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Case Manager
Energy Consents & Deployment Unit
The Scottish Government

Your Ref: ECU00004517

Our Ref: 62281580-WSPE-RP-OC-00001_P01.1

24 September 2025

Dear Sir/Madam,

Eredine Wind Farm Ironside Farrar Stage 1 Checking Report Response

With regards to the Stage 1 Checking Report dated 11th April 2025 (reference 63311), we have considered the recommendations in Section 4.3 and provide further information against each recommendation herein.

The responses provided below are based on the Proposed Development layout presented in the Environmental Impact Assessment Report submitted to the Scottish Government Energy Consents Unit (ECU) on 5th November 2024. The Applicant has submitted a Further Environmental Information report to the ECU which includes the proposed removal of turbines T3, T5, T7, T11 and T20. In the interest of clarity and consistency, we have provided responses based on the submitted layout (Proposed Development). The ECU and Ironside Farrar should therefore be cognisant that any risks identified at parts of the Proposed Development which have been removed no longer pose a peat landslide risk.

1. *Given that there are some concerns on this site regarding peat slides and a number of areas of reduced FoS, could a loaded analysis be undertaken or justification provided as to why it is not required – Section 3.1 of this audit refers.*

A loaded analysis has been conducted by adding a load of 10 kPa equivalent to the load implied by a 1m high stockpile of peat (for example side cast during road construction) to the shearing forces of the infinite slope model (Skempton and DeLory, 1957). The method to apply the load is presented below and assumes that all other parameters remain unchanged.

$$\mathbf{F} = \frac{Shear\ Resistance}{Shear\ Forces} = \frac{c' + (\gamma - m.\gamma w).z.cos^2\beta.tan\phi'}{L.sin\beta.cos\beta + \gamma.z.sin\beta.cos\beta}$$

Where:

- F = Factor of Safety
- c' = Effective cohesion
- γ = Bulk unit weight of saturated peat
- γw = Unit weight of water
- m = Height of water table as a fraction of the peat depth

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- z = Peat depth in the direction of normal stress
- β = Angle of the slope to the horizontal
- ϕ' = Effective angle of internal friction
- L = Applied load

The results of the loaded analysis are presented in **Figure 7C.1** attached to this letter response. The loaded analysis reveals that large areas of the Development Site are potentially susceptible to peat landslides under loaded conditions. In particular, the following susceptible areas with Factor of Safety (FoS) values <1.4 have been identified at or near the Proposed Development:

- upslope of T1 and T2;
- north-west of T3;
- at the crane pad for T4;
- north-west of T5;
- at the T6 crane pad and blade laydown;
- downslope of the T7 auxiliary crane pad;
- at the T9 crane pad and blade laydown;
- west of T13;
- north-west of T14;
- upslope of T16;
- west of T17;
- at the turning head for T18;
- at the T19 crane pad;
- upslope of T21 and T22;
- north-west of BP1;
- upslope of BP3, BP4 and BP5;
- at BP6; and,
- west of BP9;

The peat landslide risk assessment has been updated based on the loaded analysis in accordance with the methodology describe in the PLHRA. The updated peat landslide risk assessment is presented in updated **Figure 7C.3** attached to this letter report.

The results of the updated peat landslide risk assessment indicate that the Development Site is still dominated by areas of Negligible to Low peat landslide risk. However, as expected, use of the loaded analysis in the likelihood assessment has increased the peat landslide risk in a number of areas throughout the Development Site. This has resulted in the localised areas of High peat landslide risk being identified at:

- T1 - at the access track north-east;
- T7 - at the access track to the south and at the auxiliary crane pads;
- T19 – at the crane pad and auxiliary crane pad; and at;
- Borrow Pit 2 – upslope to the south-west of the search area.

The following principal parts of the Proposed Development are within areas of Moderate peat landslide risk:

- T1 - at the crane pad and auxiliary pads and to the east and west along the proposed access track;
- T2 – at the southern auxiliary crane pad;
- T3 – the northern part of the blade laydown and in places along the access track;
- T4 – at the crane pad and blade laydown;
- T5 – at the crane pad and in places along the access track;
- T7 – at the crane pad and blade down as well as along the access track;
- T8 – at the auxiliary crane pad and along the access track.
- T9 – at crane pad, blade laydown, auxiliary crane pads and the turning head;
- T11 – all of the Proposed Development at the turbine location and part of the access track;

- T17 – at the blade laydown area;
- T18 – at the turning head and along parts of the access track;
- T19 – part of the crane pad, blade laydown and the turbine location;
- T20 – at the western end of the crane pad and at the turbine location;
- T21 – the location of crane pad, blade laydown, the northernmost auxiliary crane pad and the turning head;
- T22 – at the eastern most auxiliary crane pad;
- Borrow Pit 1 – small areas of the north-eastern corner;
- Borrow Pit 2 – small areas within the north of the search area extent;
- Borrow Pit 6 – within northern part of the search area;
- Borrow Pit 7 – a small area within the search area and upslope to the south-west;
- Borrow Pit 8 – small areas within the search area and upslope to the north;
- Borrow Pit 9 – within the west of the search area and downslope to the to the north-west;
- Temporary Construction Compound 1 – due to the proximity of watercourse the compound is within and area of Moderate risk.

As discussed in the PLHRA, a ground investigation will be undertaken to provide information on the geotechnical characteristics (e.g. shear strength and bulk density) of the peat and underlying mineral substrate as well as the condition of the peat within areas of forestry. The results of the ground investigation will inform the development of an updated peat landslide risk assessment and geotechnical risk register. Where possible, the primary mitigation will be to make use of the micro-siting allowances (50m) to further refine the Proposed Development layout in order to site the Proposed Development in areas of Low or Negligible risk.

The PLHRA all provides recommendations for slope monitoring. In addition to the areas listed in Section 7.1 of the PLHRA slope monitoring will also be undertaken in any areas where material is stored on peat (whether peat or other material) and at:

- T2 – on the upslope area of the turbine;
- T5 – on the downslope area of the hard standings;
- T17 – on the downslope area of the turbine;
- T18 – on the upslope area of the turning head;
- at the Moderate and High risk areas along the access track between T1 and BP5;
- along the access track between T21 and T22;
- upslope of BP1, BP2, BP6, BP7 and BP8;
- downslope of BP9; and,

Visual monitoring will also be undertaken across whole of the Proposed Development to record any signs of tearing, creeping, heaving, subsidence, recent closing of grips / furrows and changes to the peat hydrology. Where movement is suspected, quantitative monitoring will be undertaken to confirm that movements is occurring and/or measures to support the slope will be implemented immediately.

2. *Please clarify why the Peat Landslide Consequence Figure 6B-15 shows areas which exhibit Consequence more than 750m from the development which is noted as a limiting distance. Section 3.2 of this audit refers.*

We recognise that the method of assessment discussed in Section 6.2.1 and 6.2.2 of the PLHRA requires further clarification. To explain further, for receptors such as forestry which covers the majority of the Proposed Development Site consequences scores have been assigned based on the presence or absence of forestry for the whole site. Furthermore, for a site this large with such complex topography the method uses GIS modelling tools to derive potential runout paths to receptors for the entire Development Site. This is based on the OS Terrain 5 DTM and has been

modelled for each receptor individually. The upslope area that could slide down and reach a receptor has been modelled irrespective of distance but respecting physical and topographic barriers (e.g. rivers and ridgelines). A maximum distance of 750m from the receptor has been applied and the modelled runout paths have then been scored depending on the receptor sensitivity to generate scores for each 25m by 25m slope facet. The resulting consequence scores have then been overlaid in GIS and statistical tools have been used to establish the maximum consequence score within each slope facet. This represents an assessment of peat landslide consequences irrespective of the location or factors that could trigger a peat landslide, i.e. it considers the consequences of naturally occurring and anthropogenic peat landslides. We recognise that this is a reversal of the method described in paragraph one of Section 6.2.2 but consider that the method is relevant to the Proposed Development as it is agnostic to the triggering factor and assesses the consequence of a slide occurring at the Proposed Development footprint and beyond the Proposed Development.

3. *Could the Peat Landslide Consequence Figure 6B-15 be reviewed to ensure it is fully systematic with respect to distance and sensitivity of receptor. Section 3.2 of this audit refers.*

We have further reviewed **Figure 7C.2** and note that it shows the incorrect Peat Landslide Consequence Scores layer. An updated **Figure 7C.2** is attached to this letter response. The final peat landslide risk assessment has also been reviewed to ensure that the correct consequence layer was used in the assessment. We can confirm that the peat landslide risk assessment shown in Figure 6B-16 of the PLHRA used the correct consequence scores as shown in the updated version of Figure 6B-15.

4. *Please clarify why The Peat Landslide Risk Figure 6B-16 shows areas which exhibit Risk more than 750m from the development which is noted as a limiting distance. Section 3.3 of this audit refers.*

The is a product of the way in which the consequence has been calculated (see response 2 above) and how GIS calculates the peat landslide risk from the extents of each layer used to calculate the risk. The GIS tools calculate the risk based on the smallest extent of the layers used in the assessment. As such, given that the Peat Depth hazard score layer has the smallest extent (see Figure 6B-12 from the EIA Report) GIS has calculated the peat landslide likelihood and subsequently the peat landslide risk within the extents of the Peat Depth Hazard layer. This methodology presents the peat landslide risk for each of the 25m x 25m slope facets for the whole site including areas >750m from the Proposed Development.

Yours faithfully

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