of the turbine 2 site (T02)







Table J-3: Site reconnaissance of the turbine 3 site (T03)









Table J-4: Site reconnaissance of the turbine 4 site (T04)





Table J-5: Site reconnaissance of the turbine 5 site (T05)







Table J-6: Site reconnaissance of the turbine 6 site (T06)







Peat geo-investigation Imagery NE Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound 2.00 - 3.00 Peat Repository Area 3.00 - 4.00 — Construction Compound 4.00 - 5.00 Turbine_foundations 5.00 - 6.00 110kV Grid Connection > 6.00 Amenity Carpark - Internal Access Road Site Boundary Description w Date of the satellite images: March 2022. [Maxar/Esri]. Date of the ground-based pictures: 8th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.] Geomorphology: T07 is located on a raised peat bog. Topography is relatively flat and vegetated and the area was inaccessible in 2023 due to excessive surface flooding. Peat: The peat depth at T07 is 1.57m and slope angle of 6.48 degrees. Instability evidences: No.

Table J-7: Site reconnaissance of the turbine 7 site (T07)







Peat geo-investigation Imagery NW Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound _____ 2.00 - 3.00 Peat Repository Area 3.00 - 4.00 - Construction Compound 4.00 - 5.00 — Turbine_foundations 5.00 - 6.00 — 110kV Grid Connection > 6.00 - Amenity Carpark - Internal Access Road Site Boundary W Description NW NE © 17°N (T) ● 53°39'57"N, 7°55'3"W ±36ft ▲ 140ft Date of the satellite images: March 2022. [Maxar/Esri]. Date of the ground-based pictures: 10th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.] Geomorphology: T08 is located on a raised peat bog. Topography is relatively flat and vegetated. **Peat**: The peat depth at T08 is 0.7m and slope angle of 7.17 degrees. Instability evidences: No. 10 Nov 2023, 10:48:24

Table J-8: Site reconnaissance of the turbine 8 site (T08)







Table J-9: Site reconnaissance of the turbine 9 site (T09)







Table J-10: Site reconnaissance of the turbine 10 site (T10)







Table J-11: Site reconnaissance of the turbine 11 site (T11)







Imagery Peat geo-investigation Ø NE Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound 2.00 - 3.00 Peat Repository Area 3.00 - 4.00 - Construction Compound 4.00 - 5.00 — Turbine_foundations 5.00 - 6.00 110kV Grid Connection > 6.00 - Amenity Carpark - Internal Access Road Site Boundary SW Description © 167°S (T) ● 53°38'11"N, 7°52'1"W ±23346ft ▲ 165ft Date of the satellite images: March 2022. [Maxar/Esri]. Date of the ground-based pictures: 9th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.] **Geomorphology**: T12 is located on a raised peat bog. Topography is relatively flat and vegetated. Localised ponding of surface water on top of peat. **Peat**: The peat depth at T12 is 0.29m and slope angle of 5.95 degrees. 19 Nov 2023 15 Instability evidences: No.

Table J-12: Site reconnaissance of the turbine 12 site (T12)







Table J-13: Site reconnaissance of the turbine 13 site (T13)







Table J-14: Site reconnaissance of the turbine 14 site (T14)







Table J-15: Site reconnaissance of the turbine 15 site (T15) Peat geo-investigation Imagery Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound 2.00 - 3.00 - Peat Repository Area 3.00 - 4.00 — Construction Compound 4.00 - 5.00 — Turbine_foundations 5.00 - 6.00 — 110kV Grid Connection > 6.00 Amenity Carpark - Internal Access Road Site Boundary NW SW W Ν Description 210 240 270 3**0** 330 0 30 30 30 30 30 © 301°NW (T) ● 53°38'18"N, 7°54'30"W ±13ft ▲ 146ft Date of the satellite images: March 2022. [Maxar/Esri]. Date of the ground-based pictures: 9th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.] **Geomorphology**: T15 is located on a raised peat bog. Topography is relatively flat with sparse vegetation. Significant amount of surface water at this location.

09 Nov 2023, 12:29:50

Peat: The peat depth at T15 is 0.86m and slope angle of 2.56 degrees.

Instability evidences: No.









Peat geo-investigation Imagery Е 150 Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 ____ Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound 2.00 - 3.00 - Peat Repository Area 3.00 - 4.00 — Construction Compound 4.00 - 5.00 Turbine_foundations 5.00 - 6.00 110kV Grid Connection > 6.00 - Amenity Carpark - Internal Access Road Site Boundary Description W NW Ν © 332°NW (T) ● 53°37'46"N, 7°52'34"W ±16ft ▲ 171ft Date of the satellite images: March 2022. [Maxar/Esri]. Date of the ground-based pictures: 9th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.] **Geomorphology**: T16 is located on a raised peat bog.

Table J-16: Site reconnaissance of the turbine 16 site (T16)

Topography is relatively flat and vegetated. Some localised ponding of surface water.

Peat: The peat depth at T16 is 1.79m and slope angle of 5.21 degrees.

Instability evidences: No.











Table J-17: Site reconnaissance of the turbine 17 site (T17)







Table J-18: Site reconnaissance of the turbine 18 site (T18)







Table J-19:Site reconnaissance of the turbine 19 site (T19)







Table J-20: Site reconnaissance of the turbine 20 site (T20)







Peat geo-investigation Imagery S Shared legend Legend Interpolated peat depths (m) Turbine Locations <= 0.50 Substation Telecom Tower 0.50 - 1.00 Borrow Pit Locations 1.00 - 2.00 Battery Storage Compound 2.00 - 3.00 - Peat Repository Area 3.00 - 4.00 ---- Construction Compound 4.00 - 5.00 - Turbine_foundations 5.00 - 6.00 110kV Grid Connection > 6.00 Amenity Carpark Internal Access Road Site Boundary

Description

Date of the satellite images: March 2022. [Maxar/Esri].

Date of the ground-based pictures: 9th November 2023 [GDG] and February 2021 [Irish Drlling Ltd.]

Geomorphology: T21 is located on a raised peat bog. Topography is relatively flat and moderately to heavily vegetated. Localised ponding of surface water.

Peat: The peat depth at T21 is 0.37m and slope angle of 5.03 degrees.

Instability evidences: No.







Table J-21: Site reconnaissance of the turbine 21 site (T21)







Table J-22: Site reconnaissance of the turbine 22 site (T22)





Appendix K FACTOR OF SAFETY

				Undrained shear	Bulk unit weight				Factor of Safety with	
Proposed infrastructure	Slope	Cos Slope	Sin Slope	strength	of Peat	Peat depth	Factor of Safety	Surcharge	Surcharge	Slope
	(º)		5	Cu (kPa)	Y (kN/m³)	(m)		(m)		Rad
T01	5.04	0.996	0.088	5	10	0.62	9.28	1	3.54	0.08790
T02	5.51	0.995	0.096	5	10	0.32	16.56	1	3.98	0.096175
T03	4.90	0.996	0.085	5	10	0.71	8.24	1	3.43	0.08553
T04	7.35	0.992	0.128	5	10	1.28	3.09	1	1.73	0.128203
T05	6.30	0.994	0.110	5	10	1.83	2.50	1	1.62	0.10995
T06	5.81	0.995	0.101	5	10	1.82	2.72	1	1.76	0.10137:
T07	6.48	0.994	0.113	5	10	1.64	2.73	1	1.69	0.11310
т08	7.17	0.992	0.125	5	10	0.42	9.65	1	2.85	0.12514
T09	4.85	0.996	0.084	5	10	0.54	10.92	1	3.85	0.08459
T10	5.89	0.995	0.103	5	10	0.21	23.37	1	4.05	0.10277
T11	3.66	0.998	0.064	5	10	1.24	6.31	1	3.50	0.06385
T12	5.95	0.995	0.104	5	10	0.74	6.54	1	2.78	0.103794
T13	3.94	0.998	0.069	5	10	1.10	6.63	1	3.47	0.06883
T14	4.01	0.998	0.070	5	10	0.60	11.99	1	4.49	0.06995
T15	2.56	0.999	0.045	5	10	1.44	7.79	1	4.59	0.04473
T16	5.21	0.996	0.091	5	10	1.23	4.49	1	2.48	0.09089
T17	4.57	0.997	0.080	5	10	0.77	8.20	1	3.56	0.07973
T18	3.10	0.999	0.054	5	10	3.06	3.03	1	2.28	0.05404
T19	4.65	0.997	0.081	5	10	0.93	6.65	1	3.20	0.08116
T20	6.48	0.994	0.113	5	10	1.29	3.46	1	1.95	0.11313
T21	3.06	0.999	0.053	5	10	0.50	18.92	1	6.27	0.0533
T22	5.03	0.996	0.088	5	10	1.67	3.42	1	2.14	0.08774
Substation	8.85	0.988	0.154	5	10	1.7	1.93	1	1.22	0.15446
Battery Storage Compound	7.90	0.991	0.137	5	10	0.9	4.08	1	1.93	0.13788
Peat Deposition Area	4.90	0.996	0.085	5	10	0.7	8.39	1	3.46	0.08552
Temporary Peat Deposition										
Area	5.40	0.996	0.094	5	10	0.6	8.89	1	3.34	0.09424
Construction Compound 1	4.71	0.997	0.082	5	10	2.5	2.43	1	1.74	0.0821
Construction Compound 2	3.83	0.998	0.067	5	10	1.8	4.16	1	2.68	0.06681
Construction Compound 3	6.85	0.993	0.119	5	10	1.9	2.17	1	1.43	0.11955
Construction Compound 4	6.53	0.994	0.114	5	10	2.1	2.15	1	1.45	0.113894
Security Cabin 1	4.71	0.997	0.082	5	10	2.5	2.43	1	1.74	0.08218
Security Cabin 2	3.83	0.998	0.067	5	10	1.8	4.16	1	2.68	0.06681
Security Cabin 3	6.85	0.993	0.119	5	10	1.9	2.17	1	1.43	0.11955
Security Cabin 4	6.53	0.994	0.114	5	10	2.1	2.15	1	1.45	0.11389
BP01	5.53	0.995	0.096	5	10	0.82	6.36	1	2.86	0.09651
BP02	4.64	0.997	0.081	5	10	0.45	13.78	1	4.28	0.080983
BP03	5.19	0.996	0.090	5	10	0.91	6.10	1	2.91	0.09058
BP04	4.00	0.998	0.070	5	10	0.6	11.98	1	4.49	0.06981

Table K-1: Calculation of factor of safety for undrained conditions (with and without surcharge)

Undrained conditions

$$F = \frac{c_u}{\gamma z \sin \alpha \cos \alpha}$$

Where,

F = Factor of Safety

c_v = Undrained strength

γ = Bulk unit weight of material

z = Depth to failure plane assumed as depth of peat

 α = Slope angle

*green indicates FoS \geq 1.3, yellow indicates 1 \leq FoS <1.3




	Drained	Bulk unit		Bulk unit	Height of water						5		Surcha	
Proposed infrastructure	shear	Peat	Peat depth	weight of water	failure surface	Slope	Cos Slope	Cos ² Slope	Sin Slope	φ'	Tan φ'	FoS	(m)	FoS
	Cu (kPa)	Y (kN/m ³)	(m)	Y (kN/m ³)	(m)	(2)	-							
T1	4	10	0.62	9.8	0.62	5.04	0.996	0.992	0.088	25	0.466	7.53	1	6.14
T2	4	10	0.32	9.8	0.32	5.51	0.995	0.991	0.096	25	0.466	13.34	1	6.88
Т3	4	10	0.71	9.8	0.71	4.90	0.996	0.993	0.085	25	0.466	6.70	1	5.96
T4	4	10	1.28	9.8	1.28	7.35	0.992	0.984	0.128	25	0.466	2.54	1	3.02
T5	4	10	1.83	9.8	1.83	6.30	0.994	0.988	0.110	25	0.466	2.08	1	2.84
T6	4	10	1.82	9.8	1.82	5.81	0.995	0.990	0.101	25	0.466	2.27	1	3.09
T7	4	10	1.64	9.8	1.64	6.48	0.994	0.987	0.113	25	0.466	2.26	1	2.96
T8	4	10	0.42	9.8	0.42	7.17	0.992	0.984	0.125	25	0.466	7.79	1	4.91
Т9	4	10	0.54	9.8	0.54	4.85	0.996	0.993	0.084	25	0.466	8.84	1	6.68
T10	4	10	0.21	9.8	0.21	5.89	0.995	0.989	0.103	25	0.466	18.79	1	6.99
T11	4	10	1.24	9.8	1.24	3.66	0.998	0.996	0.064	25	0.466	5.20	1	6.13
T12	4	10	0.74	9.8	0.74	5.95	0.995	0.989	0.104	25	0.466	5.32	1	4.83
T13	4	10	1.10	9.8	1.10	3.94	0.998	0.995	0.069	25	0.466	5.44	1	6.07
T14	4	10	0.60	9.8	0.60	4.01	0.998	0.995	0.070	25	0.466	9.73	1	7.80
T15	4	10	1.44	9.8	1.44	2.56	0.999	0.998	0.045	25	0.466	6.44	1	8.08
T16	4	10	1.23	9.8	1.23	5.21	0.996	0.992	0.091	25	0.466	3.69	1	4.33
T17	4	10	0.77	9.8	0.77	4.57	0.997	0.994	0.080	25	0.466	6.68	1	6.20
T18	4	10	3.06	9.8	3.06	3.10	0.999	0.997	0.054	25	0.466	2.60	1	4.08
T19	4	10	0.93	9.8	0.93	4.65	0.997	0.993	0.081	25	0.466	5.43	1	5.59
T20	4	10	1.29	9.8	1.29	6.48	0.994	0.987	0.113	25	0.466	2.85	1	3.40
T21	4	10	0.50	9.8	0.50	3.06	0.999	0.997	0.053	25	0.466	15.31	1	10.91
T22	4	10	1.67	9.8	1.67	5.03	0.996	0.992	0.088	25	0.466	2.84	1	3.76
Substation	4	10	1.7	9.8	1.70	8.85	0.988	0.976	0.154	25	0.466	1.61	1	2.12
Battery Storage Compound	4	10	0.9	9.8	0.90	7.90	0.991	0.981	0.137	25	0.466	3.33	1	3.35
Peat Deposition Area	4	10	0.7	9.8	0.70	4.90	0.996	0.993	0.085	25	0.466	6.82	1	6.01
Temporary Peat Deposition														
Area	4	10	0.6	9.8	0.60	5.40	0.996	0.991	0.094	25	0.466	7.21	1	5.79
Construction Compound 1	4	10	2.516398629	9.8	2.52	4.71	0.997	0.993	0.082	25	0.466	2.06	1	3.08
Construction Compound 2	4	10	1.803458228	9.8	1.80	3.83	0.998	0.996	0.067	25	0.466	3.47	1	4.72
Construction Compound 3	4	10	1.946663595	9.8	1.95	6.85	0.993	0.986	0.119	25	0.466	1.81	1	2.51
Construction Compound 4	4	10	2.0634811	9.8	2.06	6.53	0.994	0.987	0.114	25	0.466	1.80	1	2.54
Security Cabin 1	4	10	2.516398629	9.8	2.52	4.71	0.997	0.993	0.082	25	0.466	2.06	1	3.08
Security Cabin 2	4	10	1.803458228	9.8	1.80	3.83	0.998	0.996	0.067	25	0.466	3.47	1	4.72
Security Cabin 3	4	10	1.946663595	9.8	1.95	6.85	0.993	0.986	0.119	25	0.466	1.81	1	2.51
Security Cabin 4	4	10	2.0634811	9.8	2.06	6.53	0.994	0.987	0.114	25	0.466	1.80	1	2.54
BP01	4	10	0.82	9.8	0.82	5.53	0.995	0.991	0.096	25	0.466	5.18	1	4.98
BP02	4	10	0.45	9.8	0.45	4.64	0.997	0.993	0.081	25	0.466	11.14	1	7.42
BP03	4	10	0.91	9.8	0.91	5.19	0.996	0.992	0.090	25	0.466	4.98	1	5.06
BP04	4	10	0.6	9.8	0.60	4.00	0.998	0.995	0.070	25	0.466	9.71	1	7.81

Table K-2: Calculation of factor of safety for drained conditions (with and without surcharge)

 $F = \frac{c' + (\gamma z - \gamma_w h_w) \cos^2 \alpha \tan \phi'}{\gamma z \sin \alpha \cos \alpha}$

Drained conditions

Where,

- F = Factor of Safety
- c' = Effective cohesion
- γ = Bulk unit weight of material
- z = Depth to failure plane assumed as depth of peat
- γ_w = Unit weight of water
- h_w = Height of water table above failure plane
- α = Slope angle
- ϕ' = Effective friction angle











	500	1,00	00 m	
ctor o	f Saftey Undrai	ned Co	onditio	ons
f: 222	268-GDG-SL-02	1 (Maj	o 1 of	3)
ate	Remarks	Drawn	Checked	Approved
ate 2/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
Date 2/2023 1/2024	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved JOD AL
Date 2/2023 1/2024 2/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked SC CE CE	Approved JOD AL AL
ate 2/2023 1/2024 2/2025 4/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE CE	Approved JOD AL AL AL





Figure K-2: FoS for Undrained Conditions (Map 2 of 3)



- Proposed Wind Farm Site Boundary ▲ Turbine Locations Crane Hardstanding - 110kV Grid Connection - Battery Storage EBOP (Electrial Balance of Plant) Compound Passing Bay Amenity Track Construction Compound Internal Access Road Peat Deposition Area Temporary Peat Deposition Area Substation Telecom Tower Peat Factor of Saftey- Undrained Conditions



Bord na Móna

	500	1,0	00 m (
actor o	f Saftey Undrai	ned Co	onditio	ons
Ref: 222	268-GDG-SL-02	1 (Maj	o 2 of	3)
Date 9/12/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
5/11/2024	Revision based on Client Comments	SRG	CE	AL.
5/02/2025	Revision based on Client Comments	SRG	CE	AL.
4/04/2025	Revision based on Client Comments	SRG	CE	AL.
Datum RENET95	Transverse Mercator	Sc	ale:1:18,0	00





Figure K-3: FoS for Undrained Conditions (Map 3 of 3)



	500	1,00	00 m (N
			5	
actor o	f Saftey Undraii	ned Co	onditio	ons
Ref: 222	268-GDG-SL-02	1 (Maj	o 3 of	3)
/12/2023	First Issue	KG	SC	JOD
6/11/2024	Revision based on Client	SRG	CE	1930
/02/2025	Comments			AL
	Revision based on Client Comments	SRG	CE	AL
4/04/2025	Revision based on Client Comments Revision based on Client Comments	SRG SRG	CE CE	AL AL AL





Figure K-4: FoS for Undrained Conditions with Surcharge (Map 1 of 3)



	500	1,0	00 m	
			5	
or of S	Surcharge	d Con	ditions	s with
Date	Remarks	Drawn	Checked	Approved
12/2023	First Issue	KG	SC	JOD
11/2024		10000	2243.5	
	Revision based on Client Comments	SRG	CE	AL
02/2025	Revision based on Client Comments Revision based on Client Comments	SRG SRG	CE CE	AL AL
02/2025	Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	SRG SRG SRG	CE CE CE	AL AL AL





Figure K-5: FoS for Undrained Conditions with Surcharge (Map 2 of 3)



- Proposed Wind Farm Site Boundary
- Turbine Locations
 - Crane Hardstanding
- 110kV Grid Connection
- Battery Storage EBOP (Electrial
- Balance of Plant) Compound
- Passing Bay
- Amenity Track
- Construction Compound
- Internal Access Road - Peat Deposition Area
- Temporary Peat Deposition Area
- Substation Telecom Tower
- Borrow pit
- Met Mast
- Peat Factor of Safety- Undrained Conditions





Bord na Móna



Peat Factor of Saftey Undrained Conditions with Surcharge

Map Ref: 22268-GDG-SL-022 (Map 2 of 3)

Date	Remarks	Drawn	Checked	Approved
19/12/2023	First Issue	KG	SC	300
26/11/2024	Revision based on Client Comments	SRG	CE	AL
25/02/2025	Revision based on Client Comments	SRG	CE	AL
14/04/2025	Revision based on Client Comments	SRG	CE	AL
Datum IRENET95	Transverse Mercator	Sc	ale:1:18,0	00





Figure K-6: FoS for Undrained Conditions with Surcharge (Map 3 of 3)



Date	Remarks	Drawn	Checked	Approved
19/12/2023	First Issue	KG	SC	300
26/11/2024	Revision based on Client Comments	SRG	CE	AL
25/02/2025	Revision based on Client Comments	SRG	CE	AL
14/04/2025	Revision based on Client Comments	SRG	CE	AL
Datum IRENET95	Transverse Mercator	Sc	ale:1:18,0	00





Figure K-7: FoS for Drained Conditions (Map 1 of 3)





	500	1,00	00 m 00	
actor	of Saftey Drain	ed Cor	nditior	ns
ef: 222	268-GDG-SI -02	3 (Mar	1 of	3)
Date	Remarks	Drawn	Checked	Approved
Date 2/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
Date 2/2023 1/2024	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved JOD AL
Date 1/2023 1/2024 02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked SC CE CE	Approved JOD AL AL
Date 12/2023 1/2024 02/2025 04/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE	Approved JOD AL AL AL





Figure K-8 : FoS for Drained Conditions (Map 2 of 3)



	500	1,00	00 m (Â			
t Factor of Saftey Drained Conditions Ref: 22268-GDG-SL-023 (Map 2 of 3)							
Ref: 222	268-GDG-SL-02	3 (Maj	Checked	3) Approved			
Date 19/12/2023	268-GDG-SL-02 Remarks First Issue	3 (Maj Drawn KG	Checked SC	Approved			
Date 19/12/2023 26/11/2024	268-GDG-SL-02 Remarks First Issue Revision based on Client Comments	3 (Maj Drawn KG SRG	Checked SC CE	Approved JOD AL			
Ref: 222 Date 19/12/2023 26/11/2024 25/02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	3 (Maj Drawn KG SRG SRG	Checked SC CE CE	3) Approved JOD AL AL			
Date 19/12/2023 26/11/2024 25/02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	3 (Ma) Drawn KG SRG SRG SRG	Checked SC CE CE CE CE	Approved JOD AL AL AL			





Figure K-9: FoS for Drained Conditions (Map 3 of 3)







Figure K-10: FoS for Drained Conditions with Surcharge (Map 1 of 3)



	500	1,00	00 m	
ctor of	Saftey Drained Surcharge	Condi	tions	with
ef: 222	268-GDG-SL-02	4 (Mai	o 1 of	3)
Date	Remarks	Drawn	Checked	Approved
Date 12/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
Date /12/2023 /11/2024	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved 30D AL
Date /12/2023 /11/2024 /02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked SC CE CE	Approved 30D AL AL
Date 12/2023 11/2024 02/2025 /04/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE	Approved 30D AL AL AL





Figure K-11: FoS for Drained Conditions with Surcharge (Map 2 of 3)

	500	1,00	00 m (
ctor of	Saftey Drained Surcharge	Condi	tions	with
ef: 222	268-GDG-SL-024	4 (Maj	o 2 of	3)
	Pamarks	Drawn)	Charlend	Annual
12/2023	Remarks First Issue	KG	Checked SC	Approved 30D
12/2023	Remarks First Issue Revision based on Client Comments	Drawn KG SRG	Checked SC CE	Approved 30D AL
12/2023 11/2024 02/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG	Checked SC CE CE	Approved JOD AL AL
12/2023 11/2024 02/2025 /04/2025	Remarks First Issue Revision based on Client Comments Revision based on Client Comments Revision based on Client Comments	Drawn KG SRG SRG SRG	Checked SC CE CE CE	Approved 300 AL AL AL

Figure K-12: FoS for Drained Conditions with Surcharge (Map 3 of 3)

Proposed Wind Farm Site Boundary A Turbine Locations - Crane Hardstanding Passing Bay Amenity Track - Construction Compound Internal Access Road - Borrow pit Met Mast Peat Factor of Safety - Drained Conditions G T GAVIN & DOHERTY GEOSOLUTIONS Bord na Móna

	500	1,0	00 m	
actor of	Saftey Drained Surcharge	Cond	itions	with
Ref: 222	268-GDG-SL-02	4 (Maj	p 3 of	3)
Date 19/12/2023	Remarks First Issue	Drawn KG	Checked SC	Approved JOD
26/11/2024	Revision based on Client Comments	SRG	CE	AL
	Designer based on Cloub	-		

25/02/2025	Revision based on Client Comments	SRG	CE	AL
14/04/2025	Revision based on Client Comments	SRG	CE	AL.
Datum IRENET95	Transverse Mercator	Sca	le:1:18,0	00

Appendix L PEAT STABILITY RISK CALCULATION

Peat Stability Risk Assessment (PSRA) for Derryadd Wind Farm GDG | Derryadd Wind Farm | 22268-PSRA-001-01

GLOBAL PROJECT REACH

Offices

Dublin (Head Office)

Gavin & Doherty Geosolutions Unit A2, Nutgrove Office Park Rathfarnham Dublin 14, D14 X627 Phone: +353 1 207 1000

Belfast

Gavin & Doherty Geosolutions (UK) Limited Scottish Provident Building 7 Donegall Square West Belfast, BT1 6JH

Edinburgh

Gavin & Doherty Geosolutions (UK) Limited 21 Young Street Edinburgh Scotland, EH2 4HU

Rhode Island

Gavin & Doherty Geosolutions Inc. 225 Dyer St, 2nd Floor Providence, RI 02903 USA

Bath

Gavin & Doherty Geosolutions (UK) Limited The Guild High Street, Bath Somerset BA1 5EB

Cork

Gavin & Doherty Geosolutions Unit 4E, Northpoint House, North Point Business Park Cork, T23 AT2P

London

Gavin & Doherty Geosolutions (UK) Limited 85 Great Portland Street, First Floor London W1W 7LT

Utrecht

Gavin & Doherty Geosolutions WTC Utrecht, Stadsplateau 7 3521 AZ Utrecht The Netherlands

Website: <u>www.gdgeo.com</u> Email: <u>info@gdgeo.com</u>

GAVIN 8	DOHERTY

TOBIN

Peat Stability Risk Assessment (PSRA)

Derryadd Wind Farm

Location: Turbine 01 (T01) Conditions: Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS) 8th-10th November 2023 Inspected on: BMc and MD Inspected by: KG/CE Completed by: 10/03/2025 Date:

Value Rating criteria Hazard factors Rating value Weighting Score Comment U US D DS 0 1 2 3 9.0 7.5 3.5 3.5 Factor of Safety -≥ 1.3 1.3 - 1.0 ≤ 1.0 1 10 10 Peat depth ~0.26m slope angle of 5.04 0 NA NA 5 - 10 0 2 Distance to previous slides (km) < 5 On site No previous slides within 10km Slide history Evidence of peat movement (e.g. tension NA 2 0 NA Yes 0 No evidence of peat movement. -cracks, step features, compression features). Gravel / Firm glacial Nearest TP (TP-AR16, IDL 2021 GI) : Very soft moist grey organic Soft sensitive clay Subsoil type NA Smooth rock Soft sensitive clay 3 1 3 silty CLAY with many rootlets. till Subsoil conditions (visible in trial pits) Peat fibres across transition to subsoil No NA No 0 1 0 Not recorded inTPs Yes Partially Extremely wet / Dry / Stands well Peat wetness Dry / Stands well NA Slowly squeezing 2 2 1 Trial Pit dry on excavation Undiggable NA NA 0 0 1 Flat topography. General curvature downslope Planar Convex Distance to the convexity break NA NA > 100 m 50 - 100 m < 50 m 0 1 0 Flat topography. Topography (only if previous factor is Convex) Slope aspect NA NA SW, S, SE 0 0 W, E NW, N, NE 1 Flat topography. (for high latitudes in northern hemisphere) Secondary factors > 300 NA > 300 200 - 300 < 200 1 1 1 Greater than 300m from watercourse. Distance from watercourse (m) Surface moisture index (NDMI) NA NA 0 - 96 96 -135 135 - 174 0 1 0 Information unavailable Surface water Localised NA Ponded in drains 1 1 Localised 1 Localised ponding of surface water adjacent to site Springs (water table level indicator) NA Evidence of piping (subsurface flow) NA Yes 0 1 0 Hydrology No evidence of piping. --Significant surface desiccation NA NA Yes 0 1.5 0 No evidence of significant dessication. --(previous summer was dry?) Varied / Oblique NA 2 2 Existing drainage ditches Varied / Oblique 1 Flat topography, but drains perpendicular to contours. Down slope Across slope < 1000 mm/yr Annual rainfall < 1000 mm/yr NA 1 1000 - 1400 mm/yr > 1400 mm/yr 1 1 Bush Dry heather NA Dry heather Grassland Wetlands 1 1 1 Vegetation Forestry 1.5 Good growth NA Fair Stunted growth 1 1.5 Good growth (if applicable) NA 2 2 Cutaway / Turbary Cutaway / Turbary 1 In very close proximity to historic peat extraction Peat cuts presence Machine cut -Peat workings 0 Peat cuts vs contour lines NA NA Perpendicular Parallel 0 1 Relatively flat topography

Oblique

E	xisting loads	Roads	NA	N	A Solid	-	Floating	0	1	0		
т	ime of year for const	truction	Late Sum Autun	mer, N	A Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate	
									Hazard _{total}	27.5		
					н	lazard						
					0.0 - 0.3	Negligible			Max. possible	99		
					0.3 - 0.5	Low						
					0.5 - 0.7	Medium			Hazard ₀₋₁	0.28		
					0.7 - 1.0	High					_	
							•					
	6		Mala			Rating criteria		Bating under		6		t
	Co	insequence factors	valu		1	2	3	Rating value	weighting	Score	· · · · · · · · · · · · · · · · · · ·	Lomment
Volume of (function	of potential peat flow of distance from neare	v est watercourse and peat depth	in the area)	I N	A Small	Medium	Large	1	3	3	Peat depth ~0.26m slop	e angle of 5.04
Downslop	pe hydrology feature	25	Bowl / con	tained N	A Bowl / contained	Minor undefined watercourse	Valley	1	1	1	Flat slopes and far from	watercourses
Proximity	y from defined valley	/ (m)	> 500) N	A > 500	200 - 500	< 200	1	1	1		
Downhill	slope angle		Horizor	ital N	A Horizontal	Intermediate	Steep	1	1	1	Relatively flat topograph	ıy
Downstre	eam aquatic environr	ment	Sensiti	ve N	A Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream e	nvironments sensitive.
Public ro	ads in potential peat	: flow path	Regional	road N	A Minor road	Local road	Regional road	3	1	3	N63 ~800m to the south	1
Overhead	d lines in potential pe	eat flow path	Electric (MV, H	ity N V)	A Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3		
Buildings	in potential peat flo	ow path	Dwelli	ng N	A Farm out-houses	-	Dwelling	3	1	3	Bord Na Mona Building	~900m to the south
Capabilit	y to respond (access	and resources)	Good	I N	A Good	Fair	Poor	1	1	1	N63 ~800m to the south	1
							1	Co	nsequences _{total}	18		
					Cons	equences						
					0.0 - 0.3	Negligible			Max. possible	33		
					0.3 - 0.5	Low					-	
					0.5 - 0.7	Medium		Consequ	ences ₀₋₁	0.55		
					0.7 - 1.0	High						
						Risk	rating					
	R	lisk			Action required	ł						
	0.00 - 0.20	Negligible	Normal site investigation						Risk rating =	Hazard *	* Consequences	
	0.20 - 0.40	Low	Targeted site investigation construction.	, design of s	pecific mitigation mea	sures. Part time supervis	ion during		Risk rating =	0.28	0.55 =	0.15
	0.40 - 0.60	Medium	Avoid construction in the a mitigation measures. Full t	irea if possi ime superv	ble. If unavoidable, det ision during construction	ailed site investigation a on.	nd design of specific					
	0.60 - 1.00	High	Avoid construction in this	area.								

Derryadd Wind Farm

Location:Turbine 02 (T02)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

		Hazard factors		Value	0	1	Rating criteria	2	Rating value	Weighting	Score	Comment
Factor	of Safety			6.6 6.6 6.6 7 3.3 7 7 7 6.6	-	1 ≥ 1.3	1.3 - 1.0	3 ≤ 1.0	1	10	10	Peat depth: ~0.37m. Slope angle: 5.51º.
	,	Distance to previous slides (ki	m)		NΔ	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step	NA		5-10	-	Vec	0	2	0	No evidence of next movement
		features, compression features).				-		165	0	2		
	Subsoil conditions	Subsoil type		Gravel / Firm glacial till	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest (TP353): Stiff damp brownish grey slightly sandy silty very gravelly CLAY with medium cobble content and low boulder content.
		Peat fibres across transition t	o subsoil	No	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Stands well	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	Trial Pit dry on excavation
		General curvature downslope	2	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity bre (only if previous factor is Convex)	ak	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
		Slope aspect (for high latitudes in northern hemis	sphere)	NA	NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
tors		Distance from watercourse (r	n)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
ary fac		Surface moisture index (NDM	11)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
econd		Surface water (water table level indicator)		Localised	NA	Localised	Ponded in drains	Springs	1	1	1	Localised ponding of surface water adjacent to site
S	Hydrology	Evidence of piping (subsurfac	e flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)	n	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
		Bush		Grassland	NA	Dry heather	Grassland	Wetlands	2	1	2	
	Vegetation	Forestry (if applicable)		Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence		Cutaway / Turbary	NA	-	Cutaway / Turbary	Machine cut	2	1	2	In very close proximity to historic peat
	Peat workings	Peat cuts vs contour lines		NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		NA	NA	Solid	-	Floating	0	1	0	
	Time of year for cor	I		Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
				Autumi			·			Hazard _{total}	26.5	
						На: 0.0 - 0.3	zard Negligible			Max. possible	99	
						0.3 - 0.5	Low			Hazard	0.27	1
						0.7 - 1.0	High			110-01 0 0-1	0.27	1
		Consequence factors		Value			Rating criteria		Rating value	Weighting	Score	Comment
Volum	e of potential peat flo			Cmall	0	1	2	3				Deet deether? 27m Class englis 5 510
(functi	on of distance from nea	arest watercourse and peat depth	i in the area)	Small	NA	Small	Medium Minor undefined	Large	1	3	3	Peat depth: ~0.37m. Slope angle: 5.51º.
Downs	slope hydrology featu	res		Bowl / contained	NA	Bowl / contained	watercourse	Valley	1	1	1	Greater than 300m from watercourse.
Proxin	hity from defined vall	ey (m)		> 500	NA	> 500	200 - 500	< 200	1	1	1	Flat topography.
Down	nill slope angle			Horizontal	NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream environments
Downs	stream aquatic enviro	onment		Sensitive	NA	Non-sensitive	Sensitive	supply	2	1	2	sensitive.
Public	roads in potential pe	at flow path		NA Electricity	NA	Minor road	Local road Electricity	Regional road Electricity	0	1	0	
Overh	ead lines in potential	peat flow path		(MV, HV)	NA	Phone lines	(LV)	(MV, HV)	3	1	3	
Buildir	ngs in potential peat f	low path		Dwelling	NA	Farm out-houses	-	Dwelling	3	1	3	Bord Na Mona Building ~1.5m to the south
Capab	ility to respond (acce	ss and resources)		Good	NA	Good	Fair	Poor		1	1	
						Consec	quences]		total	15	
						0.0 - 0.3	Negligible Low			Max. possible	33	
						0.5 - 0.7	Medium		Consequ	iences ₀₋₁	0.45]
						0.7 - 1.0	High					
							Risk rating					
		Pick				Action required			1			
\vdash	0 00 - 0 20	Nagligibla	Normal site investigati	on		Action required			1	Rick rating -	*	Consequences
	0.00 - 0.20	исвівіріе	investigati						-	הופע ומנוווא =	Hazard *	
	0.20 - 0.40	Low	Targeted site investiga	tion, design of specif	fic miti	gation measures. Part	time supervision durin	ng construction.		Risk rating =	0.27	0.45 = 0.12
	0.40 - 0.60	Medium	Avoid construction in t mitigation measures. F	he area if possible. If full time supervision	r unavo during	construction.	vestigation and design	n of specific				
	0.60 - 1.00	High	Avoid construction in t	his area.								

6						Location:	Turbine 03 (T03)					
GAN	VIN & DOHERTY EOSOLUTIONS	Peat Stability Risk Ass	sessment (PSRA)			Conditions:	Undrained (U), undra 8th-10th November 2	ained surcharge (US),	drained (D), dra	ained surcharge	(DS)	
L						Inspected by:	BMc and MD	-025				
C		Derryadd Wind Farm				Completed by:	KG/CE					
						Date:	10/03/2025					
				Value			Rating criteria					
		Hazard factors		U US D DS	0	1	2	3	- Rating value	Weighting	Score	Comment
Factor	of Safety			8.2 3.40 6.7 6.0	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.53 m. Slope angle: 4.9º.
		Distance to previous slid	les (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat moven	nent (e.g. tension cracks,	NA	ΝΑ	<u>-</u>		Yes	0	2	0	No evidence of peat movement.
		step features, compression fe	eatures).							-		
		Subsoil type		Soft sensitive clay	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP341) records: Very soft moist grey slightly gravelly SILT with low cobble content. Gravel is subangular to subrounded fine to coarse
	Subsoil conditions			,								of limestone and sandstone.
		Peat fibres across transi	tion to subsoil	NA	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Stands	NA	Dry / Stands well	Slowly squeezing	Extremely wet /	1	2	2	Trial pit dry during excavation
				well			Black	Undiggable	-	-	-	
		General curvature down	islope	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	(only if previous factor is Con	ivex)	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
		Slope aspect (for high latitudes in norther	n hemisphere)	NA	NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
ctors		Distance from watercou	rse (m)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
ary fao		Surface moisture index ((NDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
conda		Surface water		Ponded in drains	ΝΑ	Localised	Ponded in drains	Springs	2	1	2	Water ponded in existing land drains
Sec		(water table level indicator)						Shings	2		2	
	Hydrology	Evidence of piping (subs	urface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		(previous summer was dry?)	cation	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches	S	Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
		Bush		Grassland	NA	Dry heather	Grassland	Wetlands	2	1	2	
	Vegetation	Forestry		Cood growth		, Cood growth	Fair	Stunted growth	1	1 г	1 5	
		(if applicable)		Cutaway /	NA		rdii		1	1.5	1.5	In very close proximity to historic peat
	Peat workings	Peat cuts presence		Turbary	NA	-	Cutaway / Turbary	Machine cut	2	1	2	extraction
		Peat cuts vs contour line	25	NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		NA	NA	Solid	-	Floating	0	1	0	
	Time of year for con	struction		Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
				Addami	1	· · · · · · · · · · · · · · · · · · ·	Summer			Hazard _{total}	29.5	
						Ha:	zard	-		Max nossible	96	
						0.3 - 0.5	Low					
						0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.31	
								J				
	(Consequence factors		Value	0	1	Rating criteria	3	- Rating value	Weighting	Score	Comment
Volum	e of potential peat flo	ow.		Small	NA	Small	Medium	Large	1	3	3	Peat depth: ~0.53 m. Slope angle: 4.9º.
(functio	on of distance from nea	rest watercourse and peat	depth in the area)	Minor			Minor undefined		-			
Downs	lope hydrology featu	res		undefined	NA	Bowl / contained	watercourse	Valley	2		2	
Proxim	ity from defined valle	ey (m)		> 500	NA	> 500	200 - 500	< 200	1	1	1	
Downh	ill slope angle			Horizontal	NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downs	tream aquatic enviro	nment		Sensitive	NA	Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream environments sensitive.
Public	roads in potential pea	at flow path		NA	NA	Minor road	Local road	Regional road	0	1	0	
Overh	ead lines in potential	peat flow path		NA	NA	Phone lines	Electricity	Electricity	0	1	0	
ייידויים	as in notontial act "	ow path		NIA		Earm out have	(LV)	(MV, HV)	0	1		
Bullair	igs in potential pear n	low path		INA	NA	Farm out-nouses	-	Dweiling	0	1	0	
Capabi	lity to respond (acces	ss and resources)		Good	NA	Good	Fair	Poor	1	1	1	
						Consec	quences]	Co	nsequences _{total}	10	
						0.0 - 0.3	Negligible			Max. possible	33	
						0.3 - 0.5	Low		Consequ	iences of	0.30	1
						0.7 - 1.0	High			0-1	0.00	1
							Risk ratir	ng				
	D: 1					Action required						
	KISI	• •••••							1			
	0.00 - 0.20	Negligible	Normal site investigati	ion						Risk rating =	Hazard *	Consequences
	0.20 - 0.40	Low	Targeted site investiga	tion, design of spe	cific m	itigation measures. Pa	art time supervision du	uring construction.		Risk rating =	0.31	0.30 = 0.09
			Avoid construction in t	the area if nossible	. If upa	voidable, detailed site	investigation and des	sign of specific	1			
	0.40 - 0.60	Medium	mitigation measures. F	Full time supervision	on duri	ng construction.						
	0.60 - 1.00	High	Avoid construction in t	this area.								

					Location:	Turbine 04 (T04)					
GA	JDG	Peat Stability Risk Assessment (PSRA)			Conditions:	Undrained (U), undra	ined surcharge (US),	drained (D), dra	ined surcharge	(DS)	
G	EOSOLUTIONS				Inspected on:	8th-10th November 2 BMc and MD	023				
1	OBIN	Derryadd Wind Farm			Completed by:	KG/CE					
C	ONSULTING ENGINEERS				Date:	10/03/2025					
			•								
		Hazard factors	Value	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Factor	of Safety		8.10 6 1.70 6 2.50 6	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~01.25 m. Slope angle: 7.35º
		Distance to previous slides (km)		ΝΔ	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks,	NA	NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions	Subsoil type	Gravel / Firm glacial till	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP331) records: Damp blush grey very sandy very silty GRAVEL with medium cobble content and low boulder content.
	(visible in trial pits)	Peat fibres across transition to subsoil	No	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness	Dry / Stands well	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	Trial pit dry on excavation
		General curvature downslope	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity break	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
		Slope aspect	NA	NA	SW. S. SE	W.E	NW. N. NE	0	1	0	Flat topography.
ors		(for high latitudes in northern hemisphere)	> 200	NIA	> 200	200, 200	< 200	1	1	1	Greater than 200m from watercourse
ary facto		Surface moisture index (NDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
econd		Surface water	Ponded in drains	NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in
Š	Hvdrology	(water table level indicator) Evidence of piping (subsurface flow)	NA	NA	-	-	Yes	0	1	0	drains No evidence of piping.
		Significant surface desiccation	NA	NIA			Vos	0	- 1 5	0	No ovidence of significant dessignation
		(previous summer was dry?)		INA	-	-	res	0	1.5	0	Flat topography, but drains perpendicular
		Existing drainage ditches	Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	to contours.
		Annual rainfall	< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush	Wetlands	NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
	vegetation	Forestry (if applicable)	Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence	Cutaway /	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
	Peat workings	Peat cuts vs contour lines	NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads	NA	ΝΑ	Solid		Electing	0	1	0	
			Late Summer,	INA	5010	- Winter. Early	Late Summer.	0	1	0	
	Time of year for cor	istruction	Autumn	NA	Spring	Summer	Autumn	3	1	3	Worst case estimate
					На	zard			Hazaru _{total}	28.5	
					0.0 - 0.3	Negligible			Max. possible	99	
					0.5 - 0.7	Medium			Hazard ₀₋₁	0.29]
					0.7 - 1.0	High					
		Consequence factors	Value	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volum (functio	e of potential peat flo	DW prest watercourse and peat depth in the area)	Small	NA	Small	Medium	Large	1	3	3	Peat depth: ~01.25 m. Slope angle: 7.35 ^o
Down	slope hydrology featu	res	Minor	ΝΔ	Bowl / contained	Minor undefined	Valley	2	1	2	
Drovin	aity from defined value	ou (m)	undefined		> 500	watercourse	< 200	-	-	-	
Proxin	inty from defined value	ey (m)	> 500	INA	> 500	200 - 500	< 200	L	1	1	
Down	niii siope angle		Horizontal	NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Hat topography
Down	stream aquatic envirc	onment	Sensitive	NA	Non-sensitive	Sensitive	supply	2	1	2	sensitive.
Public	roads in potential pe	at flow path	NA	NA	Minor road	Local road	Regional road	0	1	0	
Overh	ead lines in potential	peat flow path	NA	NA	Phone lines	(LV)	(MV, HV)	0	1	0	
Buildir	ngs in potential peat f	low path	NA	NA	Farm out-houses	-	Dwelling	0	1	0	
Capab	ility to respond (acce	ss and resources)	Good	NA	Good	Fair	Poor	1	1	1	Access from N63
					Concer		1	Co	nsequences _{total}	10	
					0.0 - 0.3	Negligible			Max. possible	33	
					0.3 - 0.5 0.5 - 0.7	Medium		Consequ	ences ₀₋₁	0.30]
					0.7 - 1.0	High					
						Risk rating					
								1			
	Ris	к 			Action required						
	0.00 - 0.20	Negligible Normal site investigation	on						Risk rating =	Hazard *	Consequences
	0.20 - 0.40	Low Targeted site investiga	tion, design of spe	cific m	itigation measures. Pa	rt time supervision du	ring construction.		Risk rating =	0.29	0.30 = 0.09
	0.40 - 0.60	Medium Avoid construction in t mitigation measures. F	he area if possible. ull time supervisio	. If una n durii	voidable, detailed site	investigation and des	ign of specific		I		
	0.60 - 1.00	High Avoid construction in t	his area.								

					Location:	Turbine 05 (T05)					
GA		Peat Stability Risk Assessment (PSR	(A)		Conditions:	Undrained (U), undr	ained surcharge (US),	drained (D), dra	ained surcharge	(DS)	
G	EOSOLUTIONS				Inspected on:	8th-10th November 2	2023				
	ORIN	Derrvadd Wind Farm			Completed by:						
c	ONSULTING ENGINEERS				Date:	10/03/2025					
											_
		Usered forten	Value			Rating criteria		Bethermole	Malahdina	C	Gummant
		Hazard factors	U US D DS	0	1	2	3	- Rating value	Weighting	Score	Comment
Factor	of Safety		2.5 1.6 2.1 1.8	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~ 1.85m. Slope angle: 6.3 ^o .
		Distance to previous slides (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension of	cracks,				Mar				
		step features, compression features).	NA	NA	-	-	fes	0	2	0	No evidence of pear movement.
		Subsoil type	Soft sensitive clay	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP314) records: Soft damp grey organic silty CLAY withsome rootlets and plant materials underlain by very damp soft grey slightly sandy SILT.
	Subsoil conditions (visible in trial pits)										
		Peat fibres across transition to subsoil	No	ΝΑ	Ves	Partially	No	0	1	0	Not recorded inTPs
			Extremely wet /	11/1			Extremely wet /		-		TP unable to progress beyond 3.5mbgl due to
		Peat wetness	Undiggable	NA	Dry / Stands well	Slowly squeezing	Undiggable	3	2	6	ingress of water
		General curvature downslope	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity break	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
ctors		Slope aspect	ΝΑ		SW/ 5 5E)A/ E		0	1	0	Elat topography
ıry fa		(for high latitudes in northern hemisphere)		NA	3W, 3, 3L	VV, L		0		0	
onda		Distance from watercourse (m)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
Sec		Surface moisture index (NDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water	Ponded in drains	NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
		(water table level indicator)									
	Hydrology	Evidence of piping (subsurface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches	Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to
		Annual rainfall	< 1000 mm/vr	ΝΑ	< 1000 mm/vr	1000 - 1400 mm/vr	> 1400 mm/vr	1	1	1	
			< 1000 mm/ yr	NA	< 1000 mm/yr	1000 - 1400 mm/ yr	> 1400 mm/ yi	1		1	
	Vegetation	Bush	Grassland	NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
		Forestry (if applicable)	Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence	Cutaway /	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
	Peat workings		lurbary								
		Peat cuts vs contour lines	Perpendicular	NA	Perpendicular	Oblique	Parallel	1	1	1	Relatively flat topography
	Existing loads	Roads	NA	NA	Solid	-	Floating	0	1	0	
	Time of year for co	nstruction	Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
			Autumi	<u> </u>		Junner	Autunni		Hazard _{total}	34.5	
					На	zard	_				
					0.0 - 0.3	Low			iviax. possible	99	
					0.5 - 0.7	Medium			Hazard ₀₋₁	0.35	
					0.7 - 1.0	High					
						Rating criteria					
		Consequence factors	Value	0	1	2	3	- Rating value	Weighting	Score	Comment
Volum (functi	e of potential peat fl	0W	Medium	NA	Small	Medium	Large	2	3	6	Peat depth: ~ 1.85m. Slope angle: 6.3º.
Down	lone hydrology featu	ires	Minor	ΝΔ	Bowl / contained	Minor undefined	Valley	2	1	2	
			undefined			watercourse	valley	2		2	
Proxin	nity from defined val	ley (m)	> 500	NA	> 500	200 - 500	< 200	1	1	1	
Down	nill slope angle		NA	NA	Horizontal	Intermediate	Steep	0	1	0	Flat topography
Down	tream aquatic enviro	onment	Sensitive	NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream environments sensitive
	roode	at flow anth					supply				
Public	roads in potential pe	at flow path	NA	NA	Minor road	Local road	Regional road	0	1	0	
Overh	ead lines in potential	peat flow path	(MV, HV)	NA	Phone lines	(LV)	(MV, HV)	3	1	3	
Buildir	ngs in potential peat	flow path	NA	NA	Farm out-houses	-	Dwelling	0	1	0	
											Access very limited in this area in current state.
Capab	ility to respond (acce	ss and resources)	Fair	NA	Good	Fair	Poor	2	1	2	Historic railway is overgrown and significant amount of surface flooding
					Conse	quences]		, cotal	10	
					0.0 - 0.3	Negligible			Max. possible	33	
					0.3 - 0.5	Low	-	Consequ		0.48	
					0.7 - 1.0	High			U-1	V:40	
						•	-				
						Risk rat	ting				
	Ris	k			Action required]			
	0.00 - 0.20	Negligible Normal site inv	vestigation						Risk rating =	Hazard *	⁶ Consequences
								-	5		
	0.20 - 0.40	Low Targeted site in	nvestigation, design of spe	cific m	nitigation measures. P	art time supervision d	uring construction.		Risk rating =	0.35	0.48 = 0.17
	0.10	Avoid construc	tion in the area if possible	. If un	avoidable, detailed sit	e investigation and de	sign of specific	1			
	0.40 - 0.60	Medium mitigation mea	asures. Full time supervision	on duri	ng construction.						
	0.60 - 1.00	High Avoid construc	tion in this area.								

C	GDG	Peat Stability Risk Asse	ssment (PSRA)			Location: Conditions:	Turbine 06 (T06) Undrained (U), undra	ained surcharge (US),	drained (D), dra	ained surcharge	(DS)	
GAG	EOSOLUTIONS					Inspected on: Inspected by:	8th-10th November 2 BMc and MD	2023				
cc	OBIN NSULTING ENGINEERS	Derryadd Wind Farm				Completed by:	KG/CE					
							10/03/2023					
		Hazard factors		Value	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Factor	of Safety			2.7 2.7 1.80 2 2.30 2 3.10 5	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.8m. Slope angle: 5.8º.
		Distance to previous slide	es (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movements	ent (e.g. tension cracks, tures).	NA	NA	-	-	Yes	0	2	0	No evidence of peat movement.
		Subsoil type		Soft sensitive clav	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP301) records: Very soft damp grey organic laminated SILT with some plant material
	Subsoil conditions (visible in trial pits)	Peat fibres across transition	on to subsoil	NA	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Stands well	NA	Dry / Stands well	Slowly squeezing	Extremely wet /	3	2	6	TP dry on excavation
		General curvature downs	Іоре	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity	break	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
		Slope aspect	nemisphere)	NA	NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercours	se (m)	200 - 300	NA	> 300	200 - 300	< 200	2	1	2	Greater than 300m from watercourse.
ctors		Surface moisture index (N	IDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
ary fao		Surface water		Ponded in drains	NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
econd	Hydrology	Evidence of piping (subsur	rface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
S		Significant surface desicca	ation	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
		Bush		Grassland	NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
	Vegetation	Forestry		Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence		Cutaway /	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
	Peat workings	Peat cuts vs contour lines		NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		NA	NA	Solid	-	Floating	0	1	0	
	Time of year for cor	nstruction		Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
				Autumn			Summer	Autumn		Hazard _{total}	34.5	
						На 0.0 - 0.3	ard Negligible			Max. possible	99	
						0.3 - 0.5	Low			Hazard	0.25	
						0.7 - 1.0	High			1142414 ₀₋₁	0.35	
		Consequence factors		Value	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volum (functi	e of potential peat fl on of distance from nea	ow arest watercourse and peat de	epth in the area)	Medium	NA	Small	Medium	Large	2	3	6	Peat depth: ~1.8m. Slope angle: 5.8º.
Down	lope hydrology featu	ures		Minor undefined	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proxin	nity from defined vall	ley (m)		> 500	NA	> 500	200 - 500	< 200	1	1	1	
Down	nill slope angle			Horizontal	NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Down	stream aquatic enviro	onment		Sensitive	NA	Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream environments sensitive.
Public	roads in potential pe	at flow path		NA	NA	Minor road	Local road	Regional road	0	1	0	
Overh	ead lines in potential	peat flow path		Electricity (MV, HV)	NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildi	gs in potential peat	flow path		NA	NA	Farm out-houses	-	Dwelling	0	1	0	
Capab	ility to respond (acce	ess and resources)		Fair	NA	Good	Fair	Poor	2	1	2	Access very limited in this area in current state. Historic railway is
Capac						0000				-		overgrown and significant amount of surface flooding
						Consec	uences]	Co	nsequences _{total}	17	
						0.0 - 0.3	Negligible			Max. possible	33	
						0.5 - 0.7	Medium		Consequ	iences ₀₋₁	0.52	
						0.7 - 1.0	וואון					
								Risk rating				
	D'					Action required			1			
	0.00 - 0.20	Negligible I	Normal site investigation	on						Risk rating =	Hazard	* Consequences
	0.20 - 0.40	Low	Targeted site investigat	tion, design of spe	cific m	itigation measures. Pa	irt time supervision du	iring construction.		Risk rating =	0.35	0.52 = 0.18
	0.40 - 0.60	Medium	Avoid construction in th	ne area if possible	. If una	voidable, detailed site	investigation and des	ign of specific				
	0.60 - 1.00	High	Avoid construction in the	nis area.	n durii							
	1.00	ingit /										

GA GA CC	COBINE BOSOLUTIONS COBINE DISULTING ENGINEERS	Peat Stability Risk Ass Derryadd Wind Farm	essment (PSRA)			Location: Conditions: Inspected on: Inspected by: Completed by: Date:	Turbine 07 (T07) Undrained (U), undra 8th-10th November 2 BMc and MD KG/CE 10/03/2025	ained surcharge (US), 2023	drained (D), dra	ained surcharge	(DS)	
		Hazard factors		Value	0	1	Rating criteria	3	- Rating value	Weighting	Score	Comment
Factor	of Safety			2.7 <u>2.3</u> <u>1.7</u> <u>2.3</u> <u>3.3</u> <u>2.3</u> <u>2</u>	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.6m. Slope angle: 6.5º.
		Distance to previous slid	es (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movem step features, compression fea	I ent (e.g. tension cracks, atures).	NA	NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions	Subsoil type		Soft sensitive clay	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPT08) records: damp grey slightly silty fine to medium sand underlain by very soft moist grey slightly sandy silty CLAY. Sand is fine and TP295 records moist grey slightly clayey silty fine to medium SAND
		Peat fibres across transit	ion to subsoil	NA	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Extremely wet / Undiggable	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	TP295 failed to progess beyond 3.4mbgl due to ingress of water
		General curvature down	slope	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity (only if previous factor is Conv	y break /ex)	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
S		Slope aspect (for high latitudes in northern	hemisphere)	NA	NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
/ facto		Distance from watercour	rse (m)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
ondary		Surface moisture index (NDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
Seco		Surface water (water table level indicator)		Springs	NA	Localised	Ponded in drains	Springs	3	1	3	Significant amount of water ponded in drains
	Hydrology	Evidence of piping (subs	urface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desico	cation	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches	;	Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
		Bush		Wetlands	NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
	Vegetation	Forestry		Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence		Cutaway /	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
	Peat workings	Peat cuts vs contour line	S	NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		NA	NA	Solid	-	Floating	0	1	0	
	Time of year for con	Instruction		Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
				Autumn			Summer	Autumn		Hazard _{total}	35.5	
						Ha: 0.0 - 0.3	zard Negligible	-		Max. possible	99	
						0.3 - 0.5	Low			·	0.00	
						0.7 - 1.0	High			Hazaru ₀₋₁	0.30	
		0					Rating criteria				6	
Volum	e of notential neat flu	Consequence factors		Value	0	1	2	3	- Rating value	Weighting	Score	Comment
(functio	on of distance from nea	nest watercourse and peat d	epth in the area)	Medium Minor undefined	NA	Small	Medium Minor undefined	Large	2	3	6	Peat depth: ~1.6m. Slope angle: 6.5 ^o .
Downs	slope hydrology featu	ures		watercourse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proxin	nity from defined vall	ley (m)		> 500	NA	> 500	200 - 500	< 200	1	1	1	
Down	nill slope angle			Horizontal	NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downs	stream aquatic enviro	onment		Sensitive	NA	Non-sensitive	Sensitive	supply	2	1	2	Assumed downstream environments sensitive.
Public	roads in potential pe	at flow path		NA	NA	Minor road	Local road	Regional road	0	1	0	
Overh	ead lines in potential	peat flow path		(MV, HV)	NA	Phone lines	(LV)	(MV, HV)	3	1	3	
Buildir	ngs in potential peat f	flow path		NA	NA	Farm out-houses	-	Dwelling	0	1	0	
Capab	ility to respond (acce	ss and resources)		Fair	NA	Good	Fair	Poor	2	1	2	overgrown and significant amount of surface flooding
						Consec	quences]	Co	onsequences _{total}	17	
						0.0 - 0.3	Negligible			Max. possible	33	
						0.5 - 0.7	Medium		Consequ	uences ₀₋₁	0.52	
						0.7 - 1.0	High]				
								Risk rating				
	Dia	k				Action required			7			
	0,00 - 0 20	Negligible	Normal site investigation	on					1	Risk rating -	Lasard *	Consequences
	0.20 - 0.40	Low	Targeted site investiga	tion, design of spe	ecific m	nitigation measures. P	art time supervision d	uring construction.		Risk rating =	0.36	0.52 = 0.18
	0.40 - 0.60	Medium	Avoid construction in t mitigation measures. F	he area if possible ull time supervision	e. If una on duri	avoidable, detailed siten ng construction.	e investigation and de	sign of specific				
	0.60 - 1.00	High	Avoid construction in t	his area								
	1.00	i ligit										

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TOBBIN CONSULTING ENGINEERS Derryadd Wind Farm Location:Turbine 08 (T08)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

				Value			Rating criteria				6	2
		Hazard factors		U US D DS	0	1	2	3	Rating value	Weighting	Score	Comment
Factor	of Safety			9.7 2.9 8 4.9	-	≥1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: 0.5, Slope angle: 7.2
	Clide history	Distance to previous slide	es (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Silde history	Evidence of peat movements step features, compression feat	ent (e.g. tension cracks, tures).	NA	NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions	Subsoil type		Gravel / Firm glacial till	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP275) records:Firm damp light orangish greyish brown gravelly silty CLAY with low cobble content and low boulder content
	(visible in trial pits)	Peat fibres across transition	on to subsoil	NA	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly squeezing	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 0.7mbgl (TP275)
		General curvature downs	lope	NA	NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity (only if previous factor is Conve	v break ex)	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
		Slope aspect (for high latitudes in northern h	hemisphere)	NA	NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
ors		Distance from watercours	se (m)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
y facto		Surface moisture index (N	NDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
ondar		Surface water (water table level indicator)		Ponded in drains	NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
Sec	Hydrology	Evidence of piping (subsu	rface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desicca (previous summer was dry?)	ation	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied / Oblique	NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
		Bush		Wetlands	NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
	Vegetation	Forestry (if applicable)		Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
		Peat cuts presence		Cutaway / Turbary	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
	Peat workings	Peat cuts vs contour lines	;	Oblique	NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		NA	NA	Solid	-	Floating	0	1	0	
	Time of year for con	I		Late Summer,	NA	Spring	Winter, Early	Late Summer,	3	1	3	Worst case estimate
				Addinin			Summer	Autumn		Hazard _{total}	32.5	
						Haz 0.0 - 0.3	zard Negligible			Max. possible	99	
						0.3 - 0.5	Low					
						0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.33	
		Consequence factors		Value			Rating criteria		Rating value	Weighting	Score	Comment
Volum	e of potential peat flo	w		Small		1 Small	2 Medium	3	1	2	2	Peat denth: 0.5. Slone angle: 7.2
(functio	on of distance from nea	rest watercourse and peat de	epth in the area)	Minor		Bowl / contained	Minor undefined	Vallov	2	1	2	
Brovin	ity from defined valu			undefined			watercourse		1	1	1	
Down		ey (11)		> 300		> 500	200 - 500	Steen	1	1		
Down		nmont		Sonsitivo			Soncitivo	Drinking water	0	1	2	Elat topography
Downs		at flow path		Sensitive		Minor rood	Sensitive	supply	2	1	2	Assumed downstream environments
Public	roads in potential per	at now path		Electricity		Ninor road	Electricity	Electricity	0	1	0	sensitive.
Duille		pcar now pdlii		(MV, HV)			(LV)	(MV, HV)	3	1	3	
Ganah	litute respond (see			NA Cood		Farm out-nouses	-	Dweiling	0	1	0	
Сарар		ss and resources)		Good	NA	Good	Fair	Poor	Co	ے nsequences _{total}	1	
						Conseq	uences				22	
						0.0 - 0.3	Low			Max. possible	33	
						0.5 - 0.7 0.7 - 1.0	Medium High		Consequ	ences ₀₋₁	0.36	
							0					
							Risk rating					
	Ris	k				Action required						
	0.00 - 0.20	Negligible	Normal site investigation	on						Risk rating =	Hazard *	Consequences
	0.20 - 0.40	Low	Targeted site investiga	tion, design of spe	cific mi	itigation measures. Pa	rt time supervision du	ring construction.		Risk rating =	0.33	0.36 = 0.12
	0.40 - 0.60	Medium	Avoid construction in t mitigation measures. F	he area if possible full time supervisio	. If una n durir	voidable, detailed site ng construction.	investigation and des	gn of specific				
	0.60 - 1.00	High	Avoid construction in t	his area.								

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Peat Stability Risk Assessment (PSRA)

Derryadd Wind Farm

Location:Turbine 09 (T09)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Hazard factors			Value			Rating criteria		Rating value	Weighting	Score	Comment
					0	1	2	3				
Facto	of Safety	1		10. 9.9 6.7	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.5 m. Slope angle: 4.9 ^o .
	Slide history	Distance to previous slides	s (km)	NA	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		step features, compression feat	tures).	NA	NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions	Subsoil type		Soft sensitive clay	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPT11) records: Soft brownish grey slightly sandy gravelly organic SILT with high cobble content and TP266 records soft moist grey slightly sandy slight gravlley silty organic CLAY with medium cobble content and some rootlets
	(visible in trial pits)	Peat fibres across transitio	on to subsoil	NA	NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly squeezing	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 1.6mbgl (TP266) and 1.9mbgl (TPT11)
		General curvature downsl	lope	-	NA	-	Planar	Convex	1	1	1	Flat topography.
	Topography	Distance to the convexity (only if previous factor is Conve	break ex)	NA	NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
ctors		Slope aspect (for high latitudes in northern h	hemisphere)	NA	NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
lary fac		Distance from watercours	se (m)	> 300	NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
Second		Surface moisture index (N	IDMI)	NA	NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
0,		Surface water (water table level indicator)		Ponded in drains	NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
	Hydrology	Evidence of piping (subsur	rface flow)	NA	NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desicca (previous summer was dry?)	ation	NA	NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		NA	NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000 mm/yr	NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush		Wetlands	NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
		Forestry (if applicable)		Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence		Cutaway / Turbary	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
		Peat cuts vs contour lines		NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads Roads			NA	NA	Solid	-	Floating	0	1	0	
	Time of year for co	nstruction		Late Summer, Autumn	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
										Hazard _{total}	31.5	
						Haz	zard					
						Ha: 0.0 - 0.3 0.3 - 0.5	zard Negligible Low			Max. possible	99	
						Hax 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High			Max. possible Hazard ₀₋₁	99 0.32	
						Hax 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High			Max. possible Hazard ₀₋₁	99 0.32	
		Consequence factors		Value	0	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria 2	3	· Rating value	Max. possible Hazard ₀₋₁ Weighting	99 0.32 Score	Comment
Volur (funct	e of potential peat fl on of distance from ne	Consequence factors low earest watercourse and peat d	epth in the area)	Value Small	0 NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small	zard Negligible Low Medium High Rating criteria 2 Medium	3 Large	Rating value	Max. possible Hazard ₀₋₁ Weighting 3	99 0.32 Score 3	Comment Peat depth: ~0.5 m. Slope angle: 4.9º.
Volun (funct Dowr	e of potential peat fl on of distance from ne slope hydrology featu	Consequence factors low earest watercourse and peat dures	epth in the area)	Value Small Minor undefined	0 NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse	3 Large Valley	Rating value	Max. possible Hazard 0-1 Weighting 3 1	99 0.32 Score 3 2	Comment Peat depth: ~0.5 m. Slope angle: 4.9º.
Volun (funct Dowr Proxii	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val	Consequence factors low earest watercourse and peat dures ley (m)	epth in the area)	Value Small Minor undefined > 500	0 NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained > 500	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500	3 Large Valley < 200	Rating value121	Max. possible Hazard 0-1 Weighting 3 1 1	99 0.32 Score 3 2 1	Comment Peat depth: ~0.5 m. Slope angle: 4.9º.
Volun (funct Dowr Proxii Dowr	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle	Consequence factors low earest watercourse and peat dures ley (m)	epth in the area)	ValueSmallMinorundefined> 500Horizontal	0 NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained > 500 Horizontal	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate	3 Large Valley < 200 Steep Drinking water	Rating value	Max. possible Hazard 0-1 Weighting 3 1 1 1 1	99 0.32 Score 3 2 1 1 1	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography
Volun (funct Dowr Proxin Dowr	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro	Consequence factors low earest watercourse and peat de ures ley (m) onment	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitive	0 NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained > 500 Horizontal Non-sensitive	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive	3 Large Valley < 200 Steep Drinking water supply	Rating value 1 2 1 2 1 2 1 2	Max. possible Hazard ₀₋₁ Weighting 3 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 2 2 1 2	Comment Peat depth: ~0.5 m. Slope angle: 4.9 ^o . Flat topography Assumed downstream environments sensitive.
Volur (funct Dowr Proxii Dowr Dowr Public	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential pe	Consequence factors low earest watercourse and peat de ures ley (m) onment eat flow path	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity	0 NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria C C C C C C C C C C C C C C C C C C	3 Large Valley < 200 Steep Drinking water supply Regional road Electricity	Rating value 1 2 1 2 1 2 0 2 0	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 2 2 0	Comment Peat depth: ~0.5 m. Slope angle: 4.9°. Flat topography Assumed downstream environments sensitive.
Volur (funct Dowr Proxii Dowr Dowr Public Overh	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential pe ead lines in potential	Consequence factors low earest watercourse and peat de ures ley (m) onment eat flow path l peat flow path	lepth in the area)	Value Small Minor undefined > 500 Horizontal Sensitive NA Electricity (LV)	0 NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV)	3 Large Valley < 200 Steep Drinking water supply Regional road Electricity (MV, HV)	Rating value 1 2 1 2 1 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 2 0 2 0 2	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive.
Volur (funct Dowr Proxin Dowr Public Overf Buildi	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NA	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria Rating criteria Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) -	3 Large Valley < 200 Steep Drinking water supply Regional road Electricity (MV, HV) Dwelling	Rating value 1 2 1 2 1 2 0 2 0 2 0 1 1 1 2 0 1	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 2 0 2 0 2 0 2	Comment Peat depth: ~0.5 m. Slope angle: 4.9°. Flat topography Assumed downstream environments sensitive.
Volun (funct Dowr Proxin Dowr Dowr Public Overh Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good	zard Negligible Low Medium High Rating criteria C C C C C C C C C C C C C C C C C C	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 Co	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 2 0 2 0 2 0 1 1 1 2 0 1 1 2 0 1 1 1 1 1 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: Comment of the sensitive of the senset of the sensitive of the sensitive of the sen
Volun (funct Down Proxin Down Down Public Overh Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 Small Bowl / contained Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consec 0.0 - 0.3	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate 200 - 500 Intermediate Sensitive Local road Electricity (LV) - Fair	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 Co	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	99 0.32 Score 3 2 1 1 1 2 0 2 0 2 0 1 1 2 0 1 1 2	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: Comment of the sensitive of the senset of the sensitive of the sensitive of the sen
Volur (funct Dowr Proxii Dowr Dowr Public Overh Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consect 0.0 - 0.3 0.3 - 0.5	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) - Fair	3LargeValley< 200	Rating value 1 2 1 2 1 2 0 2 0 1 Co	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 Nax. possible	99 0.32 Score 3 2 	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: Comment of the sensitive of the senset of the sensitive of the sensitive of the sen
Volur (funct Dowr Proxii Dowr Public Overh Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) - Fair vences Negligible Low Medium High	3LargeValley< 200	Rating value 1 2 1 2 1 2 0 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 	99 0.32 Score 3 2 1 1 1 2 0 2 0 2 0 1 1 12 33 0.36	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: Comment of the sensitive of the senset of the sensitive of the sensitive of the sen
Volun (funct Down Proxin Down Down Public Overh Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consec 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) Fair Fair Negligible Low Medium High Risk ratiop	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 Max. possible Hazard 0-1	99 0.32 Score 3 2 1 1 1 2 0 2 0 2 0 1 12 33 0.36	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: Comment of the sensitive of the senset of the sensitive of the sensitive of the sen
Volun (funct Down Proxin Down Public Overf Buildi Capal	e of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce	Consequence factors	lepth in the area)	ValueSmallMinorundefined> 500HorizontalSensitiveNAElectricity(LV)NAGood	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained Small Bowl / contained Small Aborizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consect 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 Action required	vegligible Low Medium High Rating criteria Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) Fair Negligible Low Medium High	3 Large Valley < 200 Steep Drinking water supply Regional road Electricity (MV, HV) Dwelling Poor ting	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 Max. possible Jences 0-1	99 0.32 Score 3 2 1 1 1 1 2 0 0 2 0 1 1 12 33 0.36	Comment Peat depth: ~0.5 m. Slope angle: 4.9°. Flat topography Assumed downstream environments sensitive. Image: Sensitive of the senset of the sensitive of the senset of the sens
Volur (funct Dowr Proxin Dowr Public Overf Buildi Capal	ee of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ead lines in potential ngs in potential peat ility to respond (acce Ris 0.00 - 0.20	Consequence factors low earest watercourse and peat de ures ley (m) onment eat flow path l peat flow path flow path ess and resources)	lepth in the area)	Value Small Minor undefined > 500 Horizontal Sensitive NA Electricity (LV) NA Good	0 NA NA NA NA NA NA	Ha: 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 1 Small Bowl / contained Small Bowl / contained Atorizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consect 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 Action required	zard Negligible Low Medium High Rating criteria Q Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) - Fair Negligible Low Medium High Risk ration	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 Max. possible Uences 0-1 Risk rating =	99 0.32 Score 3 2 3 2 1 1 1 2 0 0 2 0 0 2 0 0 2 0 0 1 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Comment Peat depth: ~0.5 m. Slope angle: 4.99. Flat topography Assumed downstream environments sensitive. I I I
Volur (funct Dowr Proxin Dowr Public Overf Buildi Capal	ee of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ad lines in potential ngs in potential peat ility to respond (acce ad lines in potential ngs in potential peat condot acce ad lines in potential peat read lines in potential ngs in potential peat ad lines in potential ngs in potential peat dity to respond (acce ad lines in potential ngs in potential peat ad lines in potential peat ad	Consequence factors low earest watercourse and peat du ures ley (m) onment eat flow path flow path flow path ess and resources) sk Negligible Low T	lepth in the area)	Value Small Minor undefined > 500 Horizontal Sensitive NA Electricity (LV) NA Good	0 NA NA NA NA NA NA	Hai 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Image: subservision due Negligible Low Medium High Rating criteria Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) Intermediate Negligible Low Medium High	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 A	99 0.32 Score 3 2 1 1 1 1 2 0 0 2 0 1 1 12 33 0.36 Hazard *	Comment Peat depth: ~0.5 m. Slope angle: 4.9º. Flat topography Assumed downstream environments sensitive. Image: sense of the sense of
Volur (funct Dowr Proxin Dowr Public Overf Buildi Capal	ee of potential peat fl on of distance from ne slope hydrology featu nity from defined val hill slope angle stream aquatic enviro roads in potential peat ad lines in potential ngs in potential peat ility to respond (acce ad lines in potential ngs in potential peat cad lines in potential ngs in potential peat ad lines ad lines in potential peat ad lines ad lines ad lines	Consequence factors low earest watercourse and peat de ures ley (m) onment eat flow path flow path ess and resources) sk Negligible Negligible Low Medium	lepth in the area)	Value Small Minor undefined > 500 Horizontal Sensitive NA Electricity (LV) NA Good	O NA NA NA NA NA NA NA	Hat 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0 Small Bowl / contained > 500 Horizontal Non-sensitive Minor road Phone lines Farm out-houses Good Consect 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	zard Negligible Low Medium High Rating criteria 2 Medium Minor undefined watercourse 200 - 500 Intermediate Sensitive Local road Electricity (LV) Local road Electricity (LV) Negligible Low Negligible Low Medium High	3 Large Valley < 200	Rating value 1 2 1 2 1 2 0 2 0 1 2 0 1 Conseque	Max. possible Hazard 0-1 Weighting 3 1 1 1 1 1 1 1 1 1 1 1 1 1 A A A A A A	99 0.32 0.32 3 3 2 1 1 2 1 1 2 0 0 2 0 1 1 2 0 1 1 12 33 0.36 Hazard *	Comment Peat depth: ~0.5 m. Slope angle: 4.99. Flat topography Assumed downstream environments sensitive.

GAVIN GEOS CONS	DOUTIONS OUUTIONS OBBIN	Peat Stability Risk Assessment (P Derryadd Wind Farm	PSRA)					Location: Conditions: Inspected on: Inspected by: Completed by: Date:	Turbine 10 (T10) Undrained (U), undrain 8th-10th November 20 BMc and MD KG/CE 10/03/2025					
	На	azard factors		Va	lue D	DS	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Factor of	Safety		23.40	4.1	18.8	7	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.2m. Slope angle: 5.9º.
		Distance to previous slides (km)		IN	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression		N	A		NA	_	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	itive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP270) records: Very soft moist grey organic SILT with some rootlets and some plant material
		Peat fibres across transition to		N	A		NA	Yes	Partially	No Extremely wet /	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Sta	inds well		NA	Dry / Stands well	Slowly squeezing	Undiggable	1	2	2	TP dry on excavation
		General curvature downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.
tors	Topography	Distance to the convexity break (only if previous factor is Convex)		N	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
ondary fac		Slope aspect (for high latitudes in northern hemisphere)		N	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
Sec		Distance from watercourse (m)		> 3	800		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water (water table level indicator)		Ponded	in drains		NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
	Hydrology	Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		N	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		N < 1000	A		NA NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular
	Vegetation	Bush		Gras	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
	vegetation	Forestry		Good g	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence Peat cuts vs contour lines		Obl	/ Turbary ique		NA NA	- Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		Ν	A		NA	Solid	-	Floating	0	1	0	
	Time of year for	r construction		Late Summ	er, Autumr	ı	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1 Hazard _{total}	3 29.5	Worst case estimate
									Hazard]			20	
								0.0 - 0.3	Low			Max. possible	99	
								0.5 - 0.7 0.7 - 1.0	<mark>Medium</mark> High			Hazard ₀₋₁	0.30	
	Conse	equence factors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
(function (area)	of distance from nea	ow arest watercourse and peat depth in the		Sm	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.2m. Slope angle: 5.9º.
Downslo	pe hydrology featu	ures	Mir	nor undefine	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	v from defined vall	ley (m)		> 5	500		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream environment is
Downstre	eam aquatic enviro	onment		Sens	sitive		NA	Non-sensitive	Sensitive	supply	2	1	2	sensitive.
Public roa	ads in potential pe	eat flow path		N Elect	A		NA	Minor road	Local road	Regional road Electricity	0	1	0	-
Overhead lines in potential peat flow path Electricity NA Buildings in potential peat flow path Image: Comparison of the path NA						Phone lines	Electricity (LV)	(MV, HV)	3	1	3			
Capability	v to respond (acce	ess and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	
cupuoliit								0000	- Tun	1.001	Co	nsequences _{total}	13	
								Con 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Negligible Low Medium High		Conse	Max. possible equences ₀₋₁	33 0.39	
	Risk rating													
	Diele					. د ۵]			
	0.00 - 0.20	Negligible Normal site investigation	1								1	Risk rating =	Hazard *	Consequences
0.20 - 0.40 Low Targeted site investigation, design of specific mitigation measures. Part time supervision during construction.										Risk rating =	0.30	0.39 = 0.12		
0.40 - 0.60 Medium Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time 0.60 - 1.00 High Avoid construction in this area.														

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Location:Turbine 11 (T11)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

Derryadd Wind Farm

	На	azard factors	U	Va US	lue D	DS	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Factor of S	Safety		6.30	3.5	5.2	6.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.41m. Slope angle: 3.66º.
		Distance to previous slides (km)		N	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Side filstory	Evidence of peat movement (e.g. tension cracks, step features, compression		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest trial pits (TP225 and 226) record: Soft moist bluish grey organic gravelly silty clay and soft moist light grey silty very gravelly clay witj medium cobble content
		Peat fibres across transition to		Ν	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly s	queezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 3.3mbgl in TP225
		General curvature downslope		Ν	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
S	Topography	Distance to the convexity break (only if previous factor is Convex)		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
lary factor		Slope aspect (for high latitudes in northern hemisphere)		Ν	IA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
Second		Distance from watercourse (m)		>3	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		Ν	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water (water table level indicator)		Loca	ilised		NA	Localised	Ponded in drains	Springs	1	1	1	Significant amount of water ponded in drain
		Evidence of piping (subsurface flow)		Ν	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		Ν	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied /	Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to
		Bush			lands		NA	Dry heather	Grassland	Vetlands	3	1	3	Wet peatland
	Vegetation	Forestry		Good	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	·
	Peat workings	Peat cuts presence		Cutaway	/ Turbary		NA	-	Cutaway / Turbary	Machine cut	2	1	2	Polatively flat tonography
	Existing loads	Roads		N	IA IA		NA	Solid	-	Floating	0	1	0	
	Time of year for	r construction		Late Summ	ier, Autumr	ו	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
									Hazard]		Hazard _{total}	31.5	
								0.0 - 0.3	Negligible			Max. possible	99	
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.32]
								0.7 - 1.0	High					
	Conse	equence factors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volume of (function o area)	potential peat flo f distance from nea	ow arest watercourse and peat depth in the		Sn	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.41m. Slope angle: 3.66º.
Downslop	e hydrology featu	ures	Mi	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined vall	ley (m)		; <	500		NA	> 500	200 - 500	< 200	1	1	1	
Downnins							NA	Horizontai	intermediate	Drinking water			1	Assumed downstream environment is
Downstrea		onnent		. Sens			NA	Non-sensitive	Sensitive	supply	2		2	sensitive.
Public roa	as în potențial pe	at flow path		Loca Elect	ricitv		NA	Minor road	Local road	Electricity	2	1	2	R396 ~ 1.2km to the south
Overhead	lines in potential	peat flow path		(MV	, 7, HV)		NA	Phone lines	Electricity (LV)	(MV, HV)	3	1	3	
Buildings i Capability	n potential peat f	flow path ess and resources)		Dwe Go	elling ood		NA NA	Farm out-houses Good	- Fair	Dwelling Poor	3	1	3	Cloontagh National School ~ 1.2km to the sc
	· ·	·								-	Со	nsequences _{total}	18	
								0.0 - 0.3	Negligible			Max. possible	33	
								0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low <mark>Medium</mark> High		Conse	equences ₀₋₁	0.55]
									Risk rating					
	Risk					Activ	on require							
0	.00 - 0.20	Negligible Normal site investigation	1				- 14.19					Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	on, design c	of specific m	itigation m	easures. Pa	rt time su	pervision during cor	nstruction.			Risk rating =	0.32	0.55 = 0.17
0	.40 - 0.60 .60 - 1.00	Medium Avoid construction in the High Avoid construction in this	e area if pos s area.	ssible. If una	ivoidable, d	letailed site	investigat	tion and design of sp	pecific mitigation measu	res. Full time				

Location:Turbine 12 (T12)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

TOBIN	Derryadd Wind Farm
CONSULTING ENGINEERS	

	Haz	Value			Rating criteria					Weighting	Score	Comment												
Factor of	Safety		6.50	5.0	5.3	8.4	-	≥ 1.3	1.3 - 1.0	3 ≤ 1.0	1	10	10	Peat depth: ~0.7m. Slope angle: 5.95º.										
		Distance to previous slides (km)			NA	1	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km										
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		I	NA		NA	-	-	Yes	0	2	0	No evidence of peat movement.										
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Fi	rm glacial til	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TPS (TPBPE01, TPBPE02 and TP229) record: Moist grey very silty snad and gravel with medium cobble content and medium boulder content, damp light grey brown clayey silty subangular to rounded fine to coarse limestone gravel with high cobble content and medium boulder content and soft damp light orangish brown slightly gravelly sandy clay with medium cobble content and low boulder content										
		Peat fibres across transition to		1	NA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs										
		Peat wetness		Slowly squeezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 3.1mbgl (TPBPE01) and 2.7mbgl (TPBPE02)											
factors		General curvature downslope		NA		NA		NA		NA		NA		NA		NA		-	Planar	Convex	0	1	0	Flat topography.
Secondary 1	Topography	Distance to the convexity break (only if previous factor is Convex)		I	NA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.										
		Slope aspect (for high latitudes in northern hemisphere)		I	NA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.										
		Distance from watercourse (m)		>	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.										
	Surface moisture index (NDMI) NA Surface water Localised		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable														
	Hydrology	Surface water		Loc	alised		NA	Localised	Ponded in drains	Springs	1	1	1	Localised surface water										
		Evidence of piping (subsurface flow) Significant surface desiccation		۱			NA	-	-	Yes	0	1	0	No evidence of piping. No evidence of significant										
		(previous summer was dry?)		ľ	NA		INA	-	-	Tes		1.5	0	dessication.										
		Existing drainage ditches		Varied / Oblique < 1000 mm/yr Grassland		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains											
		Annual raintali Bush				NA NA	< 1000 mm/yr Dry heather	1000 - 1400 mm/yr Grassland	> 1400 mm/yr Wetlands	2	1	2	Wet peatland											
	Vegetation	Forestry		Good	Grassland Good growth		growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5									
	Peat workings	Peat cuts presence Peat cuts vs contour lines		Cutaway / Turbary		NA NA	- Perpendicular	Cutaway / Turbary Oblique	Machine cut Parallel	2	1	2	Relatively flat topography											
	Existing loads	Roads		1	NA		NA	Solid	-	Floating	0	1	0											
	Time of year for	construction		Late Sumn	ner, Autumr	ı	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate										
							<u> </u>	Į	<u> </u>			Hazard _{total}	28.5											
								0.0.02	Hazard			May possible	00											
								0.3 - 0.5	Low				35											
								0.5 - 0.7 0.7 - 1.0	<mark>Medium</mark> High			Hazard ₀₋₁	0.29]										
									Rating criteria		Rating													
	Conse	quence factors		Va	alue		0	1	2	3	value	Weighting	Score	Comment										
Volume o	f potential peat flo	W		Sr	mall		NA	Small	Medium Minor undefined	Large	1	3	3	Peat depth: ~0.7m. Slope angle:										
Downslop	e hydrology featu	res	Mi	inor undefin	ned waterco	urse	NA	Bowl / contained	watercourse	Valley	2	1	2											
Proximity Downhill	from defined valle	ey (m)		> Hori	500 izontal		NA NA	> 500 Horizontal	200 - 500	< 200 Steen	1	1	1	Flat topography										
Downstre	am aquatic enviro	nment		Sen	sitive		ΝΑ	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream										
Public roa	ds in notential nea	at flow path			al road		ΝΔ	Minor road		supply Regional road	2	- 1	2	environment is sensitive. R398 ~900m to the south										
Overhead	lines in potential	peat flow path		Elec	tricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3											
				(M\	/, HV)					(MV, HV)		-												
Buildings	in potential peat fi	ow path		DW			NA NA	Farm out-houses	- Fair	Dwelling	3	1	3	Cloontagn National School ~900n										
capability				0	000			0000	1 411	1001	Coi	nsequences _{total}	18											
								Con	sequences				22											
								0.3 - 0.5	Low				33											
								0.5 - 0.7 0.7 - 1.0	<mark>Medium</mark> High		Conse	quences ₀₋₁	0.55]										
								Ris	k rating															
	Risk	Negligible Normal site investigation				Actio	on required					Rick rating -	Lineard *	Consequences										
0	.20 - 0.40	Low Targeted site investigation	on, design d	of specific n	nitigation m	easures. Pa	rt time supe	ervision during con	struction.		1	Risk rating =	0.29	0.55 = 0.16										
0	0.20 - 0.40 Low Largeted site investigation, design of specific mitigation measures. Part time supervision during construction. 0.40 - 0.60 Medium Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time 0.60 - 1.00 High Avoid construction in this area									es. Full time														

Location:Turbine 13 (T13)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

TOBIN	Derryadd Wind Farm
CONSULTING ENGINEERS	

		Valuo						Delta estrato		Dut																			
	На	azard factors	U	US	D D	DS	0 1 2			3	value	Weighting	Score	Comment															
Factor of	Safety		6.6	3.5	5.5	6.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.1m. Slope angle: 3.95º.															
	Slide history	Distance to previous slides (km)			NA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km															
		Evidence of peat movement (e.g. tension cracks, step features, compression features).		I	NA		NA	-	-	Yes	0	2	0	No evidence of peat movement.															
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft ser	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (tP240) records: Soft moist grey organic gravelly silty CLAY with medium cobble content and low boulder content															
		Peat fibres across transition to			NA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs															
		Peat wetness		Slowly	aueezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet /	2	2	4	Ingress of water at 1mbgl															
		reat wethess		SIGWIY	squeezing		NA	Dry / Stanus wen	Slowly squeezing	Undiggable	2	2	4																
		General curvature downslope		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	-	Planar	Convex	0	1	0	Flat topography.
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)		NA		NA		> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.															
Secondar		Slope aspect (for high latitudes in northern hemisphere)		NA		NA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.														
		Distance from watercourse (m)		> 300		> 300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.														
		Surface moisture index (NDMI)	NA		NA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable															
	Hydrology	Surface water (water table level indicator)		Ponded in drains		Ponded in drains		Ponded in drains		Ponded in drains		Ponded in drains		Ponded in drains		Ponded in drains		NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains				
	Evidence of piping (subsurface flow) NA		NA	-	-	Yes	0	1	0	No evidence of piping.																			
		Significant surface desiccation (previous summer was dry?)		I	NA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.															
		Existing drainage ditches			NA		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains															
		Annual rainfall		< 1000) mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	Across slope 0 r > 1400 mm/yr 1		1	1																
	Vegetation	Bush		We	tlands		NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland															
	vegetation	Forestry		F	air		NA	Good growth	Fair	Stunted growth	2	1.5	3																
	Peat workings	Peat cuts presence		Cutaway	/ Turbary		NA NA NA	-	Cutaway / Turbary	Machine cut	2	1	2																
		Peat cuts vs contour lines			NA			NA NA NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography														
	Existing loads	Roads		Lata Cumu	NA				NA NA	Solid		Late Summer,	0	1	0														
	Time of year for	construction		Late Sumr	ner, Autum	n	NA	Spring	winter, Early Summer	Autumn	3		3	worst case estimate															
								0.0 - 0.3	Hazard Negligible			Hazard _{total} Max. possible	32 99																
								0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.32]															
									Rating criteria		Rating																		
	Conse	equence factors		V	alue		0	1	2	3	value	Weighting	Score	Comment															
Volume o (function o the area)	f potential peat fl of distance from ne	ow arest watercourse and peat depth in		Si	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~1.1m. Slope angle: 3.95º.															
Downslop	e hydrology featu	ires	М	linor undefir	ed waterco	ourse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2																
Proximity	from defined vall	ley (m)		>	500		NA	> 500	200 - 500	< 200	1	1	1																
Downhill	slope angle			Hori	zontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography															
Downstre	am aquatic enviro	onment		Ser	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream															
Public roa	ads in potential pe	at flow path			NA		NA	Minor road	Local road	Supply Regional road	0	1	0	environment is sensitive.															
Overhead	l lines in potential	peat flow path		Elec	tricity /, HV)		NA	Phone lines	Electricity (LV)	Electricity	3	1	3																
Buildings	in potential peat f	flow path		(NA		NA	Farm out-houses	-	Dwelling	0	1	0																
Capability	to respond (acce	ss and resources)		G	ood		NA	Good	Fair	Poor	1	1	1																
							-		•		Co	nsequences _{total}	13																
								Con	sequences]																			
								0.0 - 0.3	Negligible			Max. possible	33																
								0.3 - 0.5	Low		Conco	<u></u>	0.20	1															
								0.5 - 0.7	High		Lonse	quences 0-1	0.39	J															
						0.7 - 1.0	111811	I																					
Risk rating																													
	Di-I										1																		
0.00 - 0.20 Negligible Normal site investigation								I			1	Risk rating -	Hazard *	Consequences															
0.20 - 0.40 Low Targeted site investigation. design of specific mitigation measures. Part tim								ervision during cor	struction.		1	Risk rating -	0.32	0.39 = 0.12															
).40 - 0.60	Medium Avoid construction in the	e area if no	ossible. If un	avoidable	detailed site	investigati	on and design of st	pecific mitigation measure	res. Full time	1			0.13															
0.40 - 0.60MediumAvoid construction in the area if possible. If unavoidable, detailed site investigat0.60 - 1.00HighAvoid construction in this area.											1																		

GAVIN	DIUTIONS	Peat Stability Risk Assessment (P	PSRA)					Location: Conditions: Inspected on:	Turbine 14 (T14) Undrained (U), undrain 8th-10th November 202 BMc and MD	ed surcharge (US), dr 3	ained (D), c	drained surchar	ge (DS)	-
	DBIN	Derryadd Wind Farm						Completed by: Date:	KG/CE 10/03/2025					
	На	zard factors	U	Va US	lue D	DS	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Factor of	Safety		12.0	4.5	9.7	7.8	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.6m. Slope angle: 4º.
		Distance to previous slides (km)		N	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sen	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP216) records: very soft damp grey organic silty clay wth medium cobble content and medium boulder content underlain by moist light grey slightly sandy clayey silty subangular to rounded fine to coarse limestone gravel
		Peat fibres across transition to		١	lo		NA	Yes	Partially	No	3	1	3	Not recorded inTPs
		Peat wetness	Ex	tremely we	t / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	Worst case scenario - TP216 ingress
	General curvature downslope NA Topography Distance to the convexity break (only if previous factor is Convex) NA		NA	-	Planar	Convex	0	1	0	Flat topography.				
actors			NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.				
econdary f	Slope aspect (for high latitudes in northern hemisphere)				NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.		
Š	Distance from watercourse (m)			>:	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
	Hydrology	Surface moisture index (NDMI)		٢	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water (water table level indicator)		Ponded	in drains		NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains
		Evidence of piping (subsurface flow)		Ν	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		٢	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		N 1000 ح	IA mm/vr		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains
	Vogotation	Bush		Wet	lands		NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
	vegetation	Forestry		Good	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence Peat cuts vs contour lines		Cutaway N	/ Turbary IA		NA NA	- Perpendicular	Cutaway / Turbary Oblique	Machine cut Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		NA			NA	Solid	-	Floating	0	1	0	, , , ,
	Time of year for	construction		Late Summ	ier, Autumi	ı	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
												Hazard _{total}	35.5	
								0.0 - 0.3	Hazard Negligible			Max. possible	102	
								0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low <mark>Medium</mark> High			Hazard ₀₋₁	0.35]
	Conse	quence factors		Va	lue				Rating criteria		Rating	Weighting	Score	Comment
voiume o	r potential peat fic	w					0	1	2	3	value			Peat depth: ~0.6m. Slope angle:
(function c	of distance from nea	arest watercourse and peat depth in the		Sn	nall		NA	Small	Medium	Large	1	3	3	4º.
Downslop	e hydrology featu	ires	Mir	nor undefin	ed waterco	urse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proximity Downhill	from defined valle	ey (m)		> ! Hori:	500 vontal		NA	> 500	200 - 500	< 200	1	1	1	Elat topography
Downstre	am aquatic enviro	nment		Sen	sitive			Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential per	at flow path		N			NA	Minor road		supply Regional road	0	1	0	environment is sensitive.
Overhead	lines in potential	peat flow path		Elec	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Buildings	in potential peat f	low path		(MV)	, ΗV) ΙΑ		NA	Farm out-houses	-	(MV, HV)	0	1	0	
Capability	to respond (acces	ss and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	
<u> </u>		,									Со	nsequences _{total}	13	
								0.0 - 0.3	sequences Negligible			Max. possible	33	
					0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low Medium High		Conse	quences ₀₋₁	0.39]			
								Risk rating						
	Risk					Acti	on requirer	1						
0	0.00 - 0.20	Negligible Normal site investigation				Att					1	Risk rating =	Hazard *	Consequences
0	0.20 - 0.40	Low Targeted site investigatio	on, design o	of specific m	itigation m	easures. Pa	art time sup	pervision during cor	nstruction.	en Fullet		Risk rating =	0.35	0.39 = 0.14
0	0.40 - 0.60 0.60 - 1.00	Medium Avoid construction in the	e area if pos s area	sible. If un	avoidable, o	etailed site	e investigati	ion and design of s	pecific mitigation measur	res. Full time				

CANLIN	& DOUEDT

TOBIN CONSULTING ENGINEERS Location:Turbine 15 (T15)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors	Value				Rating criteria				Rating	Weighting	Score	Comment
			U	US	D	DS	0	1	2	3	value			
Factor of S	Safety		7.80	4.6	6.6	8.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.4m. Slope angle: 2.6º.
		Distance to previous slides (km)		N	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP211) records: Very soft moist grey organic silty CLAY?PEAT with some plant material underlain by firm damp light gravelly silty clay with medium cobble content
		Peat fibres across transition to		N	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Stands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet /	1	2	2	TP dry on excavation	
		General curvature downslope		NA			NA	-	Planar	Convex	0	1	0	Flat topography.
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondar		Slope aspect (for high latitudes in northern hemisphere)	iere) NA				NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)	< 200		NA	> 300	200 - 300	< 200	3	1	3	Greater than 300m from watercourse.		
		Surface moisture index (NDMI)		NA			NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water	Ponded in drains		NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water		
	Hydrology	Evidence of piping (subsurface flow)		N	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		Ν	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied /	Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	Wat postland
	Vegetation	Forestry		Good	growth		NA NA	Good growth	Fair	Stunted growth	2	1.5	2 1.5	wet peatiand
	Peat workings	Peat cuts presence		Cutaway	/ Turbary		NA	-	Cutaway / Turbary	Machine cut	2	1	2	
		Peat cuts vs contour lines		Obl	ique		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		Sc	olid		NA	Solid	-	Floating Late Summer,	1	1	1	Worst case estimate
		construction		Late Summ	er, Autumi		INA	Spring	winter, Early Summer	Autumn	5		3	
									Hazard]		Hazaru _{total}	34.5	
								0.0 - 0.3	Negligible			Max. possible	99	
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.35	
								0.7 - 1.0	High					-
	Conse	quence factors		Va	lue				Rating criteria	-	Rating	Weighting	Score	Comment
Volume of	f potential peat flo	DW		 C m			0	L Cmall		3	value	2	2	Peat depth: ~1.4m. Slope angle:
(function o area)	a bydrology footu	rest watercourse and peat depth in the	N 4 i i					Small Dowl (contained	Minor undefined	Large	1	3	3	2.6º.
Provimity	from defined valle	av (m)	IVIII			lise			watercourse		2		2 1	
Downhill s	slope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstre	am aquatic enviro	nment		Sens	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential pea	at flow path		Loca	road		NA	Minor road	Local road	Regional road	2	1	2	R392 ~500m to the east
Overhead	lines in potential	peat flow path		Electricity	(LV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	2	1	2	
Buildings i	in potential peat fl	ow path		N	IA		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acces	ss and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	
										1	Со	nsequences _{total}	14	
								0.0 - 0.3	Negligible			Max. possible	33	
									Low Medium High		Conse	equences ₀₋₁	0.42]
								Risk rating						
0	Risk	Negligible Normal site investigation				Actio	on required				4	Risk rating =	Hazard *	Consequences
0.20 - 0.40 Low Targeted site investigation, design of specific mitigation measures. Pa							rt time sup	ervision during cor	nstruction.		1	Risk rating =	0.35	0.42 = 0.15
0.40 - 0.60MediumAvoid construction in the area if possible. If unavoidable, detailed site0.60 - 1.00HighAvoid construction in this area.								on and design of s	pecific mitigation measu	res. Full time				

Location:Turbine 16 (T16)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

TOBIN	Derryadd Wind Farm
CONSULTING ENGINEERS	

Hazard factors				V	alue	DS	0	1	Rating criteria	3	Rating	Weighting	Score	Comment
Factor of	Safety		4.50	2.5	3.7	4.3	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.2m. Slope angle: 5.2º.
		Distance to previous slides (km)			NA	1	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression			NA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft ser	nsitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP131) records: Moist brownish grey clayey gravelly subangular to subrounded sandstone and limestone boulders with high cobble content underlain by firm damp light grey very gravelly clay with medium cobble content and medium boulder content
		Peat fibres across transition to			NA		NA	Yes	Partially	No Extremely wet /	0	1	0	Not recorded inTPs
		Peat wetness		Slowly	squeezing		NA	Dry / Stands well	Slowly squeezing	Undiggable	3	2	6	Water ingress 1.2mbgl
		General curvature downslope		NA				-	Planar	Convex	0	1	0	Flat topography.
ry factors	Topography	Distance to the convexity break (only if previous factor is Convex)		NA			NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondary		Slope aspect (for high latitudes in northern hemisphere)			NA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)	> 300			NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.	
		Surface moisture index (NDMI)	NA Ponded in drains				NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water	Ponded in drains NA				NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water
		Significant surface desiccation					NA	-	-	Yes	0	1	0	No evidence of piping. No evidence of significant
		(previous summer was dry?)			NA		NA	-	-	Yes	0	1.5	0	dessication.
		Existing drainage ditches Annual rainfall		< 100	NA 0 mm/vr		NA NA	Down slope < 1000 mm/yr	Varied / Oblique 1000 - 1400 mm/yr	Across slope > 1400 mm/vr	0	1	0	Flat topography, but drains
	Vegetation	Bush		Grassland Good growth			NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
		Forestry Peat cuts presence		Good Cutawa	growth //Turbary		NA NA	Good growth -	Fair Cutaway / Turbary	Stunted growth Machine cut	1 2	1.5 1	1.5	
	Peat workings	Peat cuts vs contour lines	Oblique				NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads			Lato Sumr	NA		NA	Solid	- Winter Farly Summer	Floating Late Summer,	0	1	0	Worst case estimate
				Late Sum	ner, Autuini		NA	0.0 - 0.3	winter, Early Summer	Autumn	5	Hazard	33.5	
									Hazard					
								0.0 - 0.3	Low			Max. possible	99	
								0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.34	
	Conse	equence factors		v	alue		0	1	Rating criteria	3	Rating	Weighting	Score	Comment
Volume o (function o the area)	f potential peat fl of distance from ne	ow arest watercourse and peat depth in		Si	mall		NA	Small	Medium	Large	1	3	3	Peat depth: ~1.2m. Slope angle: 5.2º.
Downslop	e hydrology featu	Ires	м	1inor undefir	ned waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	
Proximity	from defined vall	ley (m)		>	500		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle			Hor	izontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream
Downstre	am aquatic enviro	onment		Ser	nsitive		NA	Non-sensitive	Sensitive	supply	2	1	2	environment is sensitive.
Public roa	ids in potential pe	at flow path		Elec	NA ctricity		NA	Minor road	Local road	Regional road Electricity	0	1	0	
Overnead	innes in potential	peat now path		(M)	V, HV)		NA	Phone lines	Electricity (LV)	(MV, HV)	3	L	3	
Buildings	in potential peat f	flow path			NA		NA	Farm out-houses	-	Dwelling	0	1	0	
Сарарніц	to respond (acce	ss and resources)		6	000		NA	Good	Fair	Poor	Co	nsequences _{total}	13	
								Cor	nsequences			Max nossible	33	
								0.3 - 0.5	Low				55	1
								0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.39	J
								Ri	isk rating					
	Risk					Actio	on required]			
0.00 - 0.20 Negligible Normal site investigation											-	Risk rating =	Hazard *	Consequences
(0.20 - 0.40 0.40 - 0.60	Low Targeted site investigation	e area if no	or specific r	avoidable o	easures. Pa	e investigati	on and design of su	pecific mitigation measure	es. Full time		KISK rating =	0.34	0.39 = 0.13
	1.60 - 1.00	High Avoid construction in the	s area											

Location:Turbine 17 (T17)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

				V	alue				Rating criteria		Rating			Comment
	Ha	Hazard factors Hazard factors Value Value Weighting Score						Comment						
Factor of S	Safety		8.20	3.6	6.7	6.2	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.8m. Slope angle: 4.6º.
	Slide history	Distance to previous slides (km)			NA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of peat movement (e.g. tension cracks, step features, compression features).			NA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Smo	oth rock		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	2	1	2	Nearest TP (130) records: very soft organic gravelly silty clay underlain by soft damp grey silty very gravelly clay with medium cobble content and low boulder content
		Peat fibres across transition to			NA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly	squeezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 1.4mbgl
		General curvature downslope			NA		NA	-	Planar	Convex	0	1	0	Flat topography.
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)			NA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondary		Slope aspect (for high latitudes in northern hemisphere)			NA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)	> 300				NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)			NA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water		Loo	alised		NA	Localised	Ponded in drains	Springs	1	1	1	Significant amount of water
		Evidence of piping (subsurface flow)			NA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)			NA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied	/ Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains
	Vagatation	Bush		Gra	ssland		NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
	vegetation	Forestry		Good	l growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence Peat cuts vs contour lines	Oblique					- Perpendicular	Oblique	Machine cut Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads	NA				NA	Solid	-	Floating	0	1	0	, , , , , , , , , , , , , , , , , , , ,
	Time of year for	r construction		Late Sumi	mer, Autum	n	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1 Hazard _{total}	3	Worst case estimate
								0.0 - 0.3	Hazard Negligible			Max. possible	99	
								0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low Medium High			Hazard ₀₋₁	0.32	
									Rating criteria		Rating			
	Conse	equence factors		V	alue		0	1	2	3	value	Weighting	Score	Comment
(function o (the area)	f potential peat fl if distance from ne	ow arest watercourse and peat depth in		S	mall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.8m. Slope angle: 4.6 ^o .
Downslop	e hydrology featu	ires	Mir	nor undefi	ned waterco	ourse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proximity	from defined val	ley (m)		>	500		NA	> 500	200 - 500	< 200	1	1	1	Flat to a serve the
Downhill s	siope angle			Hor	izontal		NA	Horizontal	Intermediate	Steep Drinking water	1		1	Flat topography Assumed downstream
Downstrea	am aquatic enviro	onment		Sei	nsitive		NA	Non-sensitive	Sensitive	supply	2	1	2	environment is sensitive.
Public roa	as in potential pe	at flow path		Flee	NA ctricity		NA	Minor road	Local road	Regional road	0		0	
Overhead	lines in potential	peat flow path		(M	V, HV)		NA	Phone lines	Electricity (LV)	(MV, HV)	3	1	3	
Buildings i	in potential peat f	flow path			NA		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acce	ss and resources)		0	iood		NA	Good	Fair	Poor	1	1	1	
								Con	sequences	1	Co	nsequences _{tota}	13	
								0.0 - 0.3	Negligible			Max. possible	33	
								0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.39]
								Ri	sk rating					
	Rick	1				Δrti	on required	1			1			
KISK Action required 0.00 - 0.20 Negligible												Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	on, design c	of specific i	nitigation m	ieasures. Pa	art time sup	ervision during cor	struction.			Risk rating =	0.32	0.39 = 0.13
0	.40 - 0.60	Medium Avoid construction in the	area if pos	ssible. If ur	avoidable,	detailed site	e investigati	on and design of sp	pecific mitigation measur	res. Full time	-			

GAVIN	& DOHERT

TOBIN CONSULTING ENGINEERS Location:Turbine 18 (T18)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors	Value				0	1	2	Rating	Weighting	Score	Comment	
Factor of S	Safety		3.00	3.3	2.6 כ	4.1	-	≥ 1.3	1.3 - 1.0	<u> </u>	1	10	10	Peat depth: ~3.1m. Slope angle: 3.18º.
		Distance to previous slides (km)		N	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	itive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TPS (TP135 and TP136) record: Firm damp ligh grey organic clayey silt underlain by stiff dark grey gravelly CLAY with medium cobble content and soft damp grey sandy gravelly silt with low cobble content
		Peat fibres across transition to		N	A		NA	Yes	Partially	No	0	1	0	No infromation provided in logs
		Peat wetness		Dry / Sta	nds well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TP dry on excavation
		General curvature downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.
actors	Topography	Distance to the convexity break (only if previous factor is Convex)		NA			NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
condary fa		Slope aspect (for high latitudes in northern hemisphere)		NA				SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
Se		Distance from watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		Ν	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water (water table level indicator)	Springs			NA	Localised	Ponded in drains	Springs	3	1	3	Significant amount of water ponded in drains	
		Evidence of piping (subsurface flow)		Ν	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		N	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches Annual rainfall		Varied / < 1000	Oblique mm/yr		NA NA	Down slope < 1000 mm/yr	Varied / Oblique 1000 - 1400 mm/yr	Across slope > 1400 mm/yr	2	1	2 1	Flat topography, but drains
	Vegetation	Bush	Wetlands				NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
		Forestry Peat cuts presence		Good g	growth / Turbary		NA NA	Good growth	Fair Cutaway / Turbary	Stunted growth Machine cut	1	1.5	1.5	
	Peat workings	Peat cuts vs contour lines		N	A		NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		N	A		NA	Solid	-	Floating Late Summer,	0	1	0	
	Time of year for	construction		Late Summ	er, Autumn		NA	Spring	winter, Early Summer	Autumn	3	Hazard	3	worst case estimate
								0.0 - 0.3	Hazard			total	99 99	
									Negligible Low			Max. possible		
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.32]
								0.7 - 1.0	High	1				
	Conse	quence factors		Va	lue		0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
Volume of (function o	f potential peat flo f distance from near	w rest watercourse and peat depth in the		Med	lium		NA	Small	Medium	Large	2	3	6	Peat depth: ~3.1m. Slope angle: 3.18º.
Downslop	e hydrology featu	res	Mir	or undefine	ed watercou	irse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined valle	ey (m)		> 5	00		NA	> 500	200 - 500	< 200	1	1	1	Flat tanagraphy
Downstre		nment		Sons	itivo			Non-sensitive	Sensitive	Drinking water	2	1		Assumed downstream
Public roa	ds in notential nea	at flow path		Minor	road			Minor road		supply Regional road	1	1	2	environment is sensitive. Farm road ~400m south
Overhead	lines in potential u	neat flow path		Elect	ricity		NΔ	Phone lines		Electricity	3	1	3	
Duildinge				(MV,	HV)					(MV, HV)		-		
Capability	to respond (acces	s and resources)		Go	A od		NA	Good	- Fair	Poor	0	1	0	
		,							-	1	Со	nsequences _{total}	17	
								0.0 - 0.3	sequences Negligible			Max. possible	33	
								0.3 - 0.5	Low		Conco	<u>auoncoc</u>	0.52	1
								0.5 - 0.7	High		Conse	quences ₀₋₁	0.52]
Risk rating														
Risk Action required 0.00 - 0.20 Negligible Normal site investigation												Risk rating -	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	n, design of	specific mit	igation mea	asures. Part	time super	rvision during cons	truction.			Risk rating =	0.32	0.52 = 0.16
0	.40 - 0.60	Medium Avoid construction in the	area if poss	<mark>ible. If unav</mark>	voidable, de	tailed site i	nvestigatio	n and design of spe	cific mitigation measures	s. Full time				

GAVIN & DOHERTY GEOSOLUTIONS		Peat Stability Risk Assessment (PS	SRA)					Location: Conditions: Inspected on:	Turbine 19 (T19) Undrained (U), undrain 8th-10th November 202	ed surcharge (US), dra 23	ained (D), d	rained surcharg	e (DS)			
	DBIN	Derryadd Wind Farm						Inspected by: Completed by: Date:	BMc and MD KG/CE 10/03/2025							
		roud factors		Va	lue				Rating criteria		Rating	Moighting	Cooro	Commont		
	Па		U	US	D	DS	0	1	2	3	value	weighting	Score	Comment		
Factor of S	Safety		6.70	3.2	5.4	5.6	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.9m. Slope angle: 2.7º.		
	Slide history	Distance to previous slides (km)		Ν	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km		
		Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.		
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Fir	m glacial til	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TPs (TP170 and TP171) record: soft moist orangish grey organic silty very gravelly clay and organish grey cayey gravelly angular to subrounded limestone and snadstone boulders		
		Peat fibres across transition to		N	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs TP170 and TP171 terminated due to		
		Peat wetness	Ex	tremely we	t / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	0	2	0	sidewall collapse with water ingress at 1.6mbgl (TP170) and 2.7mbgl (TP171)		
		General curvature downslope	NA				NA	-	Planar	Convex	0	1	0	Flat topography.		
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)		Ν	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.		
Secondar		Slope aspect (for high latitudes in northern hemisphere)		N	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.		
		Distance from watercourse (m)	> 300			> 300		> 300		> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
	Hydrology	Surface moisture index (NDMI)	NA				NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable		
		Surface water (water table level indicator)	Springs				NA	Localised	Ponded in drains	Springs	3	1	3	Significant amount of water ponded in drains		
		Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.		
		Significant surface desiccation (previous summer was dry?)		N	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.		
		Existing drainage ditches	Varied / Oblique < 1000 mm/yr			NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains			
	Vegetation	Bush	Wetlands			NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland			
		Forestry	Good growth			NA	Good growth	Fair	Stunted growth	1	1.5	1.5				
	Peat workings	Peat cuts vs contour lines	Cutaway / Turbary NA			NA	- Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography			
	Existing loads	Roads		NA			NA	Solid	-	Floating	0	1	0			
	Time of year for	construction	Late Summer, Autumn				NA	Spring	Winter, Early Summer	Autumn	3	1	3	Worst case estimate		
									Hazard	1		Hazard _{total}	27.5			
								0.0 - 0.3	Negligible			Max. possible	96			
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.29			
								0.7 - 1.0	High	J						
	Conse	quence factors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment		
volume o (function o	f distance from near	w rest watercourse and peat depth in the		Sm	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.9m. Slope angle:		
Downslop	e hydrology featur	es	Mir	nor undefine	ed waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	2.7		
Proximity	from defined valle	y (m)		> 5	500		NA	> 500	200 - 500	< 200	1	1	1			
Downhill s	slope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream		
Downstre Public roa	ds in potential pea	nment		Sens	A		NA NA	Non-sensitive Minor road	Sensitive	supply Regional road	2	1	2	environment is sensitive. Farm road ~600m to the west		
Overhead	lines in potential p	peat flow path		Elect	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3			
Buildings	in potential peat fl	ow path		N	A		NA	Farm out-houses	-	Dwelling	0	1	0			
Capability to respond (access and resources) Good N								Good	Fair	Poor	1	1	1			
										1	Со	nsequences _{total}	13			
									Negligible			Max. possible	33			
									Low <mark>Medium</mark> High		Conse	quences ₀₋₁	0.39			
Risk rating																
	Risk					Actic	on required]					
C	.00 - 0.20	Negligible Normal site investigation				Aut						Risk rating =	Hazard *	Consequences		
C C	.20 - 0.40 .40 - 0.60	Low Targeted site investigation Medium Avoid construction in the	n, design of <mark>area if poss</mark>	specific mi sible. If una	tigation me voidable, de	asures. Parietailed site i	t time super nvestigation	rvision during cons	truction. ecific mitigation measure	s. Full time		Risk rating =	0.29	0.39 = 0.11		
C	.60 - 1.00	High Avoid construction in this	area.								1					

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CAVIN	8 DOHER	TY

TOBBIN CONSULTING ENGINEERS Derryadd Wind Farm Location:Turbine 20 (T20)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors		Va	lue				Rating criteria	-	Rating	Weighting	Score	Comment
Factor of	Safety		3.50	US 7	2.9 D	3.4 DS	-	1 ≥ 1.3	2	3 ≤ 1.0	value 1	10	10	Peat depth: ~1.3m. Slope angle: 6.5º.
	Slide history	Distance to previous slides (km)		Ν	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	itive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TPs (TP152 and TP153) records: very soft moist light greenish grey organic gravelly clayey silt with low cobble content and low boulder content and very soft moist light grey organic gravelly silty clay with low cobble content and low boulder content
		Peat fibres across transition to		Ν	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness	Slowly squeezing				NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	0	2	0	Ingress of water at 0.80mbgl in TP153
dary factors		General curvature downslope	NA				NA	-	Planar	Convex	0	1	0	Flat topography.
	Topography	Distance to the convexity break (only if previous factor is Convex)	NA				NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secon		Slope aspect (for high latitudes in northern hemisphere)	NA			NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.	
		Distance from watercourse (m)	> 300				NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)	NA				NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water		Loca	lised		NA	Localised	Ponded in drains	Springs	1	1	1	Significant amount of water
		Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		Ν	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied /	Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains
		Bush		Wetl	ands		NA	Dry heather	Grassland	Wetlands	3	1	3	Wet peatland
	Vegetation	Forestry		Good န	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence		Cutaway	/ Turbary		NA	- Perpendicular	Cutaway / Turbary	Machine cut	2	1	2	Relatively flat topography
	Existing loads	Roads		So	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction		Late Summ	er, Autumn	l	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
							<u>.</u>	0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Hazard Negligible Low Medium High			Hazard _{total} Max. possible Hazard ₀₋₁	28.5 96 0.30	
	Conse	quence factors		Va	lue				Rating criteria	-	Rating	Weighting	Score	Comment
Volume o (function c	t potential peat flo of distance from nea	bw Irest watercourse and peat depth in the		Mec	lium		0 NA	1 Small	2 Medium	Large	value 2	3	6	Peat depth: ~1.3m. Slope angle: 6.5º.
Downslop	e hydrology featu	res	Min	or undefine	ed waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	
Proximity	from defined valle	ey (m)		> 5	00		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstre	am aquatic enviro	nment		Sens	itive		NA	Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream environment is sensitive.
Public roa	ds in potential pea	at flow path		N	A		NA	Minor road	Local road	Regional road	0	1	0	
Overhead	lines in potential	peat flow path		Elect (MV)	ricity HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings	in potential peat fl	low path		Dwe	lling		NA	Farm out-houses	-	Dwelling	3	1	3	farmhouse ~800m south
Capability	to respond (acces	ss and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	
								Con 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	sequences Negligible Low Medium High		Cor Conse	Max. possible quences ₀₋₁	19 33 0.58	
Risk rating														
	Risk	Noglizible Normal site investigation				Actio	on required					Dick matter	Lis-and 4	Conconuonas
0	.20 - 0.20	Low Targeted site investigation	n, design o	f specific m	itigation me	easures. Pa	rt time supe	ervision during cor	struction.			Risk rating =	0.30	0.58 = 0.17
0	.40 - 0.60	Medium Avoid construction in the	area if pos	sible. If una	voidable, d	etailed site	investigatio	on and design of sp	pecific mitigation measu	res. Full time			2.00	0.17
0	60 - 1 00	High Avoid construction in this	sarea											

Derryadd Wind Farm TOBIN CONSULTING ENGINEERS

Turbine 21 (T21) Location: Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS) Conditions: 8th-10th November 2023 Inspected on: BMc and MD Inspected by: Completed by: KG/CE Date: 10/03/2025

	Haz	zard factors		Value			0	1	Rating criteria	3	Rating	Weighting	Score	Comment	
Factor of	Safety			18.90	6.3	15.3	10.9	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.5. Slope angle: 5.03º.
		Distance to p	previous slides (km)		N	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of tension cracks, features).	peat movement (e.g. step features, compression		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type			Gravel / Firi	m glacial til	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (T175) records: soft moist light grey gravelly silty clay with medium cobble content underlain by stiff light greyish brown silty very gravelly clay with high cobble content and medium boulder content
		Peat fibres a subsoil	cross transition to		Ν	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetnes	s	Dry / Stands well			NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TP dry on excavation	
	Topography	General curv	vature downslope	NA			NA	-	Planar	Convex	0	1	0	Flat topography.	
rry factors		Distance to t (only if previou:	the convexity break s factor is Convex)	NA				NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Seconda		Slope aspect (for high latitud	t des in northern hemisphere)	NA				NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance from	m watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface mois	sture index (NDMI)	NA				NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface wate	er	Ponded in drains				NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water
	,	Evidence of	piping (subsurface flow)	NA		NA	-	-	Yes	0	1	0	No evidence of piping.		
		Significant su (previous sumn	urface desiccation ner was dry?)		Ν	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drain Annual rainfa	nage ditches all		/ Varied < < 1000	Oblique mm/yr		NA NA	Down slope < 1000 mm/yr	Varied / Oblique 1000 - 1400 mm/yr	Across slope > 1400 mm/yr	2	1	2	Flat topography, but drains
	Vegetation	Bush			Grass	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland
		Forestry Peat cuts pre	esence	Cutaway / Turbary				NA NA	Good growth	Fair Cutaway / Turbary	Stunted growth Machine cut	1	1.5 1	1.5 2	
	Peat workings	Peat cuts vs	contour lines		Obli	que		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		Late Summer, Autumn				NA	Solid	-	Floating Late Summer,	0	1	0	Warst asso estimate
		construction			Late Summ	er, Autumn		NA	Spring	Winter, Early Summer	Autumn	5	Hazard	20.5	
									0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Hazard Negligible Low Medium High			Hazard _{total} Max. possible Hazard ₀₋₁	96 0.31]
	Consec	quence facto	vrs		Va	lue		0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
volume o (function c area)	i potential peat flo	ow rest watercour	rse and peat depth in the		Sm	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.5. Slope angle: 5.03 [°] .
Downslop	e hydrology featu	res		Mir	nor undefine	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined valle	ey (m)			> 5	600 antsi		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle				Horiz	ontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream
Public roc	am aquatic enviro	at flow nath			Sens	A			Minor road		supply Regional road	0		2	environment is sensitive.
Overhead	l lines in potential i	peat flow path	h		Elect	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
	· · · · · · · · · · · · · · · · · · ·				(MV)	, HV)					(MV, HV)		_		
Canahility	to respond (acces	s and resource	ces)			od			Good	- Fair	Poor	1	1	1	
Capability to respond (access and resources) Good									0000	T di	1001	Сог	nsequences _{total}	13	
									Con	sequences Negligible			Max. possible	33	
									0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low <mark>Medium</mark> High		Conse	quences ₀₋₁	0.39]
									Risk rating						
Risk Act															
0	0.00 - 0.20	Negligible N	lormal site investigation	n design o	of specific m	itigation m	asures Da	rt time cup	ervision during con	struction			Risk rating =	Hazard *	Consequences
C	0.40 - 0.60	Medium A	woid construction in the	area if pos	ssible. If una	voidable, d	etailed site	investigati	on and design of sp	pecific mitigation measu	res. Full time			0.51	0.12
C	0.60 - 1.00	High A	void construction in this	s area.											


Location:Turbine 22 (TC22)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

TOBIN	Derryadd Wind Farm
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	Нэ	zard factors		Value					Rating criteria					Score	Comment																					
	110			U	US	D	DS	0	1	2	3	value	Weighting																							
Factor of S	Safety			3.40	2.1	2.8	3.8	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.7m. Slope angle: 5.03º.																					
	Slide history	Distance to previ	ious slides (km)		N	٩		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km																					
		Evidence of peat tension cracks, step features).	movement (e.g. features, compression		N	٩		NA	-	-	Yes	0	2	0	No evidence of peat movement.																					
	Subsoil conditions (visible in trial pits)	Subsoil type			Gravel / Firn	n glacial till		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TPs (TPT24 and TP182) record: soft grey silty caly with high boulder content and fim grey silty gravelly very sandy clay with high cobble content and high boulder content																					
		Peat fibres across subsoil	s transition to		N	4		NA	Yes	Partially	No	0	1	0	Not recorded inTPs																					
		Peat wetness			Slowly sq	lueezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Water ingress at 1.0mbgl (TP182) and 2.5mbgl (TPT24)																					
		General curvatur	re downslope		N	Ą		NA	-	Planar	Convex	0	1	0	Flat topography.																					
factors	Topography Distance to the convexity break (only if previous factor is Convex) NA		NA				NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.																						
econdary		Slope aspect (for high latitudes in hemisphere)	n northern	NA			NA			NA			NA			NA			NA			NA			NA		NA			SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
5		Distance from wa	atercourse (m)	> 300			> 300		> 300		> 300		> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.																	
		Surface moisture	e index (NDMI)	NA				NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable																					
	Hydrology	Surface water (water table level ind	dicator)	Ponded in drains		Ponded in drains		Ponded in drains		NA	Localised	Ponded in drains	Springs	2	1	2	Significant amount of water ponded in drains																			
		Evidence of pipin	ng (subsurface flow)		N	٩		NA	-	-	Yes	0	1	0	No evidence of piping.																					
		Significant surfac (previous summer w	ce desiccation vas dry?)		N	Ą		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.																					
		Existing drainage	e ditches	Varied / Oblique			NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains																						
		Annual rainfall			< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1																						
	Vegetation	Bush			Grass	land		NA	Dry heather	Grassland	Wetlands	2	1	2	Wet peatland																					
		Forestry			Good g	rowth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5																						
	Peat workings	Peat cuts present	ce cour lines	Oblique NA Late Summer, Autumn			NA	- Bornondicular	Cutaway / Turbary	Machine cut	2	1	2	Polatively flat tonography																						
	Existing loads	Roads	our imes				NA			NA	Solid	-	Floating	0	1	0																				
	Time of year for	construction					NA	Spring	Winter, Early Summer	Late Summer,	3	1	3	Worst case estimate																						
											Autunni		Hazard _{total}	31.5																						
									0.0 - 0.3	Hazard Negligible			Max. possible	96																						
									0.3 - 0.5 0.5 - 0.7	Low Medium			Hazard ₀₋₁	0.33]																					
									0.7 - 1.0	High					-																					
	Conso	quanca factors			Val					Rating criteria		Rating	Woighting	Score	Comment																					
Volume of					Mod	ium		0	1 Small	2 Madium	3	value	2	6	Peat denth: ~1.7m. Slone angle:																					
Downslop	e hydrology featu	ros		Min		d watercou	Irco	NA	Bowl / contained	Minor undefined	Valley	2	1	2																						
Drovimity	from dofined valu					00	150			watercourse		2	1	1																						
Downhill s	lope angle	ey (III)			Horizo	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography																					
Downstrea	am aquatic enviro	onment			Sensi	itive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream																					
Public roa	ds in notential nea	at flow nath			N	Δ		NΔ	Minor road	Local road	supply Regional road	0	1	0	environment is sensitive.																					
Overbace	lines in notantial	neat flow nath			Electr	icity			Dhono lines	Electricity (11)	Electricity	2	1	2																						
Overneau		pear now parn			(MV,	HV)		INA	Phone lines	Electricity (LV)	(MV, HV)	5	1	5																						
Buildings i	n potential peat f	low path			N/	A		NA	Farm out-houses	- Epir	Dwelling	0	1	0																						
Сарабінту		ss and resources			900	Ju		NA	Guu	Fdii	POOI	 Cor	Isequences total	16																						
									Con	sequences																										
									0.0 - 0.3	Negligible			Max. possible	33																						
									0.5 - 0.5	Medium		Conse	quences of a	0.48]																					
									0.7 - 1.0	High		2			1																					
									Ris	к rating																										
	Risk						Actio	n required																												
0	.00 - 0.20	- 0.20 Negligible Normal site investigation											Risk rating =	Hazard *	Consequences																					
0	.20 - 0.40	Low Targe	eted site investigatio	n, design o	f specific mi	tigation me	asures. Pa	t time supe	ervision during con	struction.			Risk rating =	0.33	0.48 = 0.16																					
0	.40 - 0.60	Medium Avoid	construction in the	area if pos	sible. If unav	voidable, d	etailed site	investigatio	on and design of sp	ecific mitigation measur	es. Full time																									



Derryadd Wind Farm

Location:SubstationConditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Haz	ard factors	-	Value				Rating criteria					Weighting	Score	Comment
				U	US	D	DS	0	1	2	3	value			
Factor of	Safety			1.90	1.2	1.6	2.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	2	10	20	Peat depth: ~1.7m. Slope angle: 8.85º.
	Slide history	Distance to prev	vious slides (km)		N	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	,	EVIDENCE OF PEA tension cracks, step features).	at movement (e.g. o features, compression		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type			Soft sens	itive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP282) records: Soft damp grey organic slightly gravelly sandy silt underlaine by firm damp grey silty very gravelly clay with medium cobble content
		Peat fibres acros	oss transition to		N	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness			Slowly so	queezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	2	2	4	Ingress of water at 1.60mbgl
		General curvatu	ure downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.
S	Topography	Distance to the (only if previous fac	convexity break ctor is Convex)		N	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
ary factor		Slope aspect (for high latitudes ir	in northern hemisphere)		N	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
Second		Distance from w	watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moistur	re index (NDMI)		N	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water (water table level in	ndicator)		N	A		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of pipi	ing (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surfa (previous summer v	ace desiccation was dry?)		N	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainag	ge ditches		N	A		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall			< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush			Dry he	eather		NA	Dry heather	Grassland	Wetlands	1	1	1	
		Porestry Peat cuts preser	nce		Cutaway	A / Turbarv		NA NA	Good growth	Fair Cutaway / Turbary	Machine cut	2	1.5	2	
	Peat workings	Peat cuts vs con	ntour lines		N.	A		NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads			So	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for o	construction			Late Summe	er, Autumn		NA	Spring	Winter, Early Summer	Autumn	3	1	3	Worst case estimate
											7		Hazard _{total}	36	
									0.0 - 0.3	Hazard Negligible	-		Max. possible	99	
									0.3 - 0.5	Low					
									0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.36	
									0.1 2.0		_				
	Consec	quence factors			Val	lue		0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
Volume o (function c area)	f potential peat flo of distance from near	w est watercourse a	and peat depth in the		Med	lium		NA	Small	Medium	Large	2	3	6	Peat depth: ~1.7m. Slope angle: 8.85º.
Downslop	e hydrology featur	es			N	A		NA	Bowl / contained	Minor undefined	Valley	0	1	0	
Proximity	from defined valle	y (m)			> 5	00		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle				Horizo	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstre	am aquatic enviror	nment			Sens	itive		NA	Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream environment is sensitive.
Public roa	ds in potential pea	t flow path			Regiona	al road		NA	Minor road	Local road	Regional road	3	1	3	N63 ~150m to the south
Overhead	lines in potential p	eat flow path			Elect	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Puildings	in notontial nost fl	ow path			(1017,	<u> </u>		NIA	Form out houses				1		
Capability	to respond (access	s and resources)			Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
		· · · · · · · · · · · · · · · · · · ·										Co	nsequences _{total}	17	
									Con	sequences	-		Max possible	22	
									0.3 - 0.5	Low				33	
									0.5 - 0.7	Medium		Conse	quences ₀₋₁	0.52	
									0.7 - 1.0	High					
										Risk rating					
	Risk	Negligible Neg	mal site investigation				Actio	n required					Rick rating -	La	Consequences
0	0.20 - 0.40	Low Targ	geted site investigation	n, design of	specific mit	tigation me	asures. Part	time super	vision during const	truction.			Risk rating =	0.36	0.52 = 0.19
C	.40 - 0.60	Medium Avoi	id construction in the	area if pos	sible. If unav	voidable, de	tailed site i	nvestigatio	n and design of spe	ecific mitigation measur	es. Full time		5		0.15
C).60 - 1.00	High Avoi	id construction in this	area.											

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GAVIN	2	DOHERTY

TOBIN CONSULTING ENGINEERS Location:Battery Storage CompoundConditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Har	ard factors	Value				Rating criteria					Weighting	Score	Comment
	F1d2		U	US	D	DS	0	1	2	3	value	weighting	50012	Comment
Factor of S	Safety		4.10	1.9	3.3	3.4	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.9m. Slope angle: 7.9º.
		Distance to previous slides (km)		N	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Firr	n glacial til	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP283) records: moist grey silty sandy angular to subrounded fine to coarse limestone and quartz GRAVEI underlain by firm damp grey gravelly silty CLAY with medium cobble content and medium boulder content
		Peat fibres across transition to subsoil		N	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Extremely wet	: / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	Pit unstable with water ingress at 0.5mbgl and 2.1mbgl (TP283)
		General curvature downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.
dary factors	Topography	Distance to the convexity break (only if previous factor is Convex)		N	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secon		Slope aspect (for high latitudes in northern hemisphere)		N	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		N	A		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		N	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied /	Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush		Grass	land		NA	Dry heather	Grassland	Wetlands Stunted growth	2	1	2	
		Peat cuts presence		Cutaway	/ Turbary		NA NA	-	Cutaway / Turbary	Machine cut	2	1.5	2	
	Peat workings	Peat cuts vs contour lines		Obli	que		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		Sol	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for o	construction		Late Summe	er, Autumn	1	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
									Hazard			Hazard _{total}	32.5	
								0.0 - 0.3	Negligible			Max. possible	96	
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.34]
								0.7 - 1.0	High					-
	Conce			Val					Rating criteria		Rating	Maighting	Coore	Comment
Volume of (function o	f potential peat flo	w est watercourse and peat depth in the		Sm	all		0 NA	1 Small	2 Medium	3 Large	value	3	3	Peat depth: ~0.9m. Slope angle: 7.9º.
area) Downslop	e hydrology featur	es		Minor undefine	d waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	
Proximity	from defined valle	y (m)		> 5	00		NA	> 500	200 - 500	< 200	1	11	1	
Downhill s	lope angle			Horizo	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstrea	am aquatic enviror	nment		Sens	itive		NA	Non-sensitive	Sensitive	טרוחגוng water supply	2	1	2	Assumed downstream environment is sensitive.
Public roa	ds in potential pea	t flow path		Regiona	al road		NA	Minor road	Local road	Regional road	3	1	3	N63 ~ 300m to the south
Overhead	lines in potential p	eat flow path		Electi	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Buildings i	n potential peat fl	ow path		(IVIV, N/	A		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acces	s and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
										1	Со	nsequences _{total}	16	
								0.0 - 0.3	sequences Negligible			Max. possible	33	
								0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.48]
									Risk rating					
	Risk	Negligible Normal site investigation	<u> </u>			Actio	n required					Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	on, desig	n of specific mit	igation me	asures. Par	time super	rvision during cons	truction.			Risk rating =	0.34	0.48 = 0.16
0	<mark>.40</mark> - 0.60	Medium Avoid construction in the	e area if p	possible. If unav	voidable, d	<mark>etailed site</mark> i	nvestigatio	n and design of spe	ecific mitigation measure	s. Full time		Ϋ́		0.20
0	.60 - 1.00	High Avoid construction in th	s area.											

GAVIN	& DOHERTY

Derryadd Wind Farm

Location:Peat Deposition AreaConditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Нэ	zard factors		Val	lue				Rating criteria		Rating	Weighting	Score	Comment
	Пd		U	US	D	DS	0	1	2	3	value	weighting	30016	Comment
Factor of S	Gafety		8.40	3.5	6.80	9	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.7m. Slope angle: 4.9º.
		Distance to previous slides (km)		N	A		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Silde history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Firr	n glacial till		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP284_ records: Firm damp grey slightly sandy clayey SILT with low boulder content underlain by firm damp grey slightly sandy slight gravelly SILT with medium cobble content
		Peat fibres across transition to subsoil		N	0		NA	Yes	Partially	No	3	1	3	fibrous peat with decaying wood recorded in logs
		Peat wetness		Dry / Sta	nds well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TP dry on excavation
		General curvature downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.
ry factors	Topography	Distance to the convexity break (only if previous factor is Convex)		N	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Seconda		Slope aspect (for high latitudes in northern hemisphere)		N	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		N	A		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)	NA			NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.	
		Existing drainage ditches		N	A		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush Forestry		Grass	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	
		Peat cuts presence		Cutaway	/ Turbary		NA	-	Cutaway / Turbary	Machine cut	2	1.5	2	
	Peat workings	Peat cuts vs contour lines		Obli	que		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		So	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction		Late Summ	er, Autumn		NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
												Hazard _{total}	29.5	
									Hazard				00	
								0.0 - 0.3	Low			Max. possible	99	
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.30]
								0.7 - 1.0	High					-
	6			N/-1					Rating criteria		Rating	Mainheime	Gaana	2 mm ant
	Conse	quence factors		va	lue		0	1	2	3	value	weighting	Score	Comment
Volume of	potential peat flo	W		Sm	all		NA	Small	Medium Minor undefined	Large	1	3	3	Peat depth: ~0.7m. Slope angle:
Downslop	e hydrology featur	es	Mir	nor undefine	ed watercou	rse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proximity	from defined valle	y (m)		> 5	00		NA	> 500	200 - 500	< 200	1	1	1	
Downnills	lope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream environment
Downstrea	am aquatic enviro	nment		Sens	itive		NA	Non-sensitive	Sensitive	supply	2	1	2	is sensitive.
Public roa	ds in potential pea	at flow path		Region	al road		NA	Minor road	Local road	Regional road	3	1	3	N63 ~ 300m to the south
Overhead	lines in potential p	peat flow path		Electi (MV,	HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings i	n potential peat fl	ow path		N	A		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acces	s and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
								6		1	Co	nsequences _{total}	16	
								0.0 - 0.3	Negligible			Max. possible	33	
								0.3 - 0.5	Low			•		
								0.5 - 0.7	Medium		Conse	quences ₀₋₁	0.48	J
								0.7 - 1.0	півц					
								Risk rating						
	Dick					A atia	n required				7			
0	.00 - 0.20	Negligible Normal site investigation				ACCIO	arequired				1	Risk rating =	Hazard *	Consequences
0	0.20 - 0.40 Low Targeted site investigation, design of specific mitigation measures. Part time supervision during construction.											Risk rating =	0.30	0.48 = 0.14
0	0.20 - 0.40 Medium Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time 0.40 - 0.60 Medium Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time													· · · · · · · · · · · · · · · · · · ·

CAVIN	9.	DOHERTY

Derryadd Wind Farm

Location:Temporary Peat Deposition AreaConditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors			Va	lue	T		I	Rating criteria		Rating	Weighting	Score	Comment
				U	US	D	DS	0	1	2	3	value			
Factor of S	Safety	1		8.90	3.3	7.2	5.8	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.6m. Slope angle: 5.4º.
	Slide history	Distance to	previous slides (km)		Ν	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of tension cracks, features).	peat movement (e.g. , step features, compression		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type	2		Gravel / Fir	m glacial ti	II	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP284_ records: Firm damp grey slightly sandy clayey SILT with low boulder content underlain by firm damp grey slightly sandy slight gravelly SILT with medium cobble content
		Peat fibres a subsoil	across transition to		Ν	lo		NA	Yes	Partially	No	3	1	3	fibrous peat with decaying wood recorded in logs
		Peat wetnes	SS		Dry / Sta	ands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TP dry on excavation
IS		General cur	vature downslope		Ν	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
ondary facto	Topography	Distance to (only if previou	the convexity break us factor is Convex)		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Sec		Slope aspec (for high latitu	t des in northern hemisphere)		Ν	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance fro	om watercourse (m)		>3	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moi	sture index (NDMI)		Ν	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface wat	er		Ν	IA		NA	Localised	Ponded in drains	Springs	0	1	0	
	inyurology	Evidence of	piping (subsurface flow)		NA		NA	-	-	Yes	0	1	0	No evidence of piping.	
		Significant s (previous sumi	surface desiccation mer was dry?)		Ν	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drai	inage ditches fall		N < 1000	IA mm/vr		NA NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains
	Vegetation	Bush			Gras	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	
		Forestry			Good	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts pr	contour lines		Obl	/ Turbary ique		NA NA	- Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads			Sc	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction			Late Summ	er, Autum	ו	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
								_		Hozard	1		Hazard _{total}	29.5	
									0.0 - 0.3	Negligible			Max. possible	99	
									0.3 - 0.5	Low Medium			Hazard 0-1	0.30	1
									0.7 - 1.0	High					_
	Conse	quence facto	ors		Va	lue				Rating criteria		Rating	Weighting	Score	Comment
Volume of	f potential peat flo	ow			Sn	nall		0 NA	1 Small	2 Medium	3	value	3	3	Peat depth: ~0.6m. Slope angle:
Downslop	e hydrology featu	res		Mir	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	
Proximity	from defined valle	ey (m)			> 5	500		NA	> 500	watercourse 200 - 500	< 200	1	1	1	
Downhill s	slope angle				Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstrea	am aquatic enviro	nment			Sens	sitive		NA	Non-sensitive	Sensitive	orinking water supply	2	1	2	Assumed downstream environment is sensitive.
Public roa	ds in potential pea	at flow path			Region	al road		NA	Minor road	Local road	Regional road	3	1	3	N63 ~ 350m to the north
Overhead	lines in potential	peat flow pat	h		Elect (MV	ricity , HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings i	n potential peat f	low path			Ν	IA		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acces	ss and resour	ces)		Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
				Good					Con 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	sequences Negligible Low Medium High		Co Conse	Max. possible quences ₀₋₁	16 33 0.48	
									Risk rating						
												1			
0	Risk .00 - 0.20	Negligihle	Normal site investigation				Actio	on required					Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low	Targeted site investigatio	n, design o	f specific mi	tigation m	easures. Par	t time supe	rvision during cons	truction.		1	Risk rating =	0.30	0.48 = 0.14
0	0.40 - 0.60 Medium Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time 0.60 - 1.00 High Avoid construction in this area										es. Full time				

GAVIN 8 GEOSC	DOLUTIONS	Peat Stabi	lity Risk Assessment (PS	SRA)					Location: Conditions: Inspected on: Inspected by:	Construction Compound Undrained (U), undrain 8th-10th November 202 BMc and MD	d 1 ed surcharge (US), dra 3	ined (D), d	rained surcharg	e (DS)	
	DBIN	Derryadd \	Wind Farm						Completed by: Date:	KG/CE 10/03/2025					
	Haz	zard factors			Va	lue				Rating criteria		Rating	Weighting	Score	Comment
				<u> </u>	US	D	DS	0		2	3	value			Peat denth: ~2 52m. Slone angle:
Factor of S	Safety			2.4	1.7	2.1	3.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	4.71º.
		Distance to	previous slides (km)		[IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	tension cracks	peat movement (e.g. , step features, compression		I	A		NA	-	-	Yes	0	2	0	No evidence of peat movement.
		icatures).													
	Subsoil conditions (visible in trial pits)	Subsoil type	2		Soft sen	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPAR04) records very soft moist grey organic laminated SILT with some plant material
		Peat fibres a	across transition to			IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetne	ss	Ex	tremely we	et / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	0.6mbgl and 2.3mbgl with sidewall collapse
		General cur	vature downslope		ſ	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
factors	Topography	Distance to (only if previou	the convexity break us factor is Convex)		I	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondary		Slope aspec (for high latitu	t des in northern hemisphere)		ſ	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance fro	om watercourse (m)		>	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moi	isture index (NDMI)		I	NA .		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hvdrology	Surface wat	er		I	NA		NA	Localised	Ponded in drains	Springs	0	1	0	
		Evidence of	piping (subsurface flow)		NA		NA	-	-	Yes	0	1	0	No evidence of piping.	
		Significant s (previous sum	surface desiccation mer was dry?)		I	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing dra Annual rain	inage ditches fall		< 1000	NA) mm/yr		NA NA	Down slope < 1000 mm/yr	Varied / Oblique 1000 - 1400 mm/yr	Across slope > 1400 mm/yr	0	1	0	Flat topography, but drains
	Vegetation	Bush Forestry			Gras	sland		NA	Dry heather	Grassland	Wetlands Stupted growth	2	1	2	
	Peat workings	Peat cuts pr	resence		Cutaway	/ Turbary		NA	-	Cutaway / Turbary	Machine cut	2	1.5	2	
	Existing loads	Peat cuts vs Roads	contour lines	NA Solid		NA NA	Perpendicular Solid	Oblique -	Parallel Floating	0	1	0	Relatively flat topography		
	Time of year for	construction			Late Sumn	ner, Autumn		NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
								<u> </u>			, acanni		Hazard _{total}	30.5	
									0.0 - 0.3	Hazard Negligible			Max. possible	96	
									0.3 - 0.5	Low Medium			Hazard ₀₋₁	0.32	
									0.7 - 1.0	High					
	Conse	quence fact	ors		Va	alue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volume of (function o area)	f potential peat flo f distance from near	w rest watercou	rse and peat depth in the		Me	dium		NA	Small	 Medium	Large	2	3	6	Peat depth: ~2.52m. Slope angle: 4.71º.
Downslop	e hydrology featur	res		Mir	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined valle	ey (m)			>	500		NA	> 500	200 - 500	< 200	1	1	1	
Downstre	am aquatic enviror	nment			Sen	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential pea	at flow path			1	IA		NA	Minor road	Local road	supply Regional road	0	1	0	environment is sensitive.
Overhead	lines in potential p	peat flow pat	th		Elec (M\	tricity ′, HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings i	in potential peat fl	ow path			Dw	elling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the west
Capability	to respond (acces	s and resour	ces)		G	bod		NA	Good	Fair	Poor	1	1	1	Access via N63
									Con	sequences]	co	total	19	
									0.0 - 0.3 0.3 - 0.5	Negligible Low			Max. possible	33	
									0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.58	
									Risk rating						
	Risk						Actio	on required							
0	.00 - 0.20	Negligible	Normal site investigation	n dociera (fenecifi	itigation		ttime	nvision during	truction			Risk rating =	Hazard *	Consequences
0	.40 - 0.60	Medium	Avoid construction in the	area if pos	sible. If una	ivoidable, d	etailed site	investigatio	n and design of spe	ecific mitigation measure	es. Full time		nisk rating =	0.32	0.00 = 0.18

1		
CANUN	0	DOULEDIN
GAVIN	Ğ.	DOHERIT

Derryadd Wind Farm

Location:Construction Compound 2Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

				Va	lue				Rating criteria		Rating	Maishting	Castro	Comment	
	Ha	zard factors		U	US	D	DS	0	1	2	3	value	Weighting	Score	Comment
Factor of S	Safety			4.2	2.7	3.5	4.7	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.8m. Slope angle: 3.8º.
		Distance to previous slides	(km)		Ν	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement tension cracks, step features, con features).	It (e.g. npression		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type			Soft sens	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPAR17) records Soft damp bluish grey slightly sandy clayey very gravelly SILT with low cobble content. Sand is fine. Gravel is subangular to subrounded fine to coarse of limestone. Cobbles are subrounded to rounded of limestone.
		Peat fibres across transition	n to		Ν	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness			Dry / Sta	ands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TPAR17notes pit dry
		General curvature downslo	ppe		Ν	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
actors	Topography	Distance to the convexity b (only if previous factor is Convex)	oreak		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
econdary f		Slope aspect (for high latitudes in northern he	misphere)		Ν	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
S		Distance from watercourse	e (m)		>3	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NE	DMI)		Ν	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface water			Ν	IA		NA	Localised	Ponded in drains	Springs	0	1	0	
	nyurology	Evidence of piping (subsurf	ace flow)		Ν	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccat (previous summer was dry?)	ion	NA			NA		-	-	Yes	0	1.5	0	dessication.
		Existing drainage ditches Annual rainfall		NA < 1000 mm/yr				NA NA	Down slope < 1000 mm/yr	Varied / Oblique 1000 - 1400 mm/yr	Across slope > 1400 mm/yr	0	1 1	0	Flat topography, but drains
	Vegetation	Bush			Wet	lands		NA	Dry heather	Grassland	Wetlands	3	1	3	
		Forestry Peat cuts presence			Good : Mach	growth ine cut		NA NA	Good growth	Fair Cutaway / Turbary	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts vs contour lines			Obl	ique		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads			Sc	olid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction			Late Summ	ier, Autum	n	NA	Spring	Winter, Early Summer	Autumn	3	1 Hazard	3	Worst case estimate
									0.0 - 0.3	Hazard Negligible			Max. possible	96	
									0.3 - 0.5 0.5 - 0.7	Low Medium			Hazard ₀₋₁	0.32	
									0.7 - 1.0						
	Conse	quence factors			Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
(function o	f distance from near	w rest watercourse and peat dep	th in the		Med	dium		NA	Small	Medium	Large	2	3	6	Peat depth: ~1.8m. Slope angle:
Downslop	e hvdrology featu	res		Mir	or undefin	ed waterco	ourse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	5.5
Proximity	from defined valle	ev (m)			> "	500		NA	> 500	watercourse 200 - 500	< 200	1	1	1	
Downhill s	lope angle				Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstrea	am aquatic enviro	nment			Sens	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential pea	at flow path			Ν	IA		NA	Minor road	Local road	Regional road	0	1	0	
Overhead	lines in potential p	peat flow path			Elect (MV	ricity , HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings i	n potential peat fl	low path			Dwe	elling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the west
Capability	to respond (acces	s and resources)			Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
									Con	sequences	1	Co	nsequences _{total}	19	
									0.0 - 0.3	Negligible			Max. possible	33	
									0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low <mark>Medium</mark> High		Conse	quences ₀₋₁	0.58	
				Risk rating											
	Rick						Activ	on required				1			
0	.00 - 0.20	Negligible Normal site inv	estigation	n Action rea]	Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site in	vestigatio	on, design of specific mitigation measures. Part t					rvision during cons	truction.			Risk rating =	0.32	0.58 = 0.18
0.40 - 0.60MediumAvoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time0.60 - 1.00HighAvoid construction in this area.										es. Full time					



TOBIN CONSULTING ENGINEERS Location:Construction Compound 3Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors	11	Va	lue D	DS	0	1	Rating criteria	3	Rating	Weighting	Score	Comment
Factor of S	Safety		2.2	1.4	1.8	2.5	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.9m. Slope angle: 6.9º.
		Distance to previous slides (km)		N	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression		N	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Fin	m glacial till		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP104) records Firm damp orangish grey gravelly silty CLAY
		Peat fibres across transition to		N	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Sta	ands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	Tp dry
		General curvature downslope		N	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
ctors	Topography	Distance to the convexity break (only if previous factor is Convex)		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
condary fa		Slope aspect (for high latitudes in northern hemisphere)		N	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
Se		Distance from watercourse (m)		> 3	800		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		N	IA		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flow)		N	A		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		N	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		N	IA		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall Bush		< 1000	mm/yr sland		NA NA	< 1000 mm/yr	1000 - 1400 mm/yr Grassland	> 1400 mm/yr Wetlands	1	1	1	
	Vegetation	Forestry		Good g	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence Peat cuts vs contour lines		Machi	ne cut		NA	- Perpendicular	Cutaway / Turbary	Machine cut	3	1	3	Relatively flat topography
	Existing loads	Roads		So	lid		NA	Solid	-	Floating	1	1	1	
	Time of year for o	construction		Late Summ	er, Autumn		NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
									llarand	1		Hazard _{total}	25.5	
								0.0 - 0.3	Hazard Negligible			Max. possible	96	
								0.3 - 0.5	Low			Hazard	0 27	1
								0.7 - 1.0	High				0.27	
	Conse	quence factors		Va	lue				Rating criteria	-	Rating	Weighting	Score	Comment
Volume of	f potential peat flo	W					0	1	2	3	value			
(function o area)	f distance from near	rest watercourse and peat depth in the		Mec	lium		NA	Small	Medium	Large	2	3	6	Peat depth: ~1.9m. Slope angle: 6.9º.
Downslop	e hydrology featur	es	Mir	nor undefine	ed watercou	ırse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proximity Downhill s	from defined valle	y (m)		> 5 Horiz	500 rontal		NA NA	> 500 Horizontal	200 - 500 Intermediate	< 200 Steep	1	1	1	Flat topography
Downstrea	am aquatic enviror	nment		Sens	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream environment is sensitive.
Public roa	ds in potential pea	at flow path		N	IA		NA	Minor road	Local road	supply Regional road	0	1	0	
Overhead	lines in potential p	peat flow path		Elect	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Buildings i	in potential peat fl	ow path		Dwe	elling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the west
Capability	to respond (acces	s and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
								Con	sequences	1	Со	nsequences _{total}	19	
								0.0 - 0.3	Negligible			Max. possible	33	
								0.3 - 0.5	Low Medium		Conse	quences of	0.58	
								0.7 - 1.0	High				0.00	_
								Risk rati	ng					
											_			
0	Risk	Negligible Normal site investigation				Actio	n required					Rick rating	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	n, design of	f specific mi	tigation me	asures. Par	time super	rvision during cons	truction.		1	Risk rating =	0.27	0.58 = 0.15
0	.40 - 0.60	Medium Avoid construction in the	area if pos	sible. If una	voidable, de	etailed site	nvestigatio	n and design of sp	ecific mitigation measure	es. Full time		- 0		
0	60 - 1 00	High Avoid construction in this	area								1			

GAVIN	& DOHERTY

Derryadd Wind Farm

Location:Construction Compound 4Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors		Va	alue				Rating criteria		Rating	Weighting	Score	Comment
Factor of S	Safety		2.1 C	1.4 SO	1.8 D	2.5 Q	-	<u> </u>	2	3 ≤ 1.0	value 1	10	10	Peat depth: ~2m. Slope angle: 6.5º.
	Slide history	Distance to previous slides (km)		1	NA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Since mistory	Evidence of peat movement (e.g. tension cracks, step features, compression features).		1	NA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions	Subsoil type		Soft sen	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP111) records very soft moist grey organic silty CLAY with some plant material.
		Peat fibres across transition to subsoil		1	NA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness	Ex	tremely we	et / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	TP111 notes water ingress at 2.8mbgl with sidewall collapse
		General curvature downslope		1	NA		NA	-	Planar	Convex	0	1	0	Flat topography.
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)		1	NA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondar		Slope aspect (for high latitudes in northern hemisphere)		1	NA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		>	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		1	NA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		ſ	NA		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flow)		1	NA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		1	NA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		1	NA		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000) mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush Forestry		Good	growth		NA NA	Good growth	Grassland Fair	Stunted growth	3	1	1.5	
	Peat workings	Peat cuts presence		Mach	ine cut		NA	-	Cutaway / Turbary	Machine cut	3	1	3	
	Existing loads	Peat cuts vs contour lines Roads		ו אול	NA olid		NA NA	Perpendicular Solid	Oblique -	Parallel Floating	0	1	0	Relatively flat topography
	Time of year for	construction		Late Sumn	ner. Autumr	1	NA	Spring	Winter. Early Summer	Late Summer,	3	1	3	Worst case estimate
	,							61	,,	Autumn		Hazard	32 5	
								0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Hazard Negligible Low Medium High			Max. possible Hazard ₀₋₁	96 0.34	
	Conse	quence factors		Va	alue		0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
(function o area)	f distance from nea	rest watercourse and peat depth in the		Me	dium		NA	Small	Medium	Large	2	3	6	Peat depth: ~2m. Slope angle: 6.5º.
Downslop	e hydrology featu	res	Mir	nor undefin	ed waterco	urse	NA	Bowl / contained	watercourse	Valley	2	1	2	
Proximity Downhill	from defined valle	ey (m)		> Hori	500 zontal		NA NA	> 500 Horizontal	200 - 500 Intermediate	< 200 Steen	1	1	1	Flat topography
Downstre	am aquatic enviro	nment		Sen	sitive		ΝΔ	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential per	at flow path		1	NA		NA	Minor road		supply Regional road	0	1	0	environment is sensitive.
Overhead	lines in potential	peat flow path		Elec	tricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Buildings i	n notontial neat f	ow path			(, HV)		NA	Form out houses		(MIV, HV)	2	1	2	Por na Mona building to the west
Canability	to respond (acces	s and resources)					NΑ	Good	Fair	Poor	1	1	1	Access via N63
Сарабінту				0	000		NA	9000	Fall	FUU	Co	nsequences _{total}	19	
								Con 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	sequences Negligible Low Medium High		Conse	Max. possible quences ₀₋₁	33 0.58	
								Ri	isk rating	-				
	Diek					۲۰۵۲ ۱۹۹۲	on require	d			1			
0	.00 - 0.20	Negligible Normal site investigation				Acti	Jinrequire	~				Risk rating =	Hazard *	* Consequences
0	.20 - 0.40	Low Targeted site investigatio	n, design o	f specific m	itigation me	asures. Par	rt time sup	ervision during cons	truction.			Risk rating =	0.34	0.58 = 0.19
0	.40 - 0.60 .60 - 1.00	Medium Avoid construction in the High Avoid construction in this	area if pos s area.	sible. If una	avoidable, d	etailed site	investigati	on and design of sp	ecific mitigation measure	s. Full time				

1		
	Ι.	
GAVIN	8	DOHERTY

Derryadd Wind Farm

Location:Security Cabin 1Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Ha	zard factors		Va	lue				Rating criteria		Rating	Weighting	Score	Comment
			U	US	D	DS	0	1	2	3	value			
Factor of S	Safety		2.4	1.7	2.1	3.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~2.52m. Slope angle: 4.71º.
		Distance to previous slides (km)		Ν	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		Ν	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sens	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPAR04) records very soft moist grey organic laminated SILT with some plant material
		Peat fibres across transition to		Ν	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness	Ex	tremely we	t / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	TPAR03 notes water ingress at 0.6mbgl and 2.3mbgl with sidewall collapse
		General curvature downslope		Ν	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
actors	Topography	Distance to the convexity break (only if previous factor is Convex)		Ν	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
condary f		Slope aspect (for high latitudes in northern hemisphere)		Ν	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
Se		Distance from watercourse (m)		> 3	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	A		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surrace water		N				Localised	Ponded in drains	Springs	0	1	0	No evidence of nining
	Hydrology	Significant surface desiccation (previous summer was dry?)		N	IA		NA	-	_	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		N	IA		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush		Gras	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	
		Forestry Peat cuts presence		Good (Cutaway	growth /Turbarv		NA NA	Good growth -	Fair Cutaway / Turbary	Stunted growth Machine cut	1 2	1.5	1.5 2	
	Peat workings	Peat cuts vs contour lines		Obl	ique		NA	Perpendicular	Oblique	Parallel	2	1	2	Relatively flat topography
	Existing loads	Roads		So	olid		NA	Solid	-	Floating Late Summer.	1	1	1	
	Time of year for	construction		Late Summ	ier, Autumr		NA	Spring	Winter, Early Summer	Autumn	3	1	3	Worst case estimate
									Hazard]		Hazard _{total}	32.5	
								0.0 - 0.3 0.3 - 0.5	Negligible Low			Max. possible	96	
								0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.34	
	Conse	quence factors		Va	luo				Rating criteria	-	Rating	Weighting	Score	Comment
Volume of	potential peat flo	w		Sm	nall		0 NA	1 Small	2 Medium	3	value	3	3	Peat depth: ~2.52m. Slope angle:
Downslop	e hydrology featur	es	Mir	nor undefine	ed waterco	urse	NA	Bowl / contained	Minor undefined	Vallev	2	1	2	
Proximity	from defined valle	y (m)		> [500		NA	> 500	watercourse	< 200	1	- 1	1	
Downhill s	lope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstrea	am aquatic enviro	nment		Sens	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential pea	t flow path		N	IA		NA	Minor road	Local road	Regional road	0	1	0	chan on ment is sensitive.
Overhead	lines in potential p	peat flow path		Elect	ricity		NA	Phone lines	Electricity (LV)	Electricity	3	1	3	
Buildings i	n potential peat fl	ow path		Dwe	elling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the west
Capability	to respond (acces	s and resources)		Go	od		NA	Good	Fair	Poor	1	1	1	Access via N63
								0.0 - 0.3	Negligible]	co	Max. possible	33	
								0.5 - 0.5 0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.48]
								Risk rating						
	Risk	Negligible Normal site investigation				Actio	on required				-	Rick rating -	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investigation	n, design of	f specific mi	tigation me	asures. Par	t time supe	rvision during cons	struction.			Risk rating =	0.34	0.48 = 0.16
0	.40 - 0.60	Medium Avoid construction in the	area if pos	<mark>sible. If una</mark>	voidable, d	etailed site	investigatio	n and design of sp	ecific mitigation measur	es. Full time		- 0		0.10
0	60 - 1.00	High Avoid construction in this	area								1			

GAVIN GEOS	DG a DOHERTY OLUTIONS	Peat Stabi	lity Risk Assessment (P	SRA)					Location: Conditions: Inspected on: Inspected by:	Security Cabin 2 Undrained (U), undrain 8th-10th November 202 BMc and MD	ed surcharge (US), dra 23	iined (D), d	rained surcharg	e (DS)	
	DBIN SULTING ENGINEERS	Derryadd	Wind Farm						Completed by: Date:	KG/CE 10/03/2025					
	На	zard factors			Va	llue		0	1	Rating criteria	2	Rating	Weighting	Score	Comment
Factor of	Safety			4.16 0	2.68	3.5	4.7	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.8m. Slope angle: 3.8º.
	Slide history	Distance to	previous slides (km)		1	IA	I	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of tension cracks features).	f peat movement (e.g. s, step features, compression		1	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil typ	e		Soft sen	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TPAR17) records Soft damp bluish grey slightly sandy clayey very gravelly SILT with low cobble content. Sand is fine. Gravel is subangular to subrounded fine to coarse of limestone. Cobbles are subrounded to rounded of limestone.
		Peat fibres subsoil	across transition to		1	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetne	SS		Dry / St	ands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TPAR17notes pit dry
		General cu	rvature downslope		٦	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
idary factors	Topography	Distance to (only if previo	the convexity break us factor is Convex)		1	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secon		Slope aspect (for high latitud	ct udes in northern hemisphere)		٦	IA		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance fro	om watercourse (m)		>	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface mo	isture index (NDMI)		٦	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	Hydrology	Surface wa	ter		1	JA		NA	Localised	Ponded in drains	Springs	0	1	0	No ovidence of piping
	i i yu ology							NA	-	-	Tes	0	1	0	
		Significant : (previous sum	surface desiccation mer was dry?)		٦	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing dra	iinage ditches		1	A		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rair Bush	fall		< 1000 Wet	mm/yr Iands		NA NA	< 1000 mm/yr Dry heather	1000 - 1400 mm/yr Grassland	> 1400 mm/yr Wetlands	1	1	1	
	Vegetation	Forestry			Good	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts p	resence s contour lines		Mach Ob	ine cut ique		NA NA	- Perpendicular	Cutaway / Turbary Oblique	Machine cut Parallel	3	1	3	Relatively flat topography
	Existing loads	Roads			Sc	olid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction	1		Late Summ	ier, Autumr	l	NA	Spring	Winter, Early Summer	Late Summer,	3	1	3	Worst case estimate
											Autumn		Hazard _{total}	30.5	
									0.0.02	Hazard]			06	
									0.0 - 0.3	Low			Max. possible	96	
									0.5 - 0.7	Medium			Hazard ₀₋₁	0.32	
									0.7 - 1.0	High	1				
	Conse	quence fact	tors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volume o	f potential peat flo)W			Sr	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~1.8m. Slope angle:
Downslop	e hydrology featu	res		Mi	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined valle	ey (m)			>	500		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle				Hori	zontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream
Downstre	am aquatic enviro	nment			Sen	sitive		NA	Non-sensitive	Sensitive	supply	2	1	2	environment is sensitive.
Public roa	ads in potential pea	at flow path			Floo	IA		NA	Minor road	Local road	Regional road	0	1	0	
Overhead	lines in potential	peat flow pa	th		(MV	, HV)		NA	Phone lines	Electricity (LV)	(MV, HV)	3	1	3	Dennes Marcala (1911)
Buildings	in potential peat f	low path			Dw	elling		NA	Farm out-houses	-	Dwelling	3	1	3	west
Capability	<pre>/ to respond (acces</pre>	s and resour	rces)		G	ood		NA	Good	Fair	Poor	1	1	1	Access via N63
									Cor	sequences	1	Co	insequences _{total}	16	
									0.0 - 0.3	Negligible			Max. possible	33	
									0.5 - 0.5 0.5 - 0.7 0.7 - 1.0	Medium High		Conse	quences ₀₋₁	0.48	I
									Risk rating						
	Rick						Acti	on required				1			
(0.00 - 0.20	Negligible	Normal site investigation				ACTIO	mequired					Risk rating =	Hazard *	Consequences
(0.20 - 0.40	Low	Targeted site investigation	on, design o	f specific m	itigation me	asures. Par	t time supe	rvision during cons	struction.		-	Risk rating =	0.32	0.48 = 0.15
(0.40 - 0.60	Medium	Avoid construction in the	e area if pos s area	sible. If una	voidable, d	etailed site	Investigatio	on and design of sp	ecific mitigation measure	es. Full time				

G	DG	Peat Stability Risk Assessment (PS	iRA)					Location: Conditions:	Construction Compound Undrained (U), undrain	d 3 ed surcharge (US), dra	iined (D), di	rained surcharg	e (DS)	
GEOS	& DOHERTY DLUTIONS							Inspected on: Inspected by:	8th-10th November 202 BMc and MD	23				
T	DBIN	Derryadd Wind Farm						Completed by: Date:	KG/CE 10/03/2025					
CONS	ULTING ENGINEERS													
	Ha	zard factors	U	Val US	ue D	DS	0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
Factor of	Safety		2.2	1.4	1.8	2.5	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~1.9m. Slope angle: 6.9º.
		Distance to previous slides (km)		N	4		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Silde history	Evidence of peat movement (e.g. tension cracks, step features, compression features).		N	4		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type	Gr	ravel / Firr	n glacial til	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP (TP104) records Firm damp orangish grey gravelly silty CLAY
		Peat fibres across transition to subsoil		N	4		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Dry / Sta	nds well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	1	2	2	TP Dry
		General curvature downslope		N	Ą		NA	-	Planar	Convex	0	1	0	Flat topography.
ry factors	Topography	Distance to the convexity break (only if previous factor is Convex)		N	4		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Seconda		Slope aspect (for high latitudes in northern hemisphere)		N	4		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	4		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		N	4		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flow)		N	4		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		N	4		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		N	4		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall Bush		< 1000 Grass	mm/yr Iand		NA NA	< 1000 mm/yr Dry heather	1000 - 1400 mm/yr Grassland	> 1400 mm/yr Wetlands	1 2	1	1	
	Vegetation	Forestry		Good g	rowth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence Peat cuts vs contour lines		Obli	ne cut que		NA NA	- Perpendicular	Oblique	Parallel	2	1 1	2	Relatively flat topography
	Existing loads	Roads		So	id		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction	La	ate Summo	er, Autumr	l	NA	Spring	Winter, Early Summer	Autumn	3	1	3	Worst case estimate
									Hazard	1		Hazard _{total}	27.5	
								0.0 - 0.3	Negligible			Max. possible	96	
								0.5 - 0.7	Medium			Hazard ₀₋₁	0.29]
								0.7 - 1.0	High					
	Conse	quence factors		Val	ue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volume o	f potential peat flo	W		Sm	all		NA	Small	Medium	Large	1	3	3	Peat depth: ~1.9m. Slope angle:
Downslop	e hydrology featu	res	Mino	r undefine	d waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity Downbill	from defined valle	y (m)		> 5 Horiza	00 ontal		NA	> 500 Horizontal	200 - 500	< 200 Steen	1	1	1	Flat topography
Downstre	am aquatic enviro	nment		Sens	tive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential per	at flow path		N	4		NA	Minor road	Local road	supply Regional road	0	1	0	environment is sensitive.
Overhead	lines in potential	peat flow path		Electi	icity		NA	Phone lines	Electricity (LV)		3	1	3	
Buildings	in potential peat fl	ow path		Dwe	ling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the
Capability	to respond (acces	s and resources)		Go	bd		NA	Good	Fair	Poor	1	1	1	Access via N63
								Con		7	Со	nsequences _{total}	16	
								0.0 - 0.3	Negligible	-		Max. possible	33	
								0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low <mark>Medium</mark> High		Conse	quences ₀₋₁	0.48]
								Risk rating						
	Risk					Actio	n required]			
(0.00 - 0.20 0.20 - 0.40	Negligible Normal site investigation Low Targeted site investigation	n, design of s	pecific mit	igation me	asures. Part	time supe	rvision during cons	truction.			Risk rating = Risk rating =	Hazard * 0.29	Consequences0.48=0.14
().40 - 0.60).60 - 1.00	Medium Avoid construction in the a	area if possib	ole. If unav	<mark>oidable, d</mark>	etailed site i	nvestigatic	on and design of spo	ecific mitigation measure	es. Full time		0		0.14

1		
GAVIN	2	DOHERTY

Derryadd Wind Farm

Location:Construction Compound 4Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	На	zard factors		Va	ilue	DS	0	1	Rating criteria	3	Rating	Weighting	Score	Comment
							0	-	2	,	Value			Peat depth: ~2m. Slope angle:
Factor of S	Safety		2.1	1.4	1.8	2.5	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	6.5º.
	Slide history	Distance to previous slides (km)		٢	IA	<u> </u>	NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
	Sinde history	Evidence of peat movement (e.g. tension cracks, step features, compressior features).		٢	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Soft sen:	sitive clay		NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TP (TP111) records very soft moist grey organic silty CLAY with some plant material.
		Peat fibres across transition to		٦	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness	Ex	ktremely we	t / Undigga	ble	NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	3	2	6	TP111 notes water ingress at 2.8mbgl with sidewall collapse
		General curvature downslope		٢	A		NA	-	Planar	Convex	0	1	0	Flat topography.
y factors	Topography	Distance to the convexity break (only if previous factor is Convex)		٢	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Seconda		Slope aspect (for high latitudes in northern hemisphere)	٢	JA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		>:	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		٢	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		١	IA		NA	Localised	Ponded in drains	Springs	0	1	0	
	Hydrology	Evidence of piping (subsurface flo	v)	١	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		٢	IA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		١	IA		NA	Down slope	Varied / Oblique	Across slope	0	1	0	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush		Wet	lands growth		NA	Dry heather	Grassland	Wetlands	3	1	3	
		Peat cuts presence		Mach	ine cut		NA NA	- Good growth	Cutaway / Turbary	Machine cut	3	1.5	3	
	Peat workings	Peat cuts vs contour lines		١	IA		NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		Sc	olid		NA	Solid	-	Floating	1	1	1	
	Time of year for o	construction		Late Summ	ner, Autumr	1	NA	Spring	Winter, Early Summer	Autumn	3	1	3	Worst case estimate
								0.0 - 0.3 0.3 - 0.5 0.5 - 0.7	Hazard Negligible Low Medium			Hazard _{total} Max. possible Hazard ₀₋₁	32.5 96 0.34	
								0.7 - 1.0	High					
	Conse	quence factors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment
Volume of	potential peat flo	W		Me	dium		NA	Small	Medium	Large	2	3	6	Peat depth: ~2m. Slope angle:
Downslop	e hydrology featur	res	Mi	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined	Valley	2	1	2	
Proximity	from defined valle	y (m)		> !	500		NA	> 500	200 - 500	< 200	1	1	1	
Downhill s	lope angle			Hori	zontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstrea	am aquatic enviror	nment		Sen	sitive		NA	Non-sensitive	Sensitive	supply	2	1	2	environment is sensitive.
Public roa	ds in potential pea	it flow path		۲ ۲	IA haisitea		NA	Minor road	Local road	Regional road	0	1	0	
Overhead	lines in potential p	peat flow path		Elect (MV	ricity 7, HV)		NA	Phone lines	Electricity (LV)	(MV, HV)	3	1	3	
Buildings i	n potential peat fl	ow path		Dwe	elling		NA	Farm out-houses	-	Dwelling	3	1	3	Bor na Mona building to the west
Сарабіііту	to respond (acces	s and resources)		G	bod		NA	Good	Fair	Poor	1 Co	nsequences _{total}	1 19	Access via N63
								Cor 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7	Negligible Low Medium		Conse	Max. possible	33 0.58	
								0.7 - 1.0	High]				
								KISK rating						
	Risk					Actio	on required]			
0	.00 - 0.20	Negligible Normal site investigati	on								-	Risk rating =	Hazard *	Consequences
0	.20 - 0.40	Low Targeted site investiga	tion, design o	t specific m	itigation me	easures. Par	t time supe	rvision during cons	struction.	C. Full time		Risk rating =	0.34	0.58 = 0.19
0	.40 - 0.80	High Avoid construction in t	his area.	sible. If una	voldable, d		investigatio	and design of sp						

GAVIN	DOLUTIONS	Peat Stability Risk Assessment (PS	RA)					Location: Conditions: Inspected on: Inspected by:	Borrow Pit 1 (BP01) Undrained (U), undrain 8th-10th November 202 BMc and MD	ed surcharge (US), dra 23	ained (D), d	rained surcharg	e (DS)	
		Derryadd Wind Farm						Completed by: Date:	KG/CE 10/03/2025					
	Ha	zard factors	U	Va US	lue D	DS	0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
Factor of	Safety		6.40	2.9	1.8	2.5	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.82m. Slope angle: 5.53º.
	Slide history	Distance to previous slides (km)		٦	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of peat movement (e.g. tension cracks, step features, compression features).		٢	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type		Gravel / Fir	m glacial til	Ι	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TP s (TPBPA01, TPBPA02, TPBPA03, and TPBPA04) record soft moist slightly gravelly sandy clayey silt generally underlain by stiff damp grey slightly sandy gravelly silt with medium cobble content
		Peat fibres across transition to		١	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly s	queezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet /	2	2	4	Water ingress at TPBPA1, TPBPA2,
		General curvature downslope		1	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
factors	Topography	Distance to the convexity break (only if previous factor is Convex)		٢	IA		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Secondary		Slope aspect (for high latitudes in northern hemisphere)		٢	IA		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		>:	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		N	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
	l hudue le sur	Surface water		Loca	lised		NA	Localised	Ponded in drains	Springs	1	1	1	
	Hydrology	Evidence of piping (subsurface flow) Significant surface desiccation		۲ 			NA	-	-	Yes	0	1	0	No evidence of piping. No evidence of significant
		(previous summer was dry?) Existing drainage ditches		Varied /	Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	dessication. Flat topography, but drains
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Bush		Gras	sland		NA	Dry heather	Grassland	Wetlands	2	1	2	
		Forestry Peat cuts presence		Good Cutaway	growth /Turbary		NA NA	Good growth	Fair Cutaway / Turbary	Stunted growth Machine cut	1 2	1.5	1.5 2	
	Peat workings	Peat cuts vs contour lines		۱	IA		NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
	Existing loads	Roads		Sc	olid		NA	Solid	-	Floating Late Summer.	1	1	1	
	Time of year for	construction		Late Summ	ier, Autumn		NA	Spring	Winter, Early Summer	Autumn	3	1 Hazard _{total}	3 29.5	Worst case estimate
								0.0 - 0.3	Hazard Negligible			Max. possible	96	
								0.5 - 0.7 0.7 - 1.0	Medium High			Hazard ₀₋₁	0.31]
	Conse	quence factors		Va	lue		0	1	Rating criteria	2	Rating	Weighting	Score	Comment
Volume o (function c area)	f potential peat flc f distance from nea	w rest watercourse and peat depth in the		Sn	nall		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.82m. Slope angle: 5.53º.
Downslop	e hydrology featu	res	Mir	nor undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity	from defined valle	y (m)		> !	500		NA	> 500	200 - 500	< 200	1	1	1	
Downhill	slope angle			Horiz	ontal		NA	Horizontal	Intermediate	Steep Drinking water	1	1	1	Flat topography Assumed downstream
Downstre	am aquatic enviro	nment		Sen	sitive		NA	Non-sensitive	Sensitive	supply	2	1	2	environment is sensitive.
Public roa	ds in potential pea	at flow path		Elec ^a	IA ricity		NA	Minor road	Local road	Regional road Electricity	0	1	0	
Buildings	in potential peat fl	ow path		(MV)	, HV) IA		NA	Farm out-houses	Electricity (LV)	(MV, HV)	3		0	
Canability	to respond (acces	s and resources)			nod		NA	Good	Fair	Poor	1	1	1	
-apability				90						1 1001	Cc	nsequences _{total}	13	
								Con 0.0 - 0.3 0.3 - 0.5	sequences Negligible Low		Conse	Max. possible	33	1
								0.7 - 1.0	High	1			0.39	1
								Risk rating						
	Risk					Actio	on required]			
(0.00 - 0.20	Negligible Normal site investigation	dociar	fspecifie	tigation	asuree D	ttime	nvision during and	truction			Risk rating =	Hazard *	Consequences
(0.40 - 0.60	Medium Avoid construction in the	area if pos	sible. If una	voidable, d	etailed site	investigatio	on and design of spo	ecific mitigation measure	es. Full time		Non raung =	0.31	U.12

GAVIN GEOS	DG DOHERTY DIUTIONS	Peat Stability Risk Assessment (P Derryadd Wind Farm	SRA)					Location: Conditions: Inspected on: Inspected by: Completed by:	Borrow Pit 2 (BP02) Undrained (U), undrain 8th-10th November 202 BMc and MD KG/CE	ed surcharge (US), dra 23	nined (D), d	rained surcharg	e (DS)	
CONS	JUTING ENGINEERS							Date:	10/03/2025					
	Ha	azard factors	U	Va US	lue D	DS	0	1	Rating criteria 2	3	Rating value	Weighting	Score	Comment
Factor of	Safety		13.8	4.3	11.1	7.4	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.45m. Slope angle: 4.64º.
	Slide history	Distance to previous slides (km)		١	IA		NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km
		Evidence of peat movement (e.g. tension cracks, step features, compression features).		٢	IA		NA	-	-	Yes	0	2	0	No evidence of peat movement.
	Subsoil conditions (visible in trial pits)	Subsoil type	C	Gravel / Fir	m glacial ti	I	NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TPs (TPBPD01, TPBPD02, TPBPE01 and TPBPE02) generally record firm damp slightly sandy slightly gravelly sily with medium cobble content
		Peat fibres across transition to subsoil		٦	IA		NA	Yes	Partially	No	0	1	0	Not recorded inTPs
		Peat wetness		Slowly s	queezing		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	0	2	0	Water ingress at TPBPD01, TPBPD02, TPBPE01 and TPBPE02
		General curvature downslope		٦	IA		NA	-	Planar	Convex	0	1	0	Flat topography.
lary factors	Topography	Distance to the convexity break (only if previous factor is Convex)		٢	A		NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.
Second		Slope aspect (for high latitudes in northern hemisphere)		٦	A		NA	SW, S, SE	W <i>,</i> E	NW, N, NE	0	1	0	Flat topography.
		Distance from watercourse (m)		> ;	300		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.
		Surface moisture index (NDMI)		٦	IA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable
		Surface water		Loca	alised		NA	Localised	Ponded in drains	Springs	1	1	1	
	Hydrology	Evidence of piping (subsurface flow)		٦	IA		NA	-	-	Yes	0	1	0	No evidence of piping.
		Significant surface desiccation (previous summer was dry?)		٦	A		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.
		Existing drainage ditches		Varied ,	' Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.
		Annual rainfall		< 1000	mm/yr		NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1	
	Vegetation	Forestry		Gras	growth		NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
	Peat workings	Peat cuts presence		Cutaway	/ Turbary		NA	- Perpendicular	Cutaway / Turbary	Machine cut	2	1	2	Relatively flat topography
	Existing loads	Roads		Sc	olid		NA	Solid	-	Floating	1	1	1	
	Time of year for	construction	l	ate Summ	ier, Autumi	ı	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
										7		Hazard _{total}	25.5	
								0.0 - 0.3	Hazard Negligible	-		Max. possible	96	
								0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	Low Medium High			Hazard ₀₋₁	0.27]
	Conse	equence factors		Va	lue				Rating criteria		Rating	Weighting	Score	Comment
Volume o (function o	f potential peat flo of distance from nea	ow arest watercourse and peat depth in the		Sr	nall		NA	Small	Medium	Large	1 1	3	3	Peat depth: ~0.45m. Slope angle: 4.64º.
Downslop	e hydrology featu	ires	Min	or undefin	ed waterco	urse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity Downhill	from defined vall slope angle	ey (m)		> : Hori	500 contal		NA NA	> 500 Horizontal	200 - 500 Intermediate	< 200 Steen	1	1	1	Flat topography
Downstre	am aquatic enviro	onment		Sen	sitive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream
Public roa	ds in potential pe	at flow path		٢	IA		NA	Minor road	Local road	Regional road	0	11	0	environment is sensitive.
Overhead	lines in potential	peat flow path		Elec (MV	tricity (, HV)		NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings	in potential peat f	flow path		٦	IA		NA	Farm out-houses	-	Dwelling	0	1	0	
Capability	to respond (acce	ss and resources)		G	ood		NA	Good	Fair	Poor	1	1	1	
								Con	sequences	1	Co	onsequences _{total}	13	
								0.0 - 0.3 0.3 - 0.5 0.5 - 0.7	Negligible Low Medium		Conse	Max. possible	33 0.39]
								0.7 - 1.0 Risk rating	High					
		· · · · · · · · · · · · · · · · · · ·						0						
(Risk 0.00 - 0.20	Negligible Normal site investigation				Acti	on required	k			-	Risk rating =	Hazard *	Consequences
(0.20 - 0.40	Low Targeted site investigatio	n, design of	specific m	itigation m	easures. Pa	rt time supe	ervision during cons	truction.			Risk rating =	0.27	0.39 = 0.10
().40 - 0.60) 60 - 1 00	Medium Avoid construction in the	area if poss	ible. If una	voidable, d	etailed site	investigati	on and design of spe	ecific mitigation measure	es. Full time	-			

CAVIN	0	DOULEDI

TOBIN CONSULTING ENGINEERS Location:Borrow Pit 3 (BP03)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

	Hazard factors				Va US	lue D	DS	0	1	Rating criteria	3	Rating value	Weighting	Score	Comment										
Factor of S	Safety			6.10	2.9	5.0	5.1	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.91m. Slope angle: 5.19º.										
		Distance to	previous slides (km)	NA			NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km											
	Slide history	Evidence of tension cracks, features).	peat movement (e.g. , step features, compression	NA			NA	-	-	Yes	0	2	0	No evidence of peat movement.											
	Subsoil conditions (visible in trial pits)	Subsoil type	õ	Soft sensitive clay			Soft sensitive clay		Soft sensitive clay		Soft sensitive clay		Soft sensitive clay		Soft sensitive clay		Soft sensitive clay		Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	3	1	3	Nearest TPs (TPBPB01, TPBPB02, TPBPB03 and TPBPB04) record very soft moist gravelly silty clay (TPBPB01) and soft moist dark grey slightyly sandy organic clayey very gravelly silt (TPBPB02) with better conditions found in TPBPB03 and TPBPB04 generally firm damp brownish grey slightly sandy silty grey very gravelly clay
		Peat fibres a	across transition to		N	A		NA	Yes	Partially	No	0	1	0	Not recorded inTPs										
		Peat wetnes	SS		Dry / Sta	nds well		NA	Dry / Stands well	Slowly squeezing	Extremely wet /	1	2	2	TP dry on excavation										
		General cur	vature downslope		N	A		NA	-	Planar	Convex	0	1	0	Flat topography.										
ry factors	Topography	Distance to (only if previou	Distance to the convexity break (only if previous factor is Convex)		NA			NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.										
Seconda		Slope aspect (for high latitudes in northern hemisphere)			Ν	A		NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.										
		Distance fro	om watercourse (m)		> 3	00		NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.										
		Surface moisture index (NDMI)		NA			NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable											
		Surface wat	Surface water		Loca	lised		NA	Localised	Ponded in drains	Springs	1	1	1											
	Hydrology	Evidence of	dence of piping (subsurface flow)		Ν	A		NA	-	-	Yes	0	1	0	No evidence of piping.										
		Significant s (previous sumi	Significant surface desiccation previous summer was dry?)		NA			NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.										
		Existing dra	inage ditches	Varied / Oblique			NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains perpendicular to contours.											
		Annual rain	Annual rainfall		< 1000 mm/yr			NA	< 1000 mm/yr	1000 - 1400 mm/yr	> 1400 mm/yr	1	1	1											
	Vegetation	Bush Forestry		Grassland Good growth			NA NA	Dry neather Good growth	Grassland Fair	Stunted growth	2	1.5	 1.5												
	Peat workings	, Peat cuts pr	cuts presence		Cutaway / Turbary			NA	-	Cutaway / Turbary	Machine cut	2	1	2											
	Evicting loads	Peat cuts vs	s contour lines	NA		NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography												
	Time of year for	construction		Late Summer Autumn		NΔ	Spring	Winter Farly Summer	Late Summer,	3	1		Worst case estimate												
								Hazard Autum 0.0 - 0.3 Negligible 0.3 - 0.5 Low 0.5 - 0.7 Medium 0.7 - 1.0 High					Hazard _{total} 29.5 Max. possible 96 Hazard ₀₋₁ 0.31												
	Conse	quence fact	ors		Va	lue		0	1	Rating criteria	3	Rating value	Weighting	Score	Comment										
(function o	f distance from near	rest watercou	rse and peat depth in the		Sm	all		NA	Small	Medium	Large	1	3	3	Peat depth: ~0.91m. Slope angle: 5.199										
Downslop	e hydrology featur	es		Mir	or undefine	ed watercou	urse	NA	Bowl / contained	Minor undefined	Vallev	2	1	2											
Proximity	from defined valle	y (m)			> 5	00		NA	> 500	watercourse 200 - 500	< 200	1	1	1											
Downhill s	lope angle	7 (***)			Horiz	ontal		NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography										
Downstrea	am aquatic enviro	nment			Sens	itive		NA	Non-sensitive	Sensitive	Drinking water	2	1	2	Assumed downstream										
Public roa	ds in potential pea	t flow path			N	A		NA	Minor road	Local road	Regional road	0	1	0	environment is sensitive.										
Overhead lines in potential peat flow path			NA	Phone lines	Electricity (LV)	Electricity	3	1	3																
Buildings in potential peat flow path NA				NA	Farm out-houses	-	Dwelling	0	1	0															
Capability to respond (access and resources) Good					NA	Good	Fair	Poor	1	1	1														
,							Con 0.0 - 0.3 0.3 - 0.5 0.5 - 0.7 0.7 - 1.0	sequences Negligible Low Medium High		Co Conse	Max. possible quences ₀₋₁	13 33 0.39													
									Risk rating																
								-																	
	Risk	Noglisible	Normal site investigation				Actio	n required					Dick ratio -	Horard *	Consequences										
0	.20 - 0.40		Targeted site investigation	n, design of	specific mi	tigation me	asures. Par	t time supe	rvision during cons	truction.		-	Risk rating =	0.31	0.39 = 0 12										
0	.40 - 0.60	Medium	Avoid construction in the	area if pos	sible. If una	voidable, de	etailed site	investigatio	n and design of spo	ecific mitigation measure	es. Full time		- 0		0.12										
0	.60 - 1.00	High	Avoid construction in this	area.								1													



TOBBIN CONSULTING ENGINEERS Derryadd Wind Farm

Peat Stability Risk Assessment (PSRA)

Location:Borrow Pit 4 (BP04)Conditions:Undrained (U), undrained surcharge (US), drained (D), drained surcharge (DS)Inspected on:8th-10th November 2023Inspected by:BMc and MDCompleted by:KG/CEDate:10/03/2025

Hazard factors				Va	alue		Rating criteria							Commont	
			U	US	D	DS	0 1 2 3			value	weighting	Score	Comment		
actor of	Safety		12.00	4.5	9.7	7.8	-	≥ 1.3	1.3 - 1.0	≤ 1.0	1	10	10	Peat depth: ~0.06m. Slope angl 4.00º.	
		Distance to previous slides (km)	NA			NA	5 - 10	< 5	On site	0	2	0	No previous slides within 10km		
	Slide history	Evidence of peat movement (e.g. tension cracks, step features, compression features).				NA	-	-	Yes	0	2	0	No evidence of peat movement		
	Subsoil conditions (visible in trial pits)	Subsoil type	Gravel / Firm glacial till				NA	Gravel / Firm glacial till	Smooth rock	Soft sensitive clay	1	1	1	Nearest TPs (TPBPC01 and TPBPC02) record soft damp slightly sandy gravelly silty clay to soft moist clayey very gravelly silt underlain by stiff grey very gravelly clay and soft damp slightly san gravelly silt to soft moist silty very gravelly clay underlain by stiff silty gravelly clay	
		Peat fibres across transition to		NA			NA	Yes	Partially	No	0	1	0	No information avalable	
		Peat wetness		Dry / Sta	ands well		NA	Dry / Stands well	Slowly squeezing	Extremely wet / Undiggable	0	2	0	TPs dry on excavation	
	Topography	General curvature downslope		٢	NA		NA	-	Planar	Convex	0	1	0	Flat topography.	
actors		Distance to the convexity break (only if previous factor is Convex)	NA			NA	> 100 m	50 - 100 m	< 50 m	0	1	0	Flat topography.		
econdary 1		Slope aspect (for high latitudes in northern hemisphere)	NA				NA	SW, S, SE	W, E	NW, N, NE	0	1	0	Flat topography.	
Š		Distance from watercourse (m)	> 300			NA	> 300	200 - 300	< 200	1	1	1	Greater than 300m from watercourse.		
		Surface moisture index (NDMI)	NA		NA	0 - 96	96 -135	135 - 174	0	1	0	Information unavailable			
		Surface water		Loca	alised		NA	Localised	Ponded in drains	Springs	1	1	1		
	Hydrology	Evidence of piping (subsurface flow)		٢	NA		NA	-	-	Yes	0	1	0	No evidence of piping.	
		Significant surface desiccation (previous summer was dry?)		٢	NA		NA	-	-	Yes	0	1.5	0	No evidence of significant dessication.	
		Existing drainage ditches		Varied ,	/ Oblique		NA	Down slope	Varied / Oblique	Across slope	2	1	2	Flat topography, but drains	
		Annual rainfall		< 1000) mm/yr		NA	< 1000 mm/vr	1000 - 1400 mm/vr	> 1400 mm/vr	1	1	1		

	/ initial rannan		INA I	< 1000 mm/ yr	1000 1400 1111/ 91		-	-	-	
Vogotation	Bush	Grassland	NA	Dry heather	Grassland	Wetlands	2	1	2	
vegetation	Forestry	Good growth	NA	Good growth	Fair	Stunted growth	1	1.5	1.5	
Post workings	Peat cuts presence	Cutaway / Turbary	NA	-	Cutaway / Turbary	Machine cut	2	1	2	
Peat workings	Peat cuts vs contour lines	NA	NA	Perpendicular	Oblique	Parallel	0	1	0	Relatively flat topography
Existing loads	Roads	Solid	NA	Solid	-	Floating	1	1	1	
Time of year fo	r construction	Late Summer, Autumn	NA	Spring	Winter, Early Summer	Late Summer, Autumn	3	1	3	Worst case estimate
								Hazard _{total}	25.5	

Hazard									
0.0 - 0.3	Negligible								
0.3 - 0.5	Low								
0.5 - 0.7	Medium								
0.7 - 1.0	High								

				Dating critoria		Dating			
Consequence factors	Value		1		2		Weighting	Score	Comment
Volume of potential peat flow (function of distance from nearest watercourse and peat depth in the area)	Small	NA	Small	Medium	Large	1	3	3	Peat depth: ~0.06m. Slope angle: 4.00º.
Downslope hydrology features	Minor undefined watercourse	NA	Bowl / contained	Minor undefined watercourse	Valley	2	1	2	
Proximity from defined valley (m)	> 500	NA	> 500	200 - 500	< 200	1	1	1	
Downhill slope angle	Horizontal	NA	Horizontal	Intermediate	Steep	1	1	1	Flat topography
Downstream aquatic environment	Sensitive	NA	Non-sensitive	Sensitive	Drinking water supply	2	1	2	Assumed downstream environment is sensitive.
Public roads in potential peat flow path	NA	NA	Minor road	Local road	Regional road	0	1	0	
Overhead lines in potential peat flow path	Electricity (MV, HV)	NA	Phone lines	Electricity (LV)	Electricity (MV, HV)	3	1	3	
Buildings in potential peat flow path	NA	NA	Farm out-houses	-	Dwelling	0	1	0	
Capability to respond (access and resources)	Good	NA	Good	Fair	Poor	1	1	1	
						Со	nsequences _{total}	13	
			Cor	sequences					
			0.0 - 0.3	Negligible			Max. possible	33	
			0.3 - 0.5	Low					_
			0.5 - 0.7	Medium		Conse	quences ₀₋₁	0.39	

Risk rating

Risk		Action required					
0.00 - 0.20	Negligible	Normal site investigation	Risk rating =	Hazard *	Consequer	ices	
0.20 - 0.40	Low	Targeted site investigation, design of specific mitigation measures. Part time supervision during construction.	Risk rating =	0.27	0.39	=	0.10
0.40 - 0.60	Medium	Avoid construction in the area if possible. If unavoidable, detailed site investigation and design of specific mitigation measures. Full time				-	
0.60 - 1.00	High	Avoid construction in this area.					

0.7 - 1.0 High