Environmental Impact Assessment Report

Beinneun 2 Wind Farm

Volume 1

Chapter 14: Other Issues

Document prepared by Envams Ltd for Beinneun 2 Ltd

July 2025

Contents

14 OTHER ISSUES

14.1 INTRODUCTION

In this chapter, Envams Ltd have assessed potential effects on environmental aspects not included elsewhere in this EIA Report on behalf of Beinneun 2 Wind Farm Ltd.

The Site is solely within the planning authority area of The Highland Council. The wind turbines and the associated infrastructure are collectively known as the Beinneun 2 Wind Farm ("the Development"). The Site and turbine layout are shown on Figure 4.1 and the Development is described in Chapter 4, Development Description. The Development would be operated for up to 40 years and then decommissioned.

The Development will comprise:

- Up to 19 wind turbines, with a maximum tip height of up to 200 m;
- Associated foundations and crane hard standings at each wind turbine location;
- Access tracks linking the turbine locations comprising of 17.5 km of new tracks;
- Battery Energy Storage System (BESS) compound containing approximately 26 no. 40-ft (or equivalent) battery containers;
- One meteorological mast;
- Network of underground cabling;
- Borrow pits;
- New substation compound; and
- Two construction and storage compounds, one of which will be at the BESS/substation compounds.

14.1.1 Other Issues

The topics covered in this chapter are:

- Aviation;
- Telecommunications;
- Waste;
- Major accidents and disasters, including battery safety; and
- Transboundary effects.

14.1.2 Supporting Information

The following Technical Appendices (TAs) have been prepared in support of this chapter, and are provided in Volume 3 of this EIA Report:

- TA A14.1: Aviation Lighting Proposal; and
- TA A14.2: Outline Battery Safety Management Plan.

14.1.3 Competence

This chapter has been overseen and reviewed by Paul Phillips, one of the directors of Envams Ltd, an environmental and planning consultancy specialising in renewable energy development in the UK. Paul is an IEMA Registered Environmental Impact Assessment Practitioner with over 20 years experience in Environmental Impact Assessment, the large majority of which he has spent working on renewable energy developments.

14.1.4 Consultation

A scoping opinion was issued by the Scottish Government Energy Consents Unit (ECU) on behalf of the Scottish Ministers to Beinneun 2 Ltd. The Scoping Opinion is reproduced as Technical Appendix A2.1.

Details of comments relevant to this chapter are provided in Table 14.1. Where consultees did not respond or had no comments, these are not listed.

Table 7.1: Details of Consultation Comments and the Applicant's Response

Consultee	Key Comments	Response/Action Taken
Scottish Ministers (Energy Consents Unit) Scoping Opinion (similar comments are made by The Highland Council and NatureScot and these are not repeated here)	3.16 As the maximum blade tip height of turbines exceeds 150m the LVIA as detailed in chapter 4 of the scoping report must include a robust Night Time Assessment with agreed viewpoints to consider the effects of aviation lighting and how the chosen lighting mitigates the effects.	A proposed scheme of aviation lighting is included as TA A14.1. This proposes a reduced level of lighting compared to the default, but one that is commonly accepted by the Civil Aviation Authority (CAA) and other aviation consultees. The visual effects of night time lighting are assessed in EIA Report chapter 7, Landscape and Visual Impact Assessment. This assessment considers the worst-case aviation lighting scheme (the default) rather than the reduced scheme as proposed in TA A14.1, given that the latter has not yet been agreed with relevant consultees.
The Highland Council (THC) Response to Scoping	Aviation, Radar and Telecoms 3.89 The EIAR needs to recognise community assets that are currently in operation for example TV, radio, tele-communication links, aviation interests including radar, MOD safeguards, etc. In this regard the applicant, when submitting a future application, will need to demonstrate what interests they have identified and the outcomes of any consultations with relevant authorities such as Ofcom, NATS, BAA, CAA, MOD, Highlands and Islands Airports Ltd, etc. through the provision of written evidence of concluded discussions / agreed outcomes. We consider the results of these surveys should be contained within the EIAR to determine whether any suspensive conditions are required in relation to such issues. 3.90 There should be continued dialogue with HIAL over the impact on the radar at airports in the area. 3.91 If there are no predicted effects on communication links as a result of the development, the EIAR should still address this matter by explaining how this conclusion was reached.	Potential effects on telecommunications are set out in Section 14.3. Potential effects on aviation are set out in Section 14.2.
	Miscellaneous: Health and Safety and Shadow Flicker 3.92 The EIAR needs to address all relevant climatic factors which can greatly influence the impact range of many of the preceding factors on account of seasonal changes affecting, rainfall, sunlight, prevailing wind direction etc. From this base data information on the expected impacts of any development can then be founded recognising likely impacts for each phases of development including construction, operation and decommissioning. Issues such as dust, air borne pollution and / or vapours, noise, light, shadow-flicker can then be highlighted. Consideration must also be given to the potential health and safety risks associated with lightning strikes and ice throw given the proximity of recreational routes through the site. 3.93 Depending on the proximity of the working area and access route to any houses etc. the applicant may require to submit a scheme for the suppression of dust during construction. Particular attention should be paid to construction traffic movements and routing.	The design of the Development, as set out in Chapter 4, Development Description, and its evolution, as set out in Chapter 3, Site Selection and Design Evolution, have taken meteorological factors into consideration, such that the Development will operate safely in all weather conditions. The shortest distance from a residential property to a proposed turbine is 1.92 km, and all of the nearest residential properties are to the south of the turbines. Turbine rotor diameters are not likely to be larger than c. 173 m, given the maximum tip

Consultee	Key Comments	Response/Action Taken
	3.94 A number of the aforementioned matters could be addressed by a CEMD for the proposal. While acceptable in principle we would request that an Outline CEMD is included with the application. 3.95 Given the reported separation distance from any nearby residential properties, it is accepted that a shadow flicker assessment is not required to be undertaken.	height of 200 m, and hence all properties are at greater distance than 10 rotor diameters, confirming that shadow flicker does not need to be assessed in this EIA Report. Potential effects on recreation receptors are assessed in Chapter 13, Socio-economics, tourism, recreation and land use. There are no existing recreational routes within the Site. Construction traffic and routing are assessed in Chapter 11, Traffic and Transport. An outline Construction Traffic Management Plan (CEMP) is provided in this EIA Report as TA A4.1, including measures to minimise dust creation and construction noise and lighting.
Defence Infrastructure Organisation (DIO) Response to Scoping	Physical Obstruction In this case the development falls within Low Flying Area 14 (LFA 14), an area within which fixed wing aircraft may operate as low as 250 feet or 76.2 metres above ground level to conduct low level flight training. The addition of turbines in this location has the potential to introduce a physical obstruction to low flying aircraft operating in the area. To address the impact up on low flying given the location and scale of the development, the MOD would require that conditions are added to any consent issued requiring that the development is fitted with aviation safety lighting and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction. The development proposed includes wind turbine generators that exceed a height of 150m agl and are therefore subject to the lighting requirements set out in the Air Navigation Order 2016. In addition to CAA requirements, the MOD will require the submission, approval, and implementation of an aviation safety lighting specification that details the installation of MOD accredited aviation safety lighting.	Aviation issues are addressed in Section 14.2. A proposed scheme of aviation lighting is set out in TA A14.1.
Scottish Environment Protection Agency (SEPA) Response to Scoping	Forest removal and forest waste 5.1 If forestry is present on the site, we prefer a site layout which avoids large scale felling as this can result in large amounts of waste material and a peak in release of nutrients which can affect local water quality. The submission must include a map with the boundaries of where felling will take place and a description of what is proposed for this timber in accordance with Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Guidance from SEPA, SNH and FCS.	There is no forestry within the Site nor proposed tree felling as part of the Development. The Site boundary has reduced slightly since Scoping stage, which has removed all areas of forestry from within the Site boundary.
	8.2 The submission needs to state that there will be no discarding of materials that are likely to be classified as waste as any such proposals would be unacceptable under waste management licensing. Further guidance on this may be found in the document “Is it waste - Understanding the definition of waste”.	Waste is considered in Section 14.4.

14.2 AVIATION

Aviation has been considered in the design of the Development. The site lies within Class G airspace, which is classified as open and unrestricted from a civilian aviation standpoint. From a military aviation perspective, it is situated within Low Flying Area (LFA) 14T and Night Allocated Region (NAR) 1BE, regularly used by RAF and NATO aircraft for training, including low-level operations.

The Development includes a strategy to minimise aviation lighting whilst meeting the required safety standards (as set out in TA A14.1). This includes a combination of visible red lighting on selected turbines in accordance with Civil Aviation Authority (CAA) ANO regulations, and infrared (IR) lighting on all turbines as per Ministry of Defence (MOD) requirements for Night Vision Equipment (NVE) compatibility.

The lighting plan has been tailored to balance operational safety and environmental sensitivity by minimising visual intrusion while maintaining compliance. Nine of the 19 turbines will have visible red lighting, and all 19 will be equipped with MOD-specified IR lights. No mid-mast lighting is proposed due to its limited benefit and potential for increased light pollution. All lighting will operate during hours of darkness, and CAA (i.e., visible) lighting will include an intensity reduction feature in clear visibility conditions, further reducing environmental impact.

Consultations were undertaken at the EIA Scoping stage, during which no objections were received from any civil or military aviation stakeholders, including local airports. As set out in Table 14.1, the MOD (as the DIO) responded requiring turbines to be identified as obstructions on aviation charts and for lighting, as proposed. It is expected that the Section 36 consent for the Development would include planning applications requiring the final locations and dimensions of turbines to be notified to the relevant authorities, allowing them to be added to the relevant charts, and for the approved scheme of aviation lighting to be implemented.

In summary, aircraft operations and aviation receptors have been fully considered, and the development will proceed with an aviation lighting scheme that prioritises both safety and environmental responsibility.

14.3 TELECOMMUNICATIONS

Consultation with telecommunication operators was undertaken through the Scoping consultation by the Scottish Government, and no potential impacts were identified. The final turbine design has been a reduction in size and extent of the turbine envelope of the scheme proposed at Scoping, so no effects on telecommunication operators are anticipated.

14.4 WASTE

Given the nature of the Development and its construction process, no significant quantities of waste are anticipated during the construction and operation phases. Waste during the decommissioning stage will comprise the above-ground components of the Development, which are expected to be fully recycled.

14.4.1 Construction Phase

There will be no major stream of waste creation as part of the construction phase. Stone and soils excavated and/or used temporarily in the construction process will be used in restoration of borrow pits and the construction compound, as well as around turbine foundations and other infrastructure, and will not be waste.

Minor waste streams will include:

- Timber from temporary supports, shuttering and product deliveries;
- Sanitary waste from chemical toilets (if used);
- Plastics packaging of material.

A Site Waste Management Plan (SWMP) is proposed in the Outline CEMP (TA A4.1) and a final version will be agreed prior to the commencement of construction.

Waste oils and diesel will be removed from the Site and disposed of by an approved waste contractor in accordance with provisions of the Special Waste Regulations 1996[1].

All waste will be removed off-site for safe disposal at a suitably licensed waste management facility in accordance with current waste management regulations.

14.4.1.1 Operation Phase

During the operation phase of the Development the Site would not be routinely staffed, although maintenance personal would be expected to be present on site occasionally. Waste arising is expected to be substantially less that during the construction phase, and could include:

- Welfare facility waste;
- Packaging waste (from replacement components); and
- General waste (paper, cardboard, wood, etc.).

Welfare waste would be contained in a septic tank or cesspit, as set out in Chapter 4, and any cesspit would be emptied periodically by a licenced contractor.

14.4.1.2 Decommissioning Phase

The decommissioning phase will involve the removal of the Development, as set out in Chapter 4, Section 4.5.

Arising materials will be recycled, where this is practicable, which is expected to be entirely or almost entirely. Any residual, non-recyclable materials will be disposed of in accordance with legislation in place at that time.

14.5 MAJOR ACCIDENTS AND DISASTERS

The potential for road accidents is addressed in Chapter 11, Traffic and Transport. The potential for chemical leaks, spills and other pollution is addressed in Chapter 12, Hydrology, and subject to control measures set out in TA A4.1, oCEMP. Health and safety during construction is addressed in Chapter 4, Section 4.3.5.

Battery safety is discussed in Section 14.5.1 and TA A14.1 presents an outline Battery Safety Management Plan (oBSMP).

No other major accidents or disasters with consequences for, or from, the Development are anticipated.

14.5.1 Battery Safety

The Development includes a battery energy storage system (BESS). As set out in Chapter 4 – Development Description, this would include battery containers and associated inverters, transformers and cabling. Batteries are used in a very large number of domestic and commercial appliances, and only rarely fail, and even more rarely fail in a way that could be a hazard. However, as noted by the National Fire Chief's Council (NFCC) guidance[2], "*a number of high profile incidents have taken place and learning from these incidents continues to emerge*".

Potential issues arise when a battery fault occurs, causing the battery to overheat. If overheating continues unchecked, certain battery technologies have risk of thermal runaway and a fire. The fire could spread to other battery cells within the same container, and potentially from container to container, if the fire is sufficiently strong and the containers are close enough and/or without intervening fire protection. The fire can cause toxic smoke, and fighting this with water can lead to contaminated water on the ground around the containers. This is a theoretical worst-case scenario, because well-established measures will be in place to prevent this occurring, as set out in this section.

[1] UK Government (1996) The Special Waste Regulations 1996. Available at: https://www.legislation.gov.uk/uksi/1996/972/contents/made [Accessed 07/07/2025].

[2] National Fire Chiefs Council (2022). Grid Scale Battery Energy Storage System planning – Guidance for FRS. https://nfcc.org.uk/wp-content/uploads/2023/10/Grid-Scale-Battery-Energy-Storage-System-planning-Guidance-for-FRS.pdf [accessed on 07/07/2025].

14.5.1.1 Siting

The proposed BESS unit (as shown on Figure 4.1), is approximately 2.2 km at its closest point from the nearest residential property. The BESS is located outside of any environmentally sensitive areas. The BESS has therefore been sited in a suitable location.

14.5.1.2 Design and Operational Management

There is a substantial body of legislation governing the construction and operation of a BESS facility. This legislation will be complied with.

Prior to detailed design of the Development, consultation on the oBSMP will be undertaken with the Scottish Fire and Rescue Service. A full and final BSMP will then be developed, based on the oBSMP.

On this basis, the likely risks associated with a potential fire in a battery unit are not significant.

14.6 TRANSBOUNDARY EFFECTS

In the EIA Regulations, transboundary effects relate to potential effects on other EU member states. The nearest EU member state is the Republic of Ireland, and there is no potential for the Development to have significant effects at that distance.