# Cloud Hill Wind Farm

## Volume 4 - Non-Technical Summary

PREPARED FOR

BayWa r.e.

DATE
24 October 2024

REFERENCE
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# PREFACE

This Additional Environmental Information Report (AEI Report) has been prepared to support the application for the Cloud Hill Wind Farm and should be reviewed in conjunction with the previous documents that accompany the application for Section 36 Consent.

In August 2023, Cloud Hill Windfarm Ltd (the Applicant), submitted an application supported by an Environmental Impact Assessment Report (EIA Report), for consent pursuant to Section 36 of the Electricity Act 1989 (ECU00003461) to install and operate the Cloud Hill Wind Farm (the Original Development). The Original Development comprised 11 wind turbines with a maximum height to blade tip of 180 metres (m) and associated infrastructure, with a generating capacity exceeding 50 Megawatts (MW).

Following the submission of the EIA Report, and upon receipt of the consultation responses, the Applicant has taken the decision to remove Turbine 8 (T8) from the Original Development, along with moving the position of Turbine 1 (T1) north of its original location, and relocation of the existing substation / battery storage facility southeast near to Whing Head. Subsequently, 'the Revised Development' (**AEI Figure 1.2, Revised Development Site Layout**) now comprises a total of 10 wind turbines and a relocated substation / battery storage facility location.

The effects of these changes to the Original Development need to be reassessed under the EIA Regulations.

The Applicant has therefore prepared this Additional Environmental Information Report (AEI Report) which provides an update to the EIA Report, and should be read in conjunction with the EIA Report, to respond to specific points raised by the consultees during the consultation process, and to provide an assessment of effects arising from the Revised Development.

This AEI Report is structured as follows:

- AEI Volume 1 Main Text / Chapters
    - **Chapter 1 Introduction** – sets out the background of the AEI Report, the Revised Development, the Applicant, the EIA Project Team and other subcontractors involved in the delivery of the AEI;
    - **Chapter 2 EIA Methodology** – sets out the EIA methodology for the AEI Report, all of the consultation responses since the publication of the EIA Report, baseline review and update, approach to mitigation and cumulative effects assessment and contact details;
    - **Chapter 3 Site Selection and Alternatives** – sets out and justifies all the design changes considered following the publication of the EIA Report;
    - **Chapter 4 The Revised Development** – provides a detailed description of the Revised Development and changes to design;
    - **Chapter 5 Updated Planning Policy and Energy Policy** – outlines any new updated planning policy and energy policy since the publication of the EIA Report; and
    - **Chapter 6 – Chapter 17 –** sets out the assessments for the relevant environmental topics that have either been assessed in light of the Revised

Development or have been confirmed that there is no change to the Original Development EIA Report.

- AEI Volume 2 Figures;
- AEI Volume 3 Technical Appendices; and
- AEI Volume 4 Non-Technical Summary.

Part 5 of the EIA Regulations requires that the AEI Report be made available for public viewing. To comply with these regulations, the AEI Report and supporting documentation to the application, together with a notice of the application, can be viewed on the Cloud Hill Wind Farm project website: https://www.baywa-re.co.uk/en/wind/cloud-hill-windfarm. The application will also be available for public viewing on the Energy Consents Unit website (ECU Reference: ECU00003461).

Hard copies of the application submission may be obtained at a charge of £1,700 per hard copy. USB copies are free of charge. Copies of the Non-Technical Summary are available free of charge. To request a copy of the application submission please contact:

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c/o BayWa r.e. UK Limited

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The viewing locations for the Non-Technical Summary are as follows:

- D G Customer Services – Sanquhar Library (Opening Hours - Tuesdays 9am -12noon Wednesdays and Fridays 9am to 5pm (Closed between 12 noon and 1pm). Address: 100 High Street, Sanquhar, DG4 6DZ;
- Kirkonnel Parish Heritage Society (Opening Hours - Monday to Friday 9am – 5pm (Closed between 12 noon and 1pm). Address: 40a Main Street, Kirkconnel Dumfries & Galloway DG4 6NB; and
- Dumfries & Galloway Council Headquarters Kirkbank House Building (Opening Hours - Mondays, Tuesdays, Thursdays and Fridays from 9am to 5pm and Wednesdays 10am to 5pm. Address: Council Headquarters, English Street, Dumfries DG1 2DD.

# 1. INTRODUCTION

This Non-Technical Summary (NTS) summarises the Additional Environmental Information (AEI) Report which accompanies the application to the Scottish Ministers for consent under Section 36 of the Electricity Act 1989 (s36 consent) by Cloud Hill Windfarm Ltd (the Applicant) to construct and operate a wind farm known as Cloud Hill Wind Farm, located approximately 4.5 km south of Sanquhar, and approximately 4 km south-east of Kirkconnel, in the Dumfries and Galloway Council Area (Grid Reference 274802, 606254). The installed capacity of the proposed generating station would be over 50MW, comprising up to 10 turbines with a maximum ground to blade tip height of up to 180 metres, substation and a Battery Energy Storage Facility (BESS). Based on the anticipated generating capacity, the Homes Powered Equivalent for the Revised Development has been calculated as 59,359.3 homes.

This NTS is intended to be read alongside the application, AEI Report and associated application documents for the Revised Development.

## 1.1 THE APPLICANT

Cloud Hill Windfarm Ltd, a subsidiary of BayWa r.e. UK is a leading international renewable energy developer and service provider with offices in Glasgow, Edinburgh, Milton Keynes and Cork. In the UK and Ireland, BayWa r.e. UK has a development pipeline of over 600 MW of onshore wind, 1.5 GWp of solar, and 1 GW of battery energy storage projects. In addition to onshore technologies, BayWa r.e. UK Ltd. is part of Buchan Offshore Wind, which is developing a 960 MW floating offshore wind farm off the northeast coast of Scotland.

## 1.2 THE SITE

The Site entrance is located approximately 0.5 km south-west of Sanquhar, with the turbines and ancillary infrastructure located approximately 4.5 km from Sanquhar. The Site Red Line Boundary covers approximately 804 hectares (ha) and is centred on NGR 274802, 606254 **AEI Figure 1.1, Site Location Plan**. The Site is located entirely within the Dumfries and Galloway administrative boundary and remains as fully described in the Non-Technical Summary and EIA Report of the Original Development.

The topography of the Site and immediate vicinity is relatively complex, as shown in **AEI Figure 1.2, Revised Development Site Layout**. The elevation of the Site ranges from 470 metres (m) Above Ordnance Datum (AOD) in the south-east of the Site and falls to around 150 m AOD in the north-east of the Site. Further information on the Site, which is unchanged since the EIA Report, is provided in **Section 1.2** of **Chapter 1, Introduction of the EIA Report.**

# 2. EIA METHODOLOGY

EIA is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to mitigate or manage any significant adverse effects. The assessment must be carried out following consultation with statutory consultees, other interested bodies and members of the public.

The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on a proposal. Where one or more significant effects are identified, it does not automatically follow that a proposal should be refused.

Following submission of the Cloud Hill Wind Farm application for consent, which included the EIA Report, consultation responses were received from statutory and non-statutory consultees. Some of the responses which required further action to be taken, or further information presented in the AEI, were received from:

- Dumfries and Galloway Council (DGC) (considered in Chapter 6 of the AEI);
- East Ayrshire Council (EAC) (Chapter 6 and Chapter 14);
- Energy Consents Unit (ECU) (Chapter 10);
- Historic Environment Scotland (HES) (Chapter 9);
- NatureScot (Chapter 6, Chapter 7, Chapter 8 and Chapter 10)
- Royal Society for the Protection of Birds (RSPB) (Chapter 8);
- Scottish Environment Protection Agency (SEPA) (Chapter 7, Chapter 8, Chapter 10 and Chapter 11);
- ScotWays (Chapter 14);
- Transport Scotland (Chapter 13);
- Scottish Water (Chapter 11)
- Joint Radio Company (JRC) (Chapter 16);
- BT Group (Chapter 16);
- The Coal Authority (Chapter 16);
- Glasgow Airport and Glasgow Prestwick Airport (Chapter 16);
- Kirkconnel and Kelloholm Community Council (Chapter 14);
- Ministry of Defence (MOD) (Chapter 16);
- National Air Traffic Services (NATS) (Chapter 16);
- Nith District Salmon Fishery Board (NDSFB); and
- Royal Burgh of Sanquhar and District Community Council (Chapter 14);

The further actions and information provision to these responses is presented in the relevant technical assessment chapters of the AEI.

The following assumptions have also been made for the AEI report:

- The principal land uses adjacent to the Site remain as they are at the time of writing, except in cases where permission has already been granted for a development. In these

cases, it is assumed that the approved development will take place, and these have been considered within the assessment of "cumulative" effects in technical chapters where appropriate.

- Information provided by third parties, including publicly available information and databases, is correct at the time of publication.
- Baseline conditions are assumed to be accurate at the time of the physical surveys but, due to the dynamic nature of the environment, conditions may change over time and could be different during site preparation, consultation, operational and decommissioning phases.

# 3. SITE SELECTION AND DESIGN

Following previous feasibility analysis of the Site, and further discussions with interested landowners, an initial turbine layout was developed within the Site. Through ongoing assessments and consultation, the design was updated through an iterative process, to determine the most viable layout capable of obtaining consent from the Scottish Ministers under section 36 of the Electricity Act 1989.

The Original Development design for the EIA Report was achieved through detailed assessments of the environmental effects and consideration of the identified spatial constraints combined with consideration of the appearance of the Original Development from selected viewpoints.

Since the submission of the EIA report, the design process has evolved further through post-submission consultation with a range of stakeholders, including statutory consultees and members of the public. Following consultation with Dumfries and Galloway Council a recommendation was made to remove Turbine 8 (T8) and relocate Turbine 1 (T1). T8 was identified as an outlier when viewed from close range viewpoints in the Nith Valley, and its removal reduced the horizontal extents as experienced from these viewpoints. The relocation of T1 responded to concerns regarding its prominence which resulted from its slightly higher base elevation compared to the other turbines. The location of the Substation Compound and BESS was reviewed following engagement with ScottishPower Energy Networks (SPEN) regarding the grid connection for the Revised Development.

In addition, the revised location increases the separation of the substation from Sanquhar. The revised location is adjacent to existing track, near Whing Head. Therefore, the Revised Development comprises:

- the removal of T8;
- relocation of T1 (from E:272661, N:604825 to E:272702, N:605026);
- relocation of the substation (from E: 275349, N: 606469 to E:275062, N:605308);
- relocation of the BESS compound (from E:275297, N:606320 to E:275156, N:605316); and
- realignment of associated infrastructure (e.g. crane hardstanding and access tracks).

The Revised Development consists of 10 turbines with a maximum tip height of up to 180 m. This represents an amendment to the Original Development layout of 12 turbines. Comments from Dumfries and Galloway Council led to the removal of T8, the relocation of another turbine (T1) and relocation of the substation / BESS.

# 4. REVISED DEVELOPMENT DESCRIPTION

The layout of the Revised Development is shown in **AEI Figure 1.2, Revised Development Site Layout**.

## 4.1 DEVELOPMENT COMPONENTS

The Revised Development comprises a wind powered electricity generating station with a generating capacity exceeding 50 MW. It will involve the construction and operation of a wind farm, of up to 10 turbines, substation, BESS and associated infrastructure.

## 4.2 DEVELOPMENT PARAMETERS

Detail regarding the Revised Development components is set out in **Table 4.1** below. All figures referred to below can be seen within **Volume 2, Figures** of the AEI Report.

TABLE 4.1 KEY PARAMETERS OF THE REVISED DEVELOPMENT

| Component | Revised Development Description |
|---|---|
| Wind Turbines | 10 turbines, removal of T8 and relocation of T1 from the Original Development.<br><br>Each turbine has a hub height of approximately 105 m, rotor diameter of approximately 150 m and tip height of up to 180 m.<br><br>Each turbine may require a small external transformer located at its base. Each turbine will have a foundation with an approximate diameter of 25 m. |
| Access Tracks | Amended track as shown on **AEI Figure 1.2, Revised Development Site Layout**.<br><br>Access track to serve the construction and operation of the wind farm with width approximately 5.0 m, this will consist of a combination of existing track (3.05 km), upgraded track (1.6 km) and newly constructed track (7.75km). The length of newly constructed track is reduced from the Original Development due to the removal of T8 and access track, and alterations to T1 access track. New tracks will be constructed of a graded stone or floated design, as appropriate for the ground conditions. |
| Electrical Infrastructure | The revised substation location for the Revised Development is approximately 800 m southeast of T11 and 1.25 km southeast of T9. It is west of the existing access track and 142 m away from the Southern Uplands Way. The substation and control building will be located within a compound measuring approximately 3036 $m^2$, which will also include any external electrical infrastructure and vehicle parking.<br><br>The revised BESS location for the Revised Development is adjacent to the substation compound and is approximately 850 m southeast of T11 and 1.30 km southeast of T9. It is east of the existing access track and >200 m away from the Southern Uplands Way. The BESS covers an area of approximately 10,868 $m^2$. Underground cabling, laid where possible alongside the access tracks, will link the turbine transformers to the onsite substation. |
| Crane Hardstanding | Relocation of the crane hardstanding associated with the relocation of T1. The new hardstanding for relcated T1 is approximately 205 m northeast of the Original Development T1 location. Crane hardstandings |

| Component | Revised Development Description |
|---|---|
| | will be required adjacent to each turbine, this will cover an area approximately 3,782.5 $m^2$ at each turbine. Each turbine will be located within their crane hardstanding area. |
| Temporary Construction Compound | A temporary construction compound will be required during the construction of the Revised Development, forming an area of hardstanding providing space for temporary welfare, parking, lay down areas and potentially concrete batching; this will measure approximately 5,000 m2. |
| Borrow Pits | Up to three onsite borrow pits are proposed, as follows: Borrow Pit 1 is approximately 2228 $m^2$ and centred at OS Grid Reference 276630, 607787, Borrow Pit 2 is approximately 5760 $m^2$ and centred at OS Grid Reference 275339 606060, Borrow Pit 3 is approximately 10961 $m^2$ centred at OS Grid Reference 275042, 605749. Further detail is provided in **Technical Appendix 10.3: Borrow Pit Assessment (BPA) to the EIA Report**. |
| Watercourse Crossings | There is only one change to watercourses for the AEI report. The area of hard standing surrounding T1 in the Revised Development encroaches within 50m of an unnamed watercourse which is a tributary of the Glenlarie Burn, along with the access track to T1 crossing over the watercourse at OS Grid Reference 272748 604961. |
| Met Mast | A permanent Met Mast, will be located at OS Grid Reference 273700, 605500. |

### 4.2.1 GRID CONNECTION

The Applicant has accepted an offer from SPEN to connect the Revised Development to the existing substation at Glenglass in 2028, located approximately 3.2 km west of the Site.

The grid connection does not form part of the Section 36 consent application for the Revised Development. The consent for the grid connection will be sought separately.

## 4.3 CONSTRUCTION PHASE

The construction period for the Revised Development would be approximately 18 months in duration. The starting date for construction activities will largely be dependent upon the date that consent may be granted and grid availability.

Construction activities will be limited to the working hours of 07:00 to 19:00 on weekdays and 07:00 to 13:00 on Saturdays, with the exception of any emergency working or turbine deliveries.

The construction phase will be controlled via a series of detailed construction method statements, which will be prepared by a Principal Contractor appointed by the Applicant, who will have overall responsibility for environmental management on the construction site. A Construction Environmental Management Plan (CEMP) will be prepared to the support the construction method statements post-consent. The CEMP will be the overarching document which combines the principles of all other management plans and environmental plans required to support the construction and will be prepared in consultation with the Council.

## 4.4 OPERATIONAL PHASE

During operation, general servicing is required. Each turbine manufacturer has specific maintenance requirements, but typically, routine maintenance or servicing of turbines is carried out at least once per year. In the first year, there is also an initial service shortly after commissioning.

## 4.5 DECOMMISSIONING PHASE

The Revised Development has been designed with an operational life of 35 years. At the end of the operational period, it would be decommissioned, and the turbines dismantled and removed. Any alternative to this action would be subject to further consenting process.

# 5. PLANNING AND ENERGY POLICY

**Chapter 5, Updated Planning Policy and Energy Policy** of the AEI Report summarises the planning legislative context for the Revised Development and identifies the key policy documents which have been considered throughout the AEI Report. The Revised Development is subject to a consenting procedure under Section 36 of the Electricity Act 1989, which is administered by the Energy Consents Unit (ECU).

Since the submission of the EIA Report in 2023, new renewable energy policies and guidance have been introduced in the Scottish Planning Policy context (including the Climate Change Adaptation Programme: Progress Report 2023 to 2024[1] which will inform the Scottish National Adaptation Plan 2024-2029 (SNAP[2])– see **Section 5.3** of **Chapter, 5, Updated Planning Policy and Energy Policy** of the AEI report. No other changes have been made to legislative context, national policy or local planning policy

[1] Scottish Government (2024) Scottish Climate Change Adaptation Programme: progress report 2023 to 2024. [Online] Available at: https://www.gov.scot/publications/scottish-climate-change-adaptation-programme-progress-report-2023-2024/ (Accessed 24/07/2024)
[2] Scottish Government (2018) Climate Change Plan: Third Report on Proposals and Policies 2018 – 2031 (RPP3) [Online] Available at: https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/

# 6. LANDSCAPE AND VISUAL IMPACT ASSESSMENT (LVIA)

**Chapter 6, Landscape and Visual Impact Assessment of the AEI Report** was produced by Optimised Environments Limited (OPEN), part of SLR Consulting Ltd. **Chapter 6, Landscape and Visual Impact Assessment of the AEI Report** identifies the landscape and visual effects of the Revised Development and acts as an update to **Chapter 6, Landscape and Visual Impact Assessment of the EIA Report**.

In the 2023 EIA report, the LVIA assessment concluded the Original Development would give rise to Significant effects on landscape character during the construction and operational phases of the Original Development, albeit contained within the localised extent of approximately 5 to 6 km. There would be a significant effect on the corresponding parts of the Thornhills RSA. The Original Development would give rise to Significant effects on visual amenity and principal visual receptors in some locations out to approximately 7.5 km during the construction and operation of the Original Development, noting there are a number of principal visual receptors within 7.5 km which would be Not Significant. While landscape and visual receptors beyond these ranges may be affected by visibility of the Original Development, these effects would also be Not Significant. Significant cumulative effects would arise in respect of similar extents and similar landscape and visual receptors.

Since the submission of the application and EIA Report in 2023, baseline cumulative conditions have changed. The key changes to the baseline cumulative conditions comprise the change in status of Sanquhar II Wind Farm from application stage to consented, the change in status of Lorg Wind Farm from consented to application stage, Lorg 2 Variation and the inclusion of two new application stage wind farms Rowancraig Wind Farm and Herd's Hill Wind Farm which extend onto Barr Moor and bring wind farm development closer to the Nith Valley. These changes have required a re-assessment at the preliminary stage in order to identify those landscape and visual receptors with potential to undergo Significant cumulative effects followed by a detailed re-assessment of those receptors. The outcomes of the revised cumulative assessment broadly align with the outcomes of the original assessment, albeit with different cumulative interactions arising as a result of the different cumulative influences. A change to assessment occurs in respect of Kirkconnel to Mynwhirr Hill Core Path 84 where under Scenario 2 the Significant effect associated with the Original Development is reduced to a Not Significant effect owing to the inclusion of closer range application stage Rowancraig and Herd's Hill wind farms to the fore of the Revised Development.

In summary, whilst the layout has been improved for the Revised Development, the number of aviation lights required has reduced, and the cumulative context has changed, the assessment of the Revised Development largely concurs with the findings of the Original Assessment in which Significant effects and Significant cumulative effects will be contained within the first 5km radius of the Revised Development.

# 7. ECOLOGY

**Chapter 7, Ecology of the AEI Report** was produced by MacArthur Green Ltd. **Chapter 7, Ecology of the AEI Report** identifies the ecology effects of the Revised Development and acts as an update to **Chapter 7, Ecology of the EIA Report**.

**Chapter 7, Ecology of the AEI Report** is supported by **Volume 3, Appendix 7.1, Updated Biodiversity Enhancement Management Plan of the AEI Report** which has been updated since the EIA report. No other appendices for ecology have changed for the submission of the AEI Report.

The 2023 EIA Report concluded that effects as a result of the Original Development would be Minor Adverse and Not Significant.

In terms of potential construction and operational effects on ecology, the Revised Development changes are most likely to manifest in the following ways:

- A reduction in total direct habitat loss associated with temporary and permanent infrastructure throughout the construction and operation phases (due to removal of turbine 8);
- A reduction in the extent of disturbance effects during the construction phase associated with a smaller wind farm footprint; and
- A reduction in the collision risk for high-risk bat species with operational turbines as a result of the removal of T8.

An evaluation of the Revised Development changes is presented in **Section 7.7** of **Chapter 7, Ecology of the AEI Report** for the Important Ecological Features (IEFs) previously scoped in to the assessment in **Chapter 7, Ecology of the EIA Report**. These include: blanket bog and wet modified bog, and high collision risk bat species. All other ecological features scoped out in **Chapter 7, Ecology of the EIA Report** continue to be scoped out.

The unmitigated construction effects on blanket bog and wet modified bog would continue to be Not Significant in the context of the EIA Regulations. Peatland restoration and enhancement measures to benefit blanket bog habitats are considered as part of the outline BEMP (**Appendix 7.1, Updated Outline Biodiversity Enhancement Management Plan of the AEI Report)**.

The collision risk assessment undertaken for bats and presented within **Chapter 7, Ecology, EIA Report** remains representative and the unmitigated effect on bats as a result of collisions is Not Significant in the context of the EIA regulations.

Embedded mitigation measures for ecology for the construction and operation and maintenance phases of the Revised Development include:

- Pre-construction surveys for protected species;
- Presence of an Ecological Clerk of Works during construction;
- Implementation of a Species Protection Plan and appropriate pollution prevention plan in relation to watercourses during construction; and
- Given the known presence of high collision risk bat species onsite, utilisation of the method of reduced rotation speed whilst idling by feathering, at all turbines during operation, to reduce collision risks to bats during the bat active period (April to October) in line with best practice guidance on bats.

In addition to the embedded mitigation, to ensure adequate measures are in place to provide restoration of key Annex I blanket bog and wet modified bog habitats and to achieve significant biodiversity enhancement at the Site, in line with objectives outlined in NPF4 Policy 3 the outline BEMP (**Appendix 7.1, Updated Outline Biodiversity Enhancement Management Plan of the AEI Report**) has included provisions for:

- Peatland restoration and enhancement;
- Enhancement of the ecological and hydrological value of watercourses;
- Increasing availability of broadleaved woodland and hedgerow; and
- **Appendix 7.1, Updated Outline BEMP of the AEI Report** also includes additional mitigation including additional planting around the revised substation / BESS and this is also further detailed in **Chapter 17, Schedule of Mitigation of the AEI Report**.

No new cumulative effects were identified for ecology for the Revised Development, and these have been classified as Not Significant in the context of the EIA Regulations.

# 8. ORNITHOLOGY

**Chapter 8, Ornithology of the AEI Report** was produced by MacArthur Green Ltd. **Chapter 8, Ornithology of the AEI Report** identifies the ornithology effects of the Revised Development and acts as an update to **Chapter 8, Ornithology of the EIA Report**.

For the 2023 EIA report, in relation to the Original Development, effects related to habitat loss, construction disturbance and displacement, operational displacement, collision risk, aviation lighting and cumulative effects were all considered. Unmitigated, potentially Significant effects were identified for black grouse due to construction disturbance, and for curlew due to operational displacement. Following mitigation, as detailed in the oBEMP, The residual effects for the Original Development were therefore considered to be Not Significant within the context of the EIA Regulations.

In terms of potential construction and operational effects on ornithology, the Revised Development changes are most likely to manifest in the following ways:

- A reduction in direct habitat loss associated with temporary and permanent infrastructure throughout the construction and operation phases;
- A reduction in the extent of disturbance effects during the construction phase associated with a smaller wind farm footprint;
- A reduction in the extent of displacement (indirect habitat loss) during the operational phase due to a decrease in the number of turbines; and
- A reduction in the collision risk with operational turbines as a result of the removal of T8.

The same receptors included in the EIA Report are considered in the AEI Report. These are: black grouse, curlew and lapwing.

Consultation responses relating to ornithology were received after submission of the EIA Report from NatureScot and Royal Society for the Protection of Birds (RSPB) Scotland, in November 2023 and January 2024 respectively. The key consultation responses from NatureScot and RSBP Scotland included detailed comments on mitigation for black grouse species, black grouse surveys and habitat enhancement for black grouse. The Applicant's responses to each of these concerns are detailed in **Table 8.2** of **Chapter 8, Ornithology of the AEI Report**.

The effects of construction on black grouse are unchanged from those concluded in **Chapter 8, Ornithology of the EIA Report**.

Additional black grouse surveys in the 2024 breeding season did not locate any evidence of lekking black grouse within the Site, nor did the RSPB hold any recent data for the area (see **Table 8.2 of Chapter 8, Ornithology of the AEI Report**).

The effects of construction on breeding curlew and breeding lapwing species are considered to be unchanged from those concluded in **Chapter 8, Ornithology of the EIA Report.**

The collision risks predicted for black grouse, curlew or lapwing and presented within **Chapter 8, Ornithology of the EIA Report** are considered to continue to remain representative and the unmitigated effect on the regional populations for the Revised Development as a result of collisions is considered to be negligible and therefore, Not Significant in the context of the EIA regulations.

Although, five of the 10 turbines will be lit for the Revised Development (a reduction from the Original Development), the reduction in the proposed turbine lighting between the Original Development and Revised Development is not considered to change the conclusions of the lighting assessment regarding turbine lighting sensitivity for ornithological features. The relocated BESS and substation are also greater than1 km from any ornithological features. Therefore, during operation, the magnitude of impact on key ornithology species associated with lighting is predicted to be Negligible and Not Significant in the context of the EIA Regulations.

Key mitigation for the Revised Development for ornithology as noted in **Section 8.8** of **Chapter 8, Ornithology of the AEI Report** includes pre-construction surveys, presence of an Ecological Clerk of Works (ECoW) and implementation of a Bird Disturbance Management Plan (BDMP) including specific mitigation measures for black grouse during construction. Further mitigation measures for all IOF's are included in **Appendix 7.1, oBEMP of the AEI Report**.

Considering the combined mitigation and enhancement proposed for curlew within the outline BEMP (**Appendix 7.1 of the AEI Report**) and the additional enhancement options suggested in **Section 8.8** of **Chapter 8, Ornithology of the AEI Report** to ensure positive effects for biodiversity enhancement for curlew (and other waders) is delivered, it is considered that the mitigation to be provided with the Revised Development would result in a Negligible contribution to the cumulative displacement of breeding curlew which would be further reduced by the additional enhancements proposed for breeding waders within Management Unit A. Hence, cumulative effects have been assessed as Not Significant for all IOF's.

For all key ornithology species, the predicted effects after mitigation, during the construction and operation phases of the Revised Development (alone or cumulatively) are considered to be no more than Minor Adverse and therefore, Not Significant in the context of the EIA regulations.

# 9. ARCHAEOLOGY AND CULTURAL HERITAGE

**Chapter 9, Archaeology and Cultural Heritage of the AEI Report** identifies the archaeology and cultural heritage effects of the Revised Development and acts as an update to **Chapter 9, Archaeology and Cultural Heritage of the EIA Report**.

The 2023 EIA report concluded the following for Archaeology and Cultural Heritage in relation to the Original Development:

- The potential setting effects upon nationally or locally designated assets were assessed as Not Significant, Adverse, including the reporting of a Minor Adverse setting effect to the SM687, Crichton Peel & Sanquhar Castle
- Up to 11 known assets may be subject to direct / indirect (physical) impacts during the construction of new access tracks, borrow pits and upgrades to existing access tracks. Mitigation measures such as demarcation and avoidance would ensure the effects on non-designated assets would be Not Significant, Adverse; and
- The effects of the interaction of consented wind farm developments and those in planning, with the Original Development on cultural heritage would not create an any additional cumulative effects and were assessed as Not Significant, Adverse.

The Cultural Heritage methodology has not changed since the submission of the EIA Report. The only consultation response received for Cultural Heritage since the submission of the EIA Report to the Energy Consents Unit (ECU) was received from Historic Environment Scotland (HES), as outlined in **Section 9.5** of **Chapter 9, Archaeology of the AEI Report**.

The Revised Development does not substantially reduce potential visibility compared to the Original Development, and the movement of T1 and removal of T8 are not anticipated to have an impact on the setting of any designated cultural heritage assets within the 5 km Study Area or to any locally designated heritage assets identified within 15 km. The effects remain as those identified within the EIA Report and remain as Not Significant. The removal of T8 and change of layout on site (i.e., the relocation of the substation and BESS and the movement of T1) is not anticipated to directly or indirectly impact any further cultural heritage assets within the Study Area. Therefore, the direct and indirect effects have not changed since the EIA Report and remain Not Significant.

Mitigation for the Revised Development remains as previously proposed; implementation of a watching brief and avoidance of assets via demarcation.

When assessing the Revised Development cumulatively with wind farm developments either operational, consented or submitted into planning prior to the Cloud Hill Wind Farm Section 36 application, it has been determined that the Revised Development has a Minor Adverse setting effect to the SM687, Crichton Peel & Sanquhar Castle which is Not Significant in terms of the EIA regulations.

The Revised Development cumulative assessment also considers the potential cumulative effects of Revised Development with the Rowancraig and Herds Hill Wind Farms that have been submitted into planning following the Revised Development. Each proposed wind farm may introduce a Minor Adverse effect to the setting but, in combination, the Revised Development combined with Rowancraig and Herds Hill Wind Farms likely crowds the mid- and long-range

backdrop of the southern viewscape. On the basis that  Cloud Hill Wind Farm, Rowancraig Wind Farm and Herds Hill Wind Farm are all consented together and become operational, this will result in a cumulative medium impact to setting, constituting in a Moderate Adverse effect to the asset. This effect is considered Significant.

In summary, the effects of the Revised Development on any further designated or non-designated cultural heritage assets have assessed as Not Significant. It has been determined that when assessing the effects of the Revised Development cumulatively with existing or consented wind farm developments, or applications submitted in advance of the Revised Development Section 36 application, effects have been determined to be Not Significant**.**

# 10. GEOLOGY AND PEAT

**Chapter 10, Geology and Peat of the AEI Report** identifies the geology and peat effects of the Revised Development and acts as an update to **Chapter 10, Geology and Peat of the EIA Report**.

**Chapter 10, Geology and Peat of the AEI Report** is supported by **Volume 3, Appendix 10.1, Peat Risk Slide Assessment of the AEI Report** and **Appendix 10.2 Outline Peat Management Plan** which has been updated since the EIA Report. No other appendices for geology and peat have changed for the AEI Report.

The 2023 EIA Report concluded the following for Geology and Peat in relation to the Original Development:

- The results of peat probing indicated that peat depths were generally shallow throughout the Site, with 73.5% of probes recording depths of between 0 and 0.5 m and 92.9% no greater than 1.0 m. However, a small concentration of probes along a section of proposed track in the central southern portion of the Site recorded peat depths of up to 5.0 m. The average peat depth across the Site was recorded as 0.48 m;
- The disturbance of peat as a receptor is Minor, although with the implementation of the specified mitigation including habitat management measures to restore peatland and make improvements to drainage would more than compensate for any peat losses, and therefore disturbance to peat is Not Significant in terms of the EIA Regulations; and
- Implementation of the proposed mitigation measures and undertaking the construction works in accordance with best practice should ensure there are no significant residual effects from the Original Development on Geology and Peat.

The methodology for Geology and Peat has not changed for the AEI Report however, following the submission of the EIA Report, consultation responses related to geology and peat were received from Energy Consents Unit (ECU) appointed consultant Ironside Farrar and SEPA. No objections were received, however Ironside Farrar advised that the Peat Landslide Hazard Risk Assessment (PLHRA) requires minor revisions which have been made in **Volume 3, Appendix 10.1, Peat Risk Slide Assessment of the AEI Report.**

There are no changes to the baseline conditions (i.e., core study area (CSA) and land-use) for geology and peat as presented in the EIA Report however, additional field surveys were undertaken to target the revised layout changes proposed (including areas proposed for temporary peat storage). In total (including the EIA Report probing) 3096 probes were sunk (1849 additional probes undertaken for the AEI Report along with 1247 for the EIA Report). The peat probe locations and peat depth interpolation are shown in **AEI Figure 10.2.2 and AEI Figure 10.2.3 in Volume 3, Appendix 10.2, Outline Peat Management Plan of the AEI Report** which includes further details on the peat probing. The average peat depth across the Site was recorded as 0.48 m. Further detail on the peat probing results is provided in **Volume 3, Appendix 10.2 Outline Peat Management Plan.**

Excavated peat will be utilised in a peatland restoration programme to enhance the currently deteriorating peat areas as presented in **Volume 3, Appendix 7.1, Updated Biodiversity Enhancement Management Plan of the AEI Report**.

Following the same mitigation measures as the EIA Report, and supplemented with the mitigation included in **Volume 3, Appendix 10.1, Peat Slide Risk Assessment of the AEI Report** and **Volume 3, Appendix 10.2, Outline Peat Management Plan of the AEI Report**, the residual effect remains Minor and Not Significant (as per the EIA Report). As a result, there is no significant effect on peat.

The relocation of turbine T1 and associated infrastructure has resulted in the addition of one new watercourse crossing and remains Not Significant.

The Revised Development presents no change to the effects assessed in the EIA Report in terms of geology. The effects on geology and peat resources associated with the Revised Development are considered to be Not Significant.

# 11. HYDROLOGY AND HYDROGEOLOGY

**Chapter 11, Hydrology and Hydrogeology of the AEI Report** identifies the hydrology and hydrogeology effects of the Revised Development and acts as an update to **Chapter 11, Hydrology and Hydrogeology of the EIA Report**.

The 2023 EIA Report concludes the following for hydrology and hydrogeology in relation to the Original Development:

- All turbine, BESS compound and substation infrastructure is located outwith areas identified as medium to high risk of flooding from all sources;
- The Original Development does not lie within a designated Drinking Water Protected Area (DWPA). Consultation with the Council confirmed that there are eight potential Private Water Supplies (PWS) within 2 km of the Original Development boundary, however, these are not hydrologically connected to the Original Development;
- The Original Development is not hydrologically connected to any designated hydrological receptors;
- Fifteen communities of Groundwater Dependant Terrestrial Ecosystems (GWDTEs) were found to be present near site infrastructure. There will be direct loss and indirect effects as a result of the Original Development, however this has been calculated to have a *"Minimal detectable effect on a GWDTE"*; and
- With the embedded good practice construction methods provided in **Volume 3, Technical Appendix 11.2, Outline Water Construction Environmental Management Plan (CEMP) of the EIA report**, and a 50 m buffer of surface watercourses, this will limit the potential for significant effects on the hydrological environment. This also includes mitigation measures to protect GWDTE communities outlined in **Volume 3, Technical Appendix 11.2, Outline Water CEMP of the EIA Report**, including identifying flush areas prior to track construction and maintaining hydraulic conductivity by spanning these sections with plastic pipes or drainage matting.

All effects were assessed as Not Significant based on the guidelines for hydrology and hydrogeology in the 2023 EIA Report.

In review of the baseline conditions for the Original Development in **Section 11.4** of **Chapter 11, Hydrology and Hydrogeology of the EIA Report**, no changes have been made to the current baseline for the Revised Development. The revised location of the substation and BESS are further away from key hydrological receptors and there are no watercourses within the vicinity of these components.

Following the new area of hardstanding due to relocation of T1, one additional watercourse has been included in the hydrology and hydrogeology assessment for the Revised Development. The area of hard standing surrounding T1 in the Revised Development encroaches within 50m of an unnamed watercourse which is a tributary of the Glenlarie Burn, along with the access track to T1 crossing over the additional watercourse crossing at NGR NS 72748 04961. This watercourse crossing is shown in **AEI Figure 11.1 in Chapter 11**.

The effects of the Revised Development on hydrology and hydrogeology considering the removal of T8 and relocation of the substation and BESS have been assessed as Not Significant.

Cumulative effects have also been assessed as Negligible and Not Significant in respect to hydrology and hydrogeology.

However, the relocation of T1 has been assessed as having the potential to result in effects to chemical pollution, erosion and sedimentation and impediments to flow. Although, all of these effects have been assessed as Not Significant accounting for the implementation of embedded mitigation measures detailed within Chapter 11, Hydrology and Hydrogeology of the AEI Report (i.e., 50 m watercourse buffers for construction works, drainage management measures and measures to protect GWDTE), the EIA Report and supporting appendices.

Therefore, all potential effects on hydrology and hydrogeology are considered to be Not Significant.

# 12. NOISE

**Chapter 12, Noise of the AEI Report** identifies the noise effects of the Revised Development and acts as an update to **Chapter 12, Noise of the EIA Report**.

The 2023 EIA Report concludes the following for noise in relation to the Original Development:

- Construction noise will be limited in duration and confined to working hours as specified and therefore can be adequately controlled through the application of good practice measures and secured by planning conditions. This will ensure that any noise from during construction will be adequately controlled and construction noise effects were reported as Not Significant in the EIA report;
- Operational noise has been assessed in accordance with the appropriate guidance (ETSU-R-97[3])and in line with current best practice (i.e., the IOA Good Practice Guide (GPG)[4]), as endorsed by the Scottish Government. **Chapter 12, Noise of the EIA Report** concluded that the predicted noise from the Original Development would comply with the requirements of ETSU-R-97 at all receptor locations. The effect of operational noise was therefore reported as Not Significant in the EIA report; and
- The cumulative effects of the Original Development in conjunction with nearby wind energy developments either operational, consented or the subject of a current planning application were taken into consideration in the above assessment, in accordance with ETSU-R-97 and the IOA GPG. The cumulative operational noise effects were deemed as Not Significant in terms of the EIA Regulations in the EIA report.

**Chapter 12, Noise of the EIA Report** concluded that predicted noise due to the Original Development, in conjunction with the surrounding cumulative developments, would comply with the noise requirements at all receptor locations shown on **Figure 12.2, EIA Cumulative Noise Contour Plot** from **Chapter 12, Noise of the EIA Report**:

- Predicted noise during decommissioning is expected to be of a similar nature to that of construction and will be managed through best practice or other guidance or legislation relevant at the time.

There have been no changes to the methodology for noise for the Revised Development. The relocation of T1 increases the distance between the closest turbine locations and Polgown. The removal of T8 will result in less site road infrastructure and avoid the need for noise from construction of this element of the Revised Development.

In terms of the baseline, there are no new NSRs as a result of the Revised Development.

The predicted effect of construction noise remain consistent with the EIA Report as Not Significant.

The predicted effect of operational noise has been assessed and found to be within the prescribed limits as set out in **Table 12.7 and Table 12.8 in Chapter 12, Noise of the AEI Report**. The effect of operational noise of the Revised Development is therefore predicted to be Not Significant.

[3] ETSU 1996 ETSU-R-97 The Assessment and Rating of Noise from Wind Turbines, ETSU for the DTI, 1996

[4] A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind turbine Noise, Institute of Acoustics, 2013

Following the submission of the EIA Report the following applications were submitted to the Energy Consents Unit:

- Herds Hill (planning ref. 23/2572/FUL) In Planning; and
- Rowancraig (planning ref. 24/0025/FUL (Validated 12th January 2024) In Planning.

Since the Herds Hill, and Rowancraig applications were submitted after the Original Development EIA Report and considered noise in their applications (on 30th November 2023 and 12th January 2024 respectively), no updates are considered necessary to the cumulative modelling to take account of these developments at this stage.

It is confirmed that the noise guidance limit will still be met with all wind farms operating together, therefore the significance of noise from the Revised Development will not change as a result of changes to other proposed developments that have entered planning since the application was submitted and it has not been necessary to update the cumulative assessment.

In summary, the effect of construction, operational and cumulative noise associated with the Revised Development is predicted to be **Not Significant**.

# 13. ACCESS, TRAFFIC AND TRANSPORTATION

**Chapter 13, Access, Traffic and Transportation of the AEI Report** identifies the traffic and transport effects of the Revised Development and acts as an update to **Chapter 13, Access, Traffic and Transportation of the EIA Report**.

The 2023 EIA Report concluded that a Moderate effect was identified for traffic generation, severance and pedestrian amenity at sensitive receptors on the C125N and Blackaddie Road. Mitigation measures (e.g., speed limits, approved HGV routes to Site and temporary construction phase signage etc) were identified in **Section 13.9** of **Chapter 13, Access, Traffic and Transportation of the EIA Report** and have not changed since the submission of the EIA Report. The residual effects following implementation of these mitigation measures were predicted to be Minor and thus Not Significant in terms of the EIA Regulations.

The revised layout has been amended to include the removal of Turbine 8 (T8), the relocation of Turbine 1 (T1), the relocation of the substation and BESS and the realignment of associated infrastructure.

Given that the greatest impact on the local road network including the trunk road network will be during the period of construction where concrete deliveries occur, on non-consecutive days, the removal of T8 and associated infrastructure changes mean that the **Chapter 13, Access, Traffic and Transportation of the EIA Report** has already assessed a worst-case with regards to the average daily number of movements during the peak months of construction, and no further update is required.

Therefore, the assessed effect on routes is unchanged for the Revised Development as the worst-case has already been assessed from the original EIA Report including in relation to severance, pedestrian amenity and traffic generation. Additionally, it should be noted that the proposed mitigation measures remain extant (e.g., speed limits, approved HGV routes to Site etc.) which are outlined in **Section 13.9** of **Chapter 13, Access, Traffic and Transportation of the EIA Report** therefore; all residual effects are anticipated to be Low / Negligible and Not Significant, and no further assessment is warranted.

# 14. SOCIO-ECONOMICS, TOURISM, RECREATION AND LAND USE

**Chapter 14, Socio-Economics, Tourism, Recreation and Land-Use of the AEI Report** identifies the socio-economics, tourism, recreation and land-use effects of the Revised Development and acts as an update to **Chapter 14, Socio-Economics, Tourism, Recreation and Land-Use of the AEI Report of the EIA Report**.

The assessment considered the potential effects arising from the construction and operational phases of the Revised Development on the socio-economic, land use, recreation and tourism resources. Baseline conditions have been reconsidered for the AEI Report and identified through a desk-based assessment (including updated baseline data from 2022 from the Office of National Statistics (ONS) for Population, ONS Employment Data in 2023 and new recreational route information provided by ScotWays).

Consultation was undertaken with ScotWays who provided comments to consider the detailed impacts on the users of the Southern Upland (SUW) Public Right of Way (PRoW) and ensure the baseline considered all recreational routes in the Study Area. These comments have been addressed in **Chapter 14, Socio-Economics, Tourism, Recreation and Land-Use of the AEI Report.** Other consultation responses to the EIA application were provided by Kirkconnel and Kelloholm Community Council and Royal Burgh of Sanquhar and District Community Council.

## 14.1 SOCIO-ECONOMICS

The socio-economic assessment involved an assessment to determine the economic and employment effects that the Revised Development is likely to create within the socio-economic study area. These effects are defined in terms of Full-Time Equivalent (FTE) jobs, Full-Time Equivalent (FTE) job years and the Gross Value Added (GVA) generated by the Revised Development. The assessment aims to predict the likely effects arising from the Revised Development.

Assuming all 10 turbines (based on 5.6 MW per turbine) have a total generation capacity of approximately 56 MW, the total capital expenditure (CAPEX) for the Revised Development is estimated to be £12 million to be spent within Dumfries and Galloway and East Ayrshire areas and the total spend in Scotland will be an estimated £36.4 million.

**Table 14-5** in **Chapter 14, Socio-Economics, Tourism, Recreation and Land-Use of the AEI Report** shows that within Dumfries and Galloway and East Ayrshire, 58 direct jobs are estimated to be created during the construction phase of the Revised Development. Within the local authority areas, there would be an anticipated GVA contribution of just over £2.7 million. There would be 175 direct jobs created within Scotland, inclusive of the 58 direct jobs in Dumfries and Galloway and East Ayrshire, and a GVA contribution of just over £8.1 million to the national economy.

The Revised Development will create a Moderate (Beneficial) magnitude of impact on socio-economics, as there is a moderate alteration to the socio-economic baseline through direct, indirect and induced GVA and employment opportunities. Combined with the Low sensitivity of socio-economics at the local, national and UK level, a Moderate (Significant), Beneficial magnitude of effect is predicted for socio-economics during the construction phase, which is

Significant in the context of the EIA Regulations. This represents no change from the original EIA Report findings.

Should the Revised Development gain consent, the Applicant is also committed to offering community benefits for local communities such as:

- 'Meet the buyer days' to encourage local-based companies to tender for employment opportunities;
- Creating a community benefit fund (CBF) equivalent to £5,000 per installed MW per annum, index linked for the operational lifetime of the project, in line with Scottish Government recommendations[5]. Based on a 5.6 MW machine, the Revised Development would generate £280,000 towards a CBF each year. The Applicant is in discussion with local community councils to discuss how best this fund be utilised; and
- Utilising local accommodation providers, shops, restaurants and bars during the construction and operation phases where necessary, to ensure that the local community benefits from the increased demand from on-site workers.

## 14.2 TOURISM AND RECREATION

Section 14.8 in Chapter 14, **Chapter 14, Socio-Economics Tourism Recreation and Land-Use of the AEI Report** assesses all of the tourism and recreational receptors associated with the Revised Development.

The Southern Upland Way (SUW), is a long distance walking trail, which runs for 214 miles between Portpatrick on the south west coast of Scotland and Cockburnspath on the east coast, crosses through the Site boundary. As noted in **Section 14.6.3** of **Chapter 14, Socio-Economics Tourism Recreation and Land-Use of the AEI Report**, the Heritage Path 368 (Sanquhar to Stroanpatrick), Hill Track 83, and DN23 PROW also all broadly follow the route of the SUW through the Study Area[6].

**Chapter 14, Socio-Economics Tourism Recreation and Land-Use of the AEI Report** concluded that there would be a Moderate Adverse, Significant effect on the SUW, Heritage Path 368 (Sanquhar to Stroanpatrick), Hill Track 83, and DN23 rights of way during construction, and a Minor Adverse, Not Significant effect during operation. During construction there would be direct impacts on users of the path within the Site boundary arising from the presence of signage and fencing, and indirect impacts arising from changes in the visual environment.

The assessment of the SUW as a recreational feature considers the entire SUW, and the experience had by users as they move along the route, rather than from one specific viewpoint. Given that users will be moving along the path, and views will be experienced from all directions (360 degrees), the overall impact on users of the SUW from a recreational perspective will be localised to within the Site. This will result in a Minor Adverse effect on the amenity of users of the SUW and other paths following its route, which is Not Significant in terms of the EIA Regulations.

[5] Scottish Government (2022) Onshore Wind: Policy Statement 2022 [Online] Available at: Chapter 4: Benefits to Local Communities and Financial Mechanisms - Onshore wind: policy statement 2022 - gov.scot (www.gov.scot)
[6] Maps of rights of way, Scottish Hill Tracks and Heritage Tracks supplied by ScotWays.

The effects on the amenity of users of the Sanquhar to Stroanpatrick Path Heritage Path, DN23 rights of way path and Scottish Hill Track 83 during operation will also be Minor Adverse and Not Significant in terms of the EIA regulations considering the conclusions above for the SUW as the impacts on users from a recreational perspective will be localised to within the Site.

The effects on the amenity of users for all other recreational routes, rights of way and paths during operation will be Negligible and Not Significant considering none of these routes interact with the Revised Development Site or are in close enough proximity for users to experience a change in visual amenity.

By carefully managing the route with the use of an Access Management Plan, which will be agreed with the Council, Access Officer and Southern Upland Way Rangers, and the Southern Upland Way will safely remain open to the public throughout all phases of the Revised Development, and no significant effects will arise. Further, the Applicant is intending to offset landscape and visual impacts during the construction phase with improvements to the SUW during the operational phase. Offsetting measures will include footpath upgrades, benches and new/improved signage.

No other significant effects are anticipated to impact the other tourist and recreational receptors within 10km of the Revised Development.

## 14.3 LAND USE

There would be a slight reduction in the footprint of the Revised Development due to the removal of T8, however this does not change the overall assessment of effects on land use during construction for the Revised Development which is Not Significant.

There are no major changes to the assessment of effects on land use during operation for the Revised Development, except the slight reduction in land use due to the removal of T8 which is Not Significant.

Disruption to land-use during decommissioning will be similar to that during construction, with a temporary cessation of agricultural activities in the vicinity of the Site while activities to remove the turbines are undertaken. There are no major changes to the assessment of effects on land use during operation for the Revised Development, except the slight reduction in land use due to the removal of T8 which is Not Significant.

# 15. CLIMATE CHANGE AND CARBON BALANCE

**Chapter 15, Climate Change and Carbon Balance of the AEI Report** identifies the climate change and carbon effects of the Revised Development and acts as an update to **Chapter 15, Climate Change and Carbon Balance of the AEI Report of the EIA Report**. **Chapter 15, Climate Change and Carbon Balance of the AEI Report** will be supported by **Volume 3, Appendix 15.1, Carbon Calculations** however, at the time of writing, the SEPA Carbon Calculator website is undergoing maintenance. Therefore, this will be submitted as a clarification.

The 2023 EIA Report concluded that there were no projected climatic changes that would have a major impact on the infrastructure of the Original Development, and no changes that would affect the environmental receptors assessed in individual chapters of the EIA Report to meaningfully impact the conclusions reached in other chapters of the EIA Report. The Original Development was determined to have a Significant, Beneficial effect on carbon savings individually, and when considered cumulatively with other Scottish renewable energy schemes. It therefore had a Significant, Beneficial effect on climate change in terms of the EIA Regulations.

The construction and decommissioning stages of the Revised Development are not considered vulnerable to climate change and have been scoped out of further assessment within the Scope of the Assessment of **Chapter 15, Climate Change and Carbon Balance of the AEI Report.**

The Revised Development is predicted to result in a Significant Beneficial impact on climate change, both in isolation and cumulatively with other renewable energy developments, due to the greenhouse gas emissions savings associated with the generation of renewable energy from wind. No Significant effects are predicted from the effect of climate change on the Revised Development and on environmental receptors assessed elsewhere in the AEI Report.

The Revised Development will have a Significant, Beneficial effect on carbon savings when considered in isolation and when considered cumulatively with Scottish renewable energy deployment. The Revised Development therefore has a Significant, Beneficial effect on climate change in terms of the EIA Regulations.

No additional Significant effects to those already identified within the 2023 EIA Report will occur as a result of climate change during the operational phase of the Revised Development, and the effect of climate change on the Revised Development is also determined to be Not Significant. These conclusions reflect those reached within **Chapter 15 Climate Change of the EIA Report**.

# 16. OTHER ISSUES

Chapter 16 of the AEI Report evaluates the effects of the Revised Development on Other Issues, including:

- Shadow Flicker;
- Aviation; and
- Telecommunications, Television Reception and Utilities.

Consultation with the Defence Infrastructure Operation, Glasgow Airport, Glasgow Prestwick Airport, National Air Traffic Services (NATS), British Telecommunications (BT), Joint Radio Company (JRC) and Ofcom has been undertaken. **Chapter 16, Other Issues of the AEI Report** is supported by the following appendices:

- **Volume 3, Appendix 16.1, Revised Aviation Lighting Design and Consultation Report**.

## 16.1 SHADOW FLICKER

Shadow flicker is an effect that can occur when the shadow of a turbine blade passes over a small opening (such as window), briefly reducing the intensity of light within the room, and causing flickering to be perceived. Shadow flicker effects only occur inside buildings where the blade casts a shadow across an entire window opening. The assessment of shadow used a recognised computer software package and a cut-off distance of 1.5 km in line with Dumfries and Galloway local guidance[7]. This local guidance recommends a shadow flicker assessment must be undertaken on properties within 10 rotor diameters of the Revised Development. The Revised Development incorporates a rotor diameter of approximately 150 m, therefore this shadow flicker assessment is based on a 1.5 km study area (the Study Area). The Study Area has not changed since the EIA Report and is shown in **Figure 16.1, Shadow Flicker Casting Area of the EIA Report**.

For the 2023 EIA Report, during the operational phase, it was found that two properties were expected to potentially experience shadow flicker effects. Glenglass Cottage and Glenmaddie (financially involved) were calculated to exceed the threshold of 30 minutes per day; however, as the modelling is conservative and does not take into account other factors such as wind direction, screening and daily varied cloud cover, the maximum minutes per day figures for these residential properties are likely to be an overestimation. Should complaints be received, mitigation measures can be implemented to address shadow flicker. Thus, shadow flicker, due to the Original Development was assessed in the EIA Report as Not Significant in terms of the EIA Regulations.

The methodology for the Shadow Flicker Assessment has not changed since the 2023 EIA Report and there is only one minor update to the baseline which now includes Euchan Filter Station House for completeness, and to be consistent with all the final receptors in **Chapter 12, Noise of the AEI Report.**

As with the Original Development, the Revised Development has been calculated that theoretical shadow flicker could potentially occur at two of the four assessed receptors. Glenmaddie has been calculated to have shadow flicker effects being possible for up to a theoretical maximum of 52.9 hours per annum and 64.8 minutes per day from any windows

[7] Resoft WindFarm 4.2.1.7

facing south. Similarly, Glenglass Cottage has been calculated to experience effects above the guidance thresholds from any windows facing east or south. Euchan Filter House has also been calculated to experience shadow flicker effects above the guidance thresholds from any windows facing east or south.

Given these findings, the other considerations discussed in**Chapter 16, Other Issues of the AEI Report including** assumptions on the worst-case, financial involvement and mitigation measures, shadow flicker impacts due to the Revised Development are Not Significant in terms of the EIA Regulations.

## 16.2 AVIATION

For the 2023 EIA Report, an assessment of potential impacts on aviation associated with the Original Development was carried out, specifically investigating the potential effects on licenced aerodromes, National Air Traffic Services (NATS) and the Ministry of Defence (MOD).

Following the installation of aviation lighting, No Significant effects were anticipated as a result of the Original Development on aviation receptors.

An assessment of potential impacts on aviation associated with the Revised Development has been carried out, specifically investigating the potential effects on licenced aerodromes, NATS and the MOD.

Following the installation of aviation lighting and mitigation regarding the Lowther Hill radar, no effects are anticipated as a result of the Revised Development on aviation receptors.

**Chapter 16, Other Issues of the AEI Report** concluded all effects on aviation receptors during the construction, operation and decommissioning phases of the Revised Development were Not Significant.

## 16.3 TELECOMMUNCATIONS, TELEVISION AND UTILITIES

For the 2023 EIA Report, the Ofcom search for fixed links confirmed there were no live fixed links operating across the proposed turbines for the Original Development. Consultation undertaken with the telecommunications consultees has confirmed there would be no adverse effects on operations within the surrounding area that would interfere with telecommunications and electromagnetic signals. Effects on television reception are unlikely, and technical solutions are readily available as suitable mitigation measures should adverse effects be present. Adverse effects on infrastructure such as utilities would be avoided through safe systems of work and best practice measures.

**Chapter 16, Other Issues of the AEI Report** concludes there are no potential effects or changes to any telecommunications, television reception and utilities receptors during the construction, operation and decommissioning phases of the Revised Development therefore, the effects are Not Significant.

# 17. SUMMARY OF MITIGATION

**Chapter 17, Summary of Mitigation of AEI Report** provides a summary of mitigation and management measures for the AEI Report. This chapter only covers mitigation for the Revised Development, and the mitigations proposed in the EIA Report still stand unless stated otherwise.

The most significant updates to mitigation and other management measures for the AEI Report are related to **Chapter 6, Landscape and Visual Impact Assessment of the AEI Report**, **Chapter 8, Ornithology of the AEI Report** and **Appendix 7.1, Updated Outline Biodiversity Enhancement Management Plan of the AEI Report**.

For **Chapter 6, Landscape and Visual Impact Assessment of the AEI Report**, in direct response to comments made by Dumfries and Galloway Council regarding the prominence of T8, associated effects have been mitigated by removing this wind turbine from the Revised Development.

Also, in direct response to comments made by Dumfries and Galloway Council, T1 has been relocated to help mitigate the effects on the SUW by increasing the separation of this wind turbine from the route. As requested specifically by Dumfries and Galloway Council, the reduced lighting scheme helps to mitigate against the effects of night-time lighting by reducing the number of wind turbines requiring aviation lighting from eleven to five. This substantial reduction to less than half the original number of aviation lights will notably reduce the effects of night-time lighting and without T1, the lights will also appear much better contained along the ridgeline.

**For Chapter 8, Ornithology of the AEI Report**, following consultation responses from NatureScot and RSPB, it has been confirmed that the Bird Disturbance Management Plan (BDMP) will incorporate amended construction mitigation timings (no construction activity within 750m before 9am in April and May of any leks identified during the pre-construction surveys) and pre-construction surveys to include surveys for lekking black grouse between March and May. The outline Biodiversity Enhancement Management Plan (BEMP) will include Curlew as a key feature with enhancement of habitats for waders, specifically determined to deliver focussed habitat enhancement to maintain and increase the productivity of the breeding curlew population.

**Appendix 7.6, Outline Biodiversity Enhancement Plan of the AEI Report** proposes one further mitigation measure to establish new sporadic broadleaf woodland adjacent to the revised substation and BESS infrastructure to create partial screening. Adjacent to the revised substation and BESS, there will be planting of small areas of low-density native broadleaf species which will comprise of small areas of birch (on appropriate habitat types) to create a partial visual screening effect and minimise visual impact through the operational period.

These mitigation measures are described in more detail in **Chapter 17, Summary of Mitigation of AEI Report.**

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