Design and Access Statement

Teindland Wind Farm

Document prepared by Envams Ltd for Teindland Wind Farm Ltd

April 2025

Contents

1 INTRODUCTION

This document summarises the key design aspects of the Teindland Wind Farm ('the Development') and access considerations that have been taken into account in the design. This document meets the requirements of relevant guidance on Design and Access Statements[1,2,3].

2 SITE DESIGN PRINCIPLES

The design aim for the Development was to maximise the generation capacity within the Site, taking into consideration environmental, human and engineering constraints. Other key design principles were to:

- Minimise environmental impacts through application of the mitigation hierarchy;
- Ensure applicable safety standards are met for the BESS; and
- Conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention.

An assessment of compliance with these principles is provided in Section 4 of this document.

3 SITE COMPONENTS

The Development would consist of the following separate elements, as listed below. The application (EIA Report, Volume 2) includes figures showing the layout and dimensions of these:

- Up to 12 wind turbines and external transformers (if required), eight with a maximum tip height of up to 230 m, and four with a maximum tip height of 200 m;
- Associated foundations and crane hardstandings at each wind turbine location;
- Access tracks linking the turbine locations comprising of a combination of new and upgraded existing tracks (14.1 km of track in total, 6.3 km of which is upgraded and 7.8 km of which is new);
- Battery Energy Storage System (BESS) compound with a total of approximately 85 MW export capacity;
- One meteorological mast;
- Network of underground cabling;
- Substation compound; and
- One construction and storage compound.

3.1 WIND TURBINES

The Development includes up to 12 turbines, eight with a maximum tip height of up to 230 m, and four with a maximum tip height of 200 m. Each turbine will require a small transformer located either inside the turbine or adjacent to the tower.

Each foundation would be designed according to the geotechnical site investigations undertaken during the enabling works to establish the nature of the subsoil condition at each turbine location. Typically, foundations are expected to have an approximate diameter of 25 m.

[1] Heads of Planning Scotland (undated). A guidance note on the national standards for the validation and determination of planning applications and other related consents in Scotland. Available at: http://www.moray.gov.uk/downloads/file116992.pdf [accessed on 16/04/2025].
[2] CABE (2006). Design and Access Statements: How to Read, Write and Use Them. Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20110118100309/http:/www.cabe.org.uk/publications/design-and-access-statements [accessed on 16/04/2025].
[3] Scottish Government (2013). Planning Circular 3/2013: Development management procedures. Available at: https://www.gov.scot/publications/planning-series-circular-3-2013-development-management-procedures/pages/6/ [accessed on 16/04/2025].

The main working area at each hardstanding area composed of crushed stone will be approximately 115 m by 70 m, the footprint of the main hardstanding will be up to approximately 3,600 m^2, as shown on EIA Report Figure 4.4. In addition to the main hardstanding area, there will be smaller hardstanding areas for the crane assist and blade finger areas. Additional flattened areas will be used for crane assembly and turbine blade storage; however, these will be temporary and not constitute hardstanding.

Trees will be cut in a 'key-hole' shape centred on the turbine base. This area will be kept clear of trees during the operation phase of the Development in order to reduce any potential impact of the wind turbines on bats.

3.2 BATTERY ENERGY STORAGE UNITS (BESS)

The Development would include approximately 19 BESS units and the BESS compound will measure approximately 100 m by 100 m, located at approximately NGR 329141, 854248. The units will include monitoring, fire detection and suppression systems.

It will have capacity to store up to 171 MegaWatt-hours (MWh) of energy and an maximum power output of approximately 85 MW. The battery units will be supported by Power Control System (PCS) units, comprising inverters and transformers, required to connect the batteries to the electrical grid.

These are likely to be based on steel shipping containers with an appropriate RAL light grey and/or green powder coated finish, the final details of which will be agreed with Moray Council.

3.3 METOEROLOGICAL MAST

One meteorological mast, of height up to 149.9 m, will be installed. It will be secured with guy wires. An area within 25 m of the guy wires will be kept clear of trees for the operation phase of the wind farm, to avoid risk of damage to the wires and mast.

3.4 ELECTRICAL CABLING

Onsite cabling will be laid underground alongside or within the access tracks where possible, linking the turbine transformers to the wind farm control building, substation and the BESS. Cables will be laid at a depth of approximately 1 m below ground level. Cables will be marked above ground with white poles, c. 2 m tall.

3.5 SUBSTATION COMPOUND

A substation compound with a control building will be located in the southeast of the Site at approximately NGR 330775, 853072, measuring approximately 100 m by 100 m with external transformer and connection equipment. The compound will also include space for any Distribution Network Operator equipment to facilitate the grid connection.

3.6 CONSTRUCTION AND STORAGE COMPOUND

A construction compound will be required during the construction of the Development, forming an area of hardstanding providing space for temporary construction cabins, parking and lay down areas; this will measure approximately 100 m by 150 m and will be located within the north of the Site, at approximately NGR 329077, 855910. Part of this area may be used during the operation phase for storing stone from any tracks that the landowner requires to be deconstructed following the end of the construction phase, for when it is needed for maintenance and/or decommissioning.

3.7 SITE FENCING

The BESS units would be enclosed within a fence that will include small holes, or gates, at ground level to allow small mammals through. As a further security measure, CCTV cameras will be sited within the compound.

3.8 LIGHTING

Civil Aviation Authority (CAA) guidance requires that 'en-route obstacles' at or above 150 m above ground level are lit with visible lighting to assist their detection by aircraft. As such,

there is potential that parts of the Development may be visible at night. To ensure compliance with the Air Navigation Order 2016, the turbines at the Development will be fitted with lighting as agreed with the CAA. To minimise night-time amenity effects, the lighting will be kept to the minimum required by the CAA.

A scheme of lighting has been agreed with the CAA:

- The perimeter turbines (as shown on Figure 4.1 of the EIA Report) numbered 1, 4, 8 and 12 will be fitted with medium intensity (2000 candela) omni directional visible red aviation lighting which will be located on the hub. The lights will be reduced in brightness to 200 candela when visibility is greater than 5 km; and
- A secondary light (of the same specification) will be fitted for use only when the primary light fails and would not be lit concurrently.

The lights will be turned on at evening twilight until morning twilight, and also during the day if sunlight intensity is very low, in accordance with normal standards and CAA requirements.

The lights will be such that at angles below the horizontal, substantially reduced light intensity will be visible. Given that the turbine hubs are at greater elevation than all night-time visual receptors within 20 km, this substantially reduces night-time lighting effects.

An assessment of the effects of aviation lighting using these specifications is provided in Chapter 5: Landscape and Visual Impact Assessment.

In addition to the above visible lighting, infrared “lights” (non-visible) will be used to meet Ministry of Defence requirements.

3.9 BIODIVERSITY ENHANCEMENT

As set out in the Outline Habitat Management Plan (oHMP), provided as Technical Appendix A6.5 of the EIA Report, the following habitat creation and enhancement measures are proposed:

- Provide compensatory planting (40.21 ha) for permanently felled areas;
- Temporary felled areas (36.60 ha) will be replanted or facilitated to regenerate naturally in line with standard forestry practice;
- Erection of five artificial osprey platforms.
- Riparian corridors (30m buffer) should be felled and re-planted with native broadleaf species in suitable locations. several areas totalling 20.47 ha have been identified for consideration;
- Fell coniferous woodland surrounding identified wetlands and re-plant with native broadleaves. Areas totalling 4.12 ha have been identified for consideration;
- Remove/control Rhododendron populations (9.27 ha in total); and
- A total of 22.71 ha of keyholed woodland surrounding turbines will be left as open ground to contribute towards the 10% open ground target as detailed as a secondary objective within the Teindland Management Plan.

3.10 WATERCOURSE CROSSINGS

The track layout design has sought to limit the number of watercourse crossings; however, given the nature of the Site a number of crossing points are necessary. The access tracks will require two new watercourse crossings and the upgrade of six existing watercourse crossings across all sections of the Development. The locations of watercourse crossings are detailed in the EIA Report Technical Appendix A12.2: Watercourse Crossings.

The type and design of each watercourse crossing will be dependent on the stream morphology, peak flows, local topography and ecological requirements, and will be chosen so as to minimise potential environmental effects.

Crossings would be designed in accordance with Construction Industry Research and Information Association (CIRIA) Culvert design and operation guide (C689)[4] and

[4] Construction Industry Research and Information Association (CIRIA) (2010) Culvert design and operation guide (C689). London: CIRIA.

incorporating the most recent climate change allowances, to ensure sufficient capacities for spate or flooding events.

Crossings would be subject to the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)[5] (CAR) and Water Environment (Miscellaneous) (Scotland) Regulations 2017[6].

3.11 GRID CONNECTION

The grid connection does not form part of the Section 36 consent application for the Development. The consent for the grid connection will be sought by the relevant Distribution Network Operator (DNO), SSEN, via a separate Section 37 application. The connection point is at the Blackhillock substation, near Keith.

4 APPLICATION OF THE DESIGN PRINCIPLES

4.1 MINIMISING ENVIRONMENTAL IMPACT

Environmental impact has been minimised principally through the following measures:

- Avoiding impacts:
  - Selection of a site that is set away from locations used by many people;
  - Selection of a site that is not highly visible from a particularly wide or sensitive area;
  - Selection of a site that has no designations or other particularly highly valued or sensitive receptors;
  - Maintaining public access through the Site;
- Minimising impacts:
  - Setting back infrastructure from residential properties and conducting assessments of noise and residential visual amenity in advance of design fix, to ensure effects should be acceptable;
  - Locating the BESS at least 400 m away from residential properties;
  - Proposing SuDS measures to minimise drainage and pollution impacts;
  - Including an Outline Construction Environmental Management Plan (oCEMP) in the planning application, to ensure control of construction activity;
- Mitigating any unavoidable impacts, including proposing key-hole areas within the forest, around turbines, to minimise impacts on bats, and providing artificial nest platforms for osprey, and a shadow flicker management and mitigation strategy; and
- Compensating for residual impacts, including providing off-site compensatory planting of woodland, in lieu of the area of woodland lost as a result of the wind farm, and restoring environmental features, such as native broadleaf tree planting along riparian corridors.

4.2 MEETING SAFETY STANDARDS FOR THE BESS

To meet this design principle, the NFCC guidance has been followed, resulting in a design in which:

- The batteries units are located at least 10 m away from vegetation;
- An alternative direction of access to the BESS compound has been integrated into the design to allow continued access to the Site for emergency vehicles, should an incident occur, and the main access track be inaccessible;
- The nearest residential property is over 400 m from the BESS, which exceeds the minimum distance;
- The prevailing winds at the Site are south-westerly. The access routes have been designed accordingly with the main access being from the southwest of the BESS compound, and an alternative access being from the northwest; and

[5] Scottish Government (2011) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). Available at: https://www.legislation.gov.uk/ssi/2011/209/contents/made [Accessed 24/02/2025].
[6] Scottish Government (2017) Water Environment (Miscellaneous) (Scotland) Regulations 2017. Available at: https://www.legislation.gov.uk/ssi/2017/389/contents/made [Accessed 24/02/2025].

- There will be a water tank onsite with the capacity of at least 228 m^3. The proposed water tank is situated to the northwest of the BESS units. Multiple hydrants may be installed across the BESS compound to ensure at least one will be accessible regardless of what the wind direction is during an incident.

Other requirements of the NFCC guidance depend on the specific technology and model of equipment selected, which will be decided post-consent. The detailed layout of the BESS and the controls that the selected technology offers will be subject to consultation with the Scottish Fire and Rescue Service prior to commencing construction of the BESS.

4.3 CONSERVE, RESTORE AND ENHANCE BIODIVERSITY

Adverse impacts on habitats and biodiversity have been considered through the design of the Development, as assessed in chapter 6 of the EIA Report.

This demonstrates the loss of some less-valued habitats (commercial conifer forest), and the creation of substantially more highly-valued habitats. Specifically:

- Provide compensatory planting (40.21 ha) for permanently felled areas;
- Temporary felled areas (36.60 ha) will be replanted or facilitated to regenerate naturally in line with standard forestry practice;
- Erection of five artificial osprey platforms;
- Riparian corridors (30m buffer) should be felled and re-planted with native broadleaf species in suitable locations. several areas totalling 20.47 ha have been identified for consideration;
- Fell coniferous woodland surrounding identified wetlands and re-plant with native broadleaves. Areas totalling 4.12 ha have been identified for consideration;
- Remove/control Rhododendron populations (9.27 ha in total); and
- A total of 22.71 ha of keyholed woodland surrounding turbines will be left as open ground to contribute towards the 10% open ground target as detailed as a secondary objective within the Teindland Management Plan.

The Outline Habitat Management Plan (oHMP), provided as Technical Appendix A6.5 of the EIA Report discusses the above and details how these measures will be monitored and reported on.

4.4 SUMMARY

Sections 4.1 to 4.3 of this report demonstrate that the design of the Development has met the design principles that were set out in Section 2.

5 ACCESS

Relevant guidance on Design and Access Statements, as set out in Section 1, sets out that the ‘access’ part should address how use of the site by persons with disabilities has been considered.

5.1 PUBLIC ACCESS

Access to the Site will be taken from the north via an existing entrance point off the B9103, as shown on Figures 4.1 and 4.12. This access point will need to be widened on its north-western side, to accommodate delivery of the turbine components. It will be metalled in a bell-mouth shape for the c. 10 m nearest to the public highway.

This location is currently the main access for forestry traffic. Immediately adjacent to the track, c. 20 m from the public road, is an area of hardstanding used for public parking, typically for people using the forest for recreation purposes. This will remain accessible by the public during all phases of the Development, except for a short period at the start of the construction phase when works to the access point and the first section of the access track will prevent access for safety reasons.

There is a gate on the access track into the forest, just past the public parking area. This will be maintained during all phases of the Development.

Public access to the Site would continue during all phases of the Development. Where routes used by the public intersect with construction activities, these would be managed by construction staff to ensure access could continue safely (e.g., 2-way gates). The usage by the public of the main track through the forest would not be accessible during the construction phase, as it would be an active construction site, however it would become available again following construction completion.

5.2 DISABLED ACCESS

Once operational, the Development will be not be staffed full time, but would be used by staff for service and maintenance.

The majority of the site, comprising access tracks and wind turbines, will be accessible by vehicle, but will necessarily be of rough (compacted stone) surface. Access to the turbines would require specialist equipment that may or may not be able to be made suitable to persons with disabilities, depending on the nature of the disability.

The detailed design of the substation compound will be prepared post-consent, when the make, model and specification of the technical equipment required as part of the substation will be decided. The parking and welfare facilities at the substation will be designed to be suitable for persons with disabilities, including low profile kerbs, ramps instead of, or as well as, steps, wide doors and wheelchair accessible toilets. The substation/control building will meet Building (Scotland) Regulations 2004 requirements and where applicable will take cognisance of the relevant recommendations as contained in BS 8300:2009 – Design of Buildings and their approaches to meet the needs of persons with disabilities.

6 SUMMARY AND CONCLUSIONS

This document has set out the rationale guiding the design of the Development, the main components, and commentary on accessibility.