Dunside Wind Farm

Supplementary Information (SI)

Volume 1: SI Report

July 2024

Dunside Wind Farm

Supplementary Information (SI) Report

Volume 1: Main Report

Prepared by

LUC

on behalf of

EDF Energy Renewables Ltd

July 2024

Preface

This document is a Supplementary Information (SI) report by EDF Energy Renewables Ltd ('the Applicant'), which supports an application to the Scottish Energy Consents Unit (ECU) for Section 36 consent to construct and operate Dunside Wind Farm ('the Revised Proposed Development'). The SI Report supplements the original Proposed Development application submitted to the ECU in June 2023.

Following comments from statutory consultees in relation to cultural heritage, landscape and visual impacts, ecology, ornithology and geology, hydrology, hydrogeology and peat, the Proposed Development has been modified. Therefore, this SI Report supplements the 2023 Environmental Impact Assessment Report.

The proposed site (the Site) is located approximately 6km north of Westruther and 7km west of Longformacus in the Scottish Borders Council (SBC) administrative area. The Revised Proposed Development will comprise up to 14 turbines with a maximum ground to blade tip height of 150 metres (two turbines), 180 metres (three turbines), 220 metres (nine turbines) and associated infrastructure.

The documents submitted as part of this SI submission supplement or replace the documents submitted as part of the June 2023 application, submitted to the ECU.

A hard copy of the 2023 EIA Report, SI Report and supporting documents ('the information') will be available for public viewing during the application consultation period at the following address:

Scottish Borders Council Office	Westruther Village Hall
Council Headquarters,	6 Edgar Road,
Newtown St. Boswells, Melrose,	Westruther, Gordon,
TD6 0SA	TD3 6ND

A copy of the SI NTS can be requested free of charge. Hard copies of the information are available on request; the 2023 EIA Report at a cost of £500 and the SI Report at a cost of £200. All documents are available to download from the project website (dunsidewindfarm.co.uk) or can be posted upon request in electronic format on USB free of charge.

The information will also be available for public viewing online via the Scottish Government ECU planning portal (https://www.energyconsents.scot/ApplicationSearch.aspx) under application reference ECU00003436.

All previous representations received by Scottish Ministers in relation to the application remain valid.

Any new representations on the application may be submitted by email to the Scottish Government via representations@gov.scot; or by post to the Scottish Government, Energy Consents Unit, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation.

Written or emailed representations should be dated, clearly stating the name (in block capitals), full postal address or full return e-mail address of those making representations. Only representations sent by email to representations@gov.scot will receive acknowledgement.

The Applicant will advertise the submission of the Section 36 application in the local press, Edinburgh Gazette and on the dedicated project website. The advert will state the deadline for submitting representations to Scottish Ministers.

Contents

1. Chapter 1

1.1 Introduction

1.1.1 On the 16th of June 2023, EDF Energy Renewables Ltd (the Applicant) ("EDF Renewables") submitted an application to construct and operate Dunside Wind Farm (the 'Proposed Development') to the Scottish Ministers through the Energy Consents Unit (ECU) (reference: **ECU00003436**) under Section 36 of the Electricity Act 1989. This included a request for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended. The Proposed Development's Site is located within the Scottish Borders Council area, approximately 6 km north of Westruther and 7km west of Longformacus. The Site is within the Lammermuir Hills and covers an area of approximately 2006 hectares (ha).

1.1.2 The application was accompanied by an Environmental Impact Assessment Report (EIA Report) (hereafter referred to as 'the 2023 EIA Report') and was prepared in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations'). The purpose of the EIA was to identify and assess the likely significant environmental effects of the Proposed Development and to identify mitigation measures to avoid or reduce significant effects where required.

1.1.3 Further details about the planning history of the Site and the Proposed Development can be found in **Chapter 1: Introduction** and **Chapter 3: Development Description** of the 2023 EIA Report.

1.2 Purpose of the Supplementary Information

1.2.1 Part 6 of the EIA Regulations makes provision for the preparation of Supplementary Information (SI) where further work in relation to the environmental effects has been undertaken i.e. where amendments to the design has been made and require assessments within the EIA to be updated, or where 'additional information' has been requested from the determining authority (which may be on behalf of the statutory consultees).

1.2.2 There has been no formal request made by the determining authority (Scottish Ministers) for the Applicant to provide SI. However, there have been a number of issues raised and 'additional information' requested by consultees during the statutory consultation period of the application and the Applicant is proposing modifications to the scheme design (the 'Revised Proposed Development') to address the concerns raised. This SI Report has therefore been prepared to reflect these modifications and provide supporting information to enable the determination of the application to proceed.

1.2.3 This SI Report is to be read together with the 2023 EIA Report. Unless otherwise stated in this SI Report, the content of the 2023 EIA Report remains valid.

1.2.4 The purpose of this SI Report is summarised below, reflecting i) modifications to the scheme design and ii) clarifications requested by consultees.

Modifications to Scheme Design

- Provide detail of changes to borrow pit locations in response to SEPA comments, and consideration of any changes to the significance of effects of these proposals on a topic basis.
- Provide details of changes to the location of Turbine 4 in response to SEPA comments, and consideration of any changes to the significance of effects on GWDTE (Groundwater Dependent Terrestrial Ecosystems) of these proposals on a topic basis.
- Provide details of proposed changes to heights of Turbines 1, 2, 4 and 5, the change of height and relocation of Turbine 6, and the removal of Turbine 3 due to impacts on the Mutiny Stones as suggested by Historic Environment Scotland (HES). Consideration of any changes to the significance of effects of these proposals on a topic basis.
- Provide details of proposed changes to the location of Turbine 9, and consideration of any changes to the significance of effects of the proposal on a topic-by-topic basis.
- Provide details of changes to construction compound 3, and consideration of any changes to the significance of effects of the proposal on a topic-by-topic basis

1.2.5 Full details of the Revised Proposed Development are provided in **Chapter 3** of this SI Report, however for ease of reference, these are summarised below:

- Original Borrow Pits 2 and 3 removed and replaced with three new borrow pits with associated access tracks (four borrow pits now proposed in total);
- Turbine 1 reduced in height from 220m to 180m;
- Turbine 2 reduced in height from 220m to 180m;
- Turbine 3 and associated track removed (14 turbines in total now proposed; reduction from 15 turbines);
- Turbine 4 reduced in height from 220m to 180m and moved circa 40m south east;
- Turbine 5 reduced in height from 220m to 150m;
- Turbine 6 reduced in height from 220m to 150m and moved to circa 200m south;
- Turbine 9 moved circa 50m north;
- Construction compound 3 reduced to increase set back from estate boundaries; and
- Application boundary amended to align with design changes.

1.2.6 The application boundary as previously represented through the 2023 EIA Report figures (including EIA Report **Figure 1.1: Site Location**) has been updated to accommodate the design modifications now represented through the Revised Proposed Development. The Revised Proposed Development application boundary is shown on **SI Figure 1.1: Site Location** and should be read alongside any 2023 EIA Report figures which have not been updated through this SI Report. Figures which have been updated/superseded through this SI Report are noted below and in each technical chapter of this SI Report.

Clarifications

- Provide an update on the consultation responses received on the application and copies of responses issued by the Applicant to date to address any concerns raised or to supplement the original assessment (see **Table 1.1** below).

1.2.7 The information contained in this SI Report is considered to be substantive information for the purposes of the EIA Regulations. It will therefore be published as 'additional information'[1] in accordance with Part 6 (Paragraph 2 and 3) of the EIA Regulations, and publicly advertised as the same. This will engage a further round of consultation on the application whereby comments will be sought from consultees and members of the public.

1.3 Responsibilities for the Supplementary information

1.3.1 This SI has been prepared by LUC and associated specialists as presented in SI Report **Appendix 1.1.**

1.4 Structure and Presentation of the Supplementary Information

1.4.1 The 2023 EIA Report chapters have been reviewed to identify the need to update or replace content considering the proposed modifications to turbine locations, heights, new borrow pit locations, access tracks and modifications to construction compound 3. Where a chapter or assessment does not need to be updated, supplemented or replaced and no changes have been made to it as a result of the Revised Proposed Development, it is not the intention of this SI to repeat information contained within the 2023 EIA Report that remains valid. Clarification of this will be provided in the relevant chapter as appropriate.

1.4.2 This SI Report includes the following chapters, figures (including visualisations) and appendices.

SI Chapters

- **SI Chapter 1: Introduction** (this chapter) provides a brief introduction to the purpose of the SI and reasons for submitting the SI in relation to the Revised Proposed Development. It also provides information on the approach

[1] EIA Regulations 2017 use the terms 'supplementary information' and 'additional information' interchangeably. Where specific reference is drawn to Part 6 of the EIA Regs, the term 'additional information' is used in this report. 'Supplementary information (SI)' is used in all other instances through this report.

to preparing the SI, provides details of the consultation responses received to date and how these have been addressed.

- **SI Chapter 2: Site Selection and Design Strategy** considers any implications of the proposed modifications to the application for the Proposed Development's design strategy.
- **SI Chapter 3: Development Description** includes further details of the proposed modifications to the Proposed Development (the Revised Proposed Development).
- **SI Chapters 4 – 12:** present the findings of the assessment of the likely significant effects of the Revised Proposed Development in relation to the following topic areas.
  - SI Chapter 4: Landscape and Visual Impact Assessment
  - SI Chapter 5: Cultural Heritage
  - SI Chapter 6: Ecology
  - SI Chapter 7: Ornithology
  - SI Chapter 8: Hydrology, Hydrogeology, Geology and Peat
  - SI Chapter 9: Noise and Vibration
  - SI Chapter 10: Access, Traffic and Transport
  - SI Chapter 11: Aviation
  - SI Chapter 12: Other Issues
- **SI Chapter 13: Summary of Significant Effects:** Presents an updated and consolidated list of all significant effects identified this SI Report**.**

SI Figures

1.4.3 The following figures are provided in this SI Report, with details included of whether these are new (in addition to those in the 2023 EIA Report) or whether they replace 2023 EIA Report figures.

SI Chapter 1: Introduction

- **SI Figure 1.1: Site Location** (replaces **Figure 1.1** of the 2023 EIA Report)

SI Chapter 3: Development Description

- **SI Figure 3.1: Site Layout** (replaces **Figure 3.1** of the 2023 EIA Report)
- **SI Figure 3.2: Indicative Turbine Elevation** (supplements **Figure 3.2** of the 2023 EIA Report)
- **SI Figure 3.3: Proposed Construction Compound 3** (replaces **Figure 3.11c** of the 2023 EIA Report)

SI Chapter 4: Landscape and Visual Impact Assessment

- **SI Figure 4.1: Blade Tip Height (150 – 220 m) Zone of Theoretical Visibility (ZTV) and Viewpoint Locations** (A3) (replaces **Figure 4.1.2a** of the 2023 EIA Report)
- **SI Figure 4.2: Blade Tip Height (150 – 220 m) ZTV and Viewpoint Locations** (A1) (replaces **Figure 4.1.2b** of the 2023 EIA Report)
- **SI Figure 4.3: Other Wind Farm Developments included in the Cumulative Assessment (45km)** (replaces **Figure 4.1.9** of the 2023 EIA Report)
- **SI Figure 4.4: Cumulative ZTV - Operational, Consented and Proposed Wind Farms and Dunside (20 km)** (replaces **Figure 4.1.12** of the 2023 EIA Report)
- **SI Figure 4.5: Comparative ZTV - Application Layout vs Revised Layout** (new SI figure)
- **SI Figure 4.6: Comparative ZTV – Revised Proposed Development Hub Height Variation** (new SI figure)
- **SI Figure 4.7: Aviation Lighting ZTV – Nacelle Lighting** (replaces **Figure TA4.3.1** of the 2023 EIA Report)

- **SI Figure 4.8: Aviation Lighting ZTV – Lighting Intensity (45 km)** (replaces **Figure TA4.3.2** of the 2023 EIA Report)
- **SI Figure 4.9: Aviation Lighting ZTV – Lighting Intensity (10 km)** (replaces **Figure TA4.3.3** of the 2023 EIA Report)
- **SI Figures 4.10, 4.11 and 4.12: Photomontages from Viewpoints 1, 6 and 9** (replaces **Figures 4.2.1, 4.2.6 and 4.2.9** of the 2023 EIA Report); and
- **SI Figures 4.13.1 to 4.13.24: Appendix 4.4 Wireframes** (replaces **Figures TA 4.3.4 - 4.3.27** of the 2023 EIA Report).

SI Chapter 5: Cultural Heritage

- **SI Figure 5.1: Location of Designated Heritage Assets within the Site and Cultural Heritage Visualisation Viewpoint Locations** (new SI figure)
- **SI Figure 5.2: In-combination view of the Mutiny Stones (SM361) from the east of Byrecleugh Burn (**replaces **Figure 5.5** of the 2023 EIA Report**)**
- **SI Figure 5.3 – In-combination view of the Mutiny Stones (SM361) from Byrecleugh Ridge** (replaces **Figure 5.6** of the 2023 EIA Report)
- **SI Figure 5.4 – In-combination view from the 'forecourt' of the Mutiny Stones (SM361)** (new SI figure)
- **SI Figure 5.5 – In-combination view from Pyatshaw Ridge, looking west-south-west along the axis of the Mutiny Stones (SM361)** (new SI figure)

SI Chapter 6: Ecology

- **SI Figure 6.1: Phase 1 Habitat Plan** (replaces **Figure 6.3** of the 2023 EIA Report)
- **SI Figure 6.2: National Vegetation Classification Survey Plan** (replaces **Figure 6.4** of the 2023 EIA Report)
- **SI Figure 6.3: Areas of Guidance-stated Potential Groundwater Dependency (GWDTE)** (replaces **Figure 6.5** of the 2023 EIA Report)
- **SI Figure 6.4: OREP Figures** (replaces **Figure 6.10a** of the 2023 EIA Report)

SI Chapter 7: Ornithology

- **SI Figure 7.1: Confidential Golden Eagle Satellite Tag Data** (new SI figure)

SI Chapter 8: Hydrology, Hydrogeology, Geology and Peat

- **SI Figure 8.1: Watercourses, buffers, catchments and watercourse crossings (Existing and Proposed)** (replaces **Figure 8.2** of the 2023 EIA Report)
- **SI Figure 8.2: Ground Water Dependent Terrestrial Ecosystems (GWDTE), Groundwater abstractions and Private Water Supplies)** (replaces **Figure 8.3** of the 2023 EIA Report)
- **SI Figure 8.3: Peat Depths (combined Phase 1 and Phase 2)** (replaces **Figure 8.7** of the 2023 EIA Report)

SI Appendices

- **SI Appendix 1.1: Statement of Expertise** (supplements **Appendix 1.1** of the 2023 EIA Report)
- **SI Appendix 3.1: Borrow Pit Assessment** (replaces **Appendix 3.2** of the 2023 EIA Report)
- **SI Appendix 3.2: Schedule of Mitigation, Good Practice, Enhancement and Monitoring** (replaces **Appendix 3.5** of the 2023 EIA Report)
- **SI Appendix 6.1: Outline Restoration and Enhancement Plan (OREP)** (replaces **Appendix 6.6** of the 2023 EIA Report)
- **SI Appendix 8.1: Peat Survey Report** (replaces **Appendix 8.2** of the 2023 EIA Report)

- **SI Appendix 8.2: Peat Management Plan** (to be read in addition to **Appendix 8.3** of the 2023 EIA Report)
- **SI Appendix 8.3: Peat Landslide Hazard and Risk Assessment** (to be read in addition **to Appendix 8.4** of the 2023 EIA Report)
- **SI Appendix 8.4: GWDTE** (replaces **Appendix 8.6** of the 2023 EIA Report)
- **SI Appendix 8.5: Response to the Peat Landslide Hazard Risk Assessment Stage 1 Report** (new appendix)
- **SI Appendix 8.6: Outline Drainage Strategy** (replaces **Appendix 8.5** of the 2023 EIA Report)
- **SI Appendix 11.1: Aviation Lighting Report (**replaces **Appendix 11.1** of the 2023 EIA Report**)**
- **SI Appendix 12.1: Carbon Balance Assessment** (replaces **Appendix 12.2** of the 2023 EIA Report)

1.5 Status of Current Application Supporting Documents

1.5.1 The S36 application was accompanied by application drawings (**Figures 1 – 17** of the 2023 'Application Letter'). Due to the design modifications, several of these drawings have been updated or new drawings have been added, as listed below. With the exception of those drawings listed below, all other drawings within the 2023 Application Letter remain unchanged:

- **Figure 1: Site Location** (supersedes previous drawing Figure 1)
- **Figure 2 a – c: Site Layout** (supersedes previous Figure 2a-c)
- **Figure 3: Proposed Construction Compound 3** (supersedes of previous Figure 3.11c)

1.5.2 In addition to the 2023 EIA Report and Non-Technical Summary (NTS), the S36 application was supported by the following documents:

- Design and Access Statement (DAS);
- Pre-Application Consultation (PAC) Report;
- Planning and Energy Policy Statement; and
- Socio-Economic and Tourism Assessment.

1.5.3 A Design and Access Statement Addendum (DAS Addendum) has been prepared to support the SI; this should be read in conjunction with the 2023 DAS and this SI Report.

1.5.4 The Applicant has provided updates to the Community Councils in the area since the application has been submitted. The PAC Report (which is to illustrate pre application consultation activities undertaken) has not been updated.

1.5.5 There have been some changes to local planning policy, national climate change targets and renewable energy policy which requires the Planning and Energy Policy Statement to be updated. The Supplementary Planning and Energy Policy Statement is submitted in addition to this SI Report and should be read in addition to the 2023 EIA Report Planning and Energy Policy Statement.

1.5.6 The Socio-Economic and Tourism Assessment has been updated to take account of the Revised Proposed Development and is submitted in addition to this SI Report. This report supersedes the 2023 Socio-Economic and Tourism Assessment.

1.5.7 The Non-Technical Summary (NTS) has been updated to provide an updated description of the physical characteristics of the Revised Proposed Development and a summary of the effects resulting from the changes to the Proposed Development subject of the 2023 EIA Report.

1.6 Additional Consultation and SI Report Availability

1.6.1 In accordance with Regulation 20 of the EIA Regulations, consultation on this SI Report will be undertaken over a period of not less than 30 days during which members of the public and consultees will have the opportunity to submit representations to the Scottish Ministers on its content. The submission of the SI will be advertised on the application website (dunsidewindfarm.co.uk), in the Edinburgh Gazette and local newspaper in accordance with

Paragraph 2 of Regulation 20 of the EIA Regulations, and these adverts will provide details of the way in which public representations can be made to the Scottish Ministers.

1.6.2 The SI Report will be available for viewing online (alongside the 2023 EIA Report and other supporting documents) on the Energy Consents Unit portal[2] and on the application website: dunsidewindfarm.co.uk. Hard copies of the SI Report will be available for public viewing at the following locations:

- Scottish Borders Council Office, Council Headquarters, Newton St, Boswells, Melrose, TD6 0SA; and
- Westruther Village Hall, 6 Edgar Street, Westruther, Gordon, TD3 6ND.

1.6.3 A hard copy of the SI Report, figures and appendices can be made available on request at a cost of £200 and hard copies of the 2023 EIA Report can be provided on request at a cost of £500. Alternatively, the documentation can be posted upon request in electronic format on USB free of charge.

1.7 Approach to the SI

1.7.1 **Chapter 1: Introduction** of the 2023 EIA Report contains an approach to the EIA, setting out the methodology used to conduct the EIA in accordance with legislation, policy and good practice guidance. The same approach has been adopted for the preparation of this SI Report, as appropriate.

1.7.2 The cumulative baseline has changed since the S36 application was submitted in June 2023 therefore a reassessment of potential cumulative effects, in relation to landscape and visual effects has been carried out, with the findings presented within **Chapter 4** of this SI. Where relevant, other topics have also considered the likely potential effects of the cumulative baseline change.

1.7.3 Overall, each topic chapter included in this SI Report:

- Provides a revised assessment taking into account the amendments to the scheme, including additional and amended borrow pit locations, relocation and reduction in number/height of turbines; and
- Provides 'additional information' to address application consultation responses, or to supplement the original assessment.

1.7.4 This SI presents the information reasonably required to assess any related environmental effects of the proposed design modifications. The additional work undertaken assesses any new likely significant effects, and whether there are any changes to effects as presented in the 2023 EIA Report. Where necessary, measures are identified to avoid, prevent, reduce or, if possible, offset any identified significant adverse environmental effects ('mitigation measures'). As with the 2023 EIA Report, environmental information has been considered at an early stage to inform the consideration of the proposed modifications to the Proposed Development layout. In this way, potential environmental effects of the Revised Proposed Development continue to be avoided, reduced and where possible, offset.

1.7.5 It is not the intention of this SI to repeat information contained within the 2023 EIA Report and as such, where a chapter or assessment does not need to be updated, supplemented or replaced, no changes have been made to it as the 2023 EIA Report remains valid.

1.8 Application Consultation

1.8.1 SI **Table 1.1** provides an overview of the key comments made by consultees on the application of relevance to this SI Report, with responses added where relevant. It should be noted that these comments are not repeated verbatim, and the full responses, as well as other responses which do not require 'additional information' can be found on the ECU portal using application reference **ECU00003436**.

1.8.2 Requests for 'additional information' have been made by East Lothian Council (ELC), SEPA, NatureScot, HES and Ironside Farrar (on behalf of the ECU) through the application consultation process, and these are highlighted in bold for completeness.

[2] Scottish Government - Energy Consents Unit - Application Details

Table 1.1 Application Consultation Responses

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
Aviation	NATS Safeguarding 05/07/2023	The Proposed Development has been examined by our technical safeguarding teams and conflicts with our safeguarding criteria. Accordingly, NATS (En Route) plc objects to the proposal. The reasons for NATS's objection are outlined in the attached report TOPA SG33045. It has been determined that the terrain screening available for turbines T9, T10, T12, T13, T14 will not adequately attenuate the signal, and therefore these turbines are likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.	A blanking solution has been identified by NATS; the Applicant is in process of progressing a contract for this. The objection is expected to be removed in due course. The Revised Proposed Development will result in no substantive difference to the mitigation proposed.
	Edinburgh Airport 21/07/2023	The proposed development area is within the IFP Safeguarding area for Edinburgh Airport and I can confirm the applicant has already carried out the required Instrument Flight Procedure (IFP) Safeguarding Assessment. Unfortunately, this assessment has concluded the development would have an impact on our current published Instrument Flight Procedures and I have advised the developer that we, Edinburgh Airport, object to the development at this stage, on these grounds. No turbine tower of any turbine may be erected unless and until such time as the Scottish Ministers receive confirmation from the Airport Operator in writing that: (a) an IFP scheme has been approved by the Airport Operator; (b) the Civil Aviation Authority has evidenced its approval to the Airport Operator of the IFP Scheme (if such approval is required); and (c) the IFP scheme is accepted by NATS AIS for implementation through the AIRAC Cycle (or any successor publication) (where applicable) and is available for use by aircraft.	This will be resolved through revision to the Minimum Obstacle Clearance Allowance (MOCA) - Amendment to aviation obstruction plans. This process is led by Edinburgh Airport. The Revised Proposed Development will result in no substantive difference to the mitigation proposed through the 2023 EIA Report.
	Ministry of Defence (MoD) 14/09/2023	Close examination of the proposal has indicated that the proposed turbines would have a significant and detrimental effect on AD operations. The MOD must, therefore, object to this proposal. The reasons for this objection include, but are not limited to: a) Several of the turbines within the development being RLOS. b) The quantity of the turbines visible to the radar at RRH Brizlee Wood would exceed our 'cumulative effect' thresholds Research into technical mitigation solutions is currently ongoing and the developer may	The MOD will be reconsulted in relation to the Revised Proposed Development, however there is unlikely to be any substantive difference from the 2023 EIA Report and mitigation will still be required for the Air Defence radar at Brizlee Wood. The Applicant has engaged again with the MOD to ascertain the status of their objection and the method of mitigation likely to be available. The MOD are reconsidering their position and their response is awaited.

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
		wish to consider investigating suitable mitigation solutions.	
		The proposed development is in the vicinity of a site used to support the RAF Spadeadam Electronic Warfare Tactics facility. The development will cause unacceptable interference to threat radars deployed at this site. The proposed turbines will be, detectable by, and will cause unacceptable interference to the effective operation of threat radar systems deployed at Charter Hall Airfield.	The Revised Proposed Development will make no substantive difference; however, discussions will continue with the MOD on the basis that the Revised Proposed Development is adjacent to an operational wind farm which is considered to already be affecting the performance of the Threat Radar sometimes deployed to Charter Hall Airfield. The Applicant has been in further discussions with the MOD who are currently reconsidering their position on this issue.
		The development falls within Low Flying Area 16 (LFA 16), 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. If the developer is able to overcome the issues stated above, to address the impact up on low flying given the location and scale of the development, the MOD require 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.	Aviation lighting has been proposed for the Revised Proposed Development and MOD approval is being sought. This is reported in the Aviation Lighting and Mitigation Report **SI Appendix 11.1**. It is expected that suitably worded conditions can be agreed regarding aviation lighting as detailed in SI Appendix 11.1.
		As a minimum the MOD would require that the development be fitted with MOD accredited aviation safety lighting in accordance with the Air Navigation Order 2016. I can confirm that the MOD has responded to a submission from Wind Power Aviation Consultants LTD who provided a document titled 'Dunside Obstruction Lighting Proposal' dated 27 February 2023. The submission detailed the installation of Infra-red (IR) lighting on all of the 15 turbines, MOD have offered no objection to this lighting specification	See above.
Landscape and Visual Impact	East Lothian Council (ELC) 29/08/2023	AOD levels for the turbine bases are requested. Table 3.1 in Chapter 3 of the EIA report provides grid references and turbine tip heights above ground level but does not provide AOD levels for the turbines. If grid references are provided, then it should be possible for AOD levels to be provided. They must have been provided to the consultant to enable the creation of accurate visuals in the LVIA. A number of the turbines appear to sit higher	A response letter and shapefiles were submitted to ECU 07/09/23 to respond to clarification requests and distributed to ELC in turn. In correspondence to the ECU dated 08/09/23, ELC confirmed that they did not object to the proposal. Design modifications include a reduction in tip height of turbines in the north or the site and removal of Turbine 3. The

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
		within the landscape and thereby have greater visual impact. The provision of AOD levels for each turbine will help to identify whether it is the ground level that is causing this.	Revised Proposed Development does not introduce any new significant effects.
		Information on which turbine hubs are visible from the B6355 along the Whiteadder Reservoir, and whether they will be lit is requested. This is an area identified as a Special Landscape Area (SLA) within East Lothian. The lowest parts of this area around the reservoir and B6355 are around 5km from the site and currently have no visibility of turbines or turbine lighting. The landscape assessment within the LVIA of the Plateau Moorland – Lothians notes that the landscape effects of the wind farm will be indirect, resulting from changes in how the character of the landscape character type (LCT) is perceived. It states that "due to the proximity of the Proposed Development, the contrast is likely to be obvious and notable within 5 km". It assesses that overall, the effect of the Proposed Development on this LCT is judged to be Moderate and Significant within approximately 5 km.	A response letter and shapefiles were submitted to ECU 07/09/23 to respond to clarification requests and distributed to ELC in turn. The response letter included a description of the number of turbine hubs / nacelle lights visible from the B6355 in the vicinity of Whiteadder Reservoir and included ZTV extracts and wirelines. In correspondence to the ECU dated 08/09/23, ELC confirmed that they did not object to the proposal. Design modifications include a reduction in tip and hub height of turbines in the north of the site and the removal of Turbine 3. This has slightly reduced the visibility from the Whiteadder Reservoir area (see **SI Figure 4.5**). The Revised Proposed Development does not introduce any new significant effects.
		Two hub ZTVs have been submitted with the application. Figure 4.1.3b titled 'Turbine Hub Height (130m) Zone of Theoretical Visibility (ZTV) and Viewpoint Locations' provides more detailed mapping at A1 size. The clip from this below indicates theoretical visibility of up to four turbine hubs for a substantial section of the B6355 at the water's edge of the Whiteadder Reservoir, and up to eight turbine hub visibility for a short stretch of the road at Millknowe. This hub height is 9m lower than the worst case and visibility could be greater than indicated. In order to understand the impact on this section of the SLA we would ask that the applicant provide information on which turbine hubs would be visible at this location at both 130m and 139m heights and whether these are turbines proposed to have visible lighting.	A response letter and shapefiles were submitted to ECU 07/09/23 to respond to clarification requests and distributed to ELC in turn. The response letter included an extract from a comparative ZTV showing the difference between the theoretical visibility of turbine hubs at 130 m and 139 m, from the B6355 in the vicinity of Whiteadder Reservoir. In correspondence to the ECU dated 08/09/23, ELC confirmed that they did not object to the proposal. Design modifications include a reduction in tip and hub height of turbines in the north of the site and the removal of Turbine 3. This has slightly reduced the visibility from the Whiteadder Reservoir area (see **SI Figure 4.5**). A comparative hub height ZTV is shown in **SI Figure 4.6**. The Revised Proposed Development does not introduce any new significant effects.
		Within Appendix 4.3 a minor error is noted on Figure TA4.3.8 where turbine 2 is shown as having turbine lighting and no lighting has been shown on turbine 1. Also, on Figure TA4.3.23 where turbine 4 is shown as being lit. Please could the applicant clarify the position.	A response letter and shapefiles were submitted to ECU 07/09/23 to respond to clarification requests and distributed to ELC in turn. The response letter included clarification on the positions of turbine lighting in the figures.

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
			In correspondence to the ECU dated 08/09/23, ELC confirmed that they did not object to the proposal. Updated wirelines for the Revised Proposed Development, which also show the position of nacelle lights, are included in **SI Figures 4.13.1 to 4.13.24** (replacing Figures TA 4.3.4 - 4.3.27 of the 2023 EIA Report).
Hydrology, Hydrogeology, Geology and Peat	SEPA 21/09/2023	We request that the applicant consider relocating the infrastructure outwith the 50m buffer zone. If that is not possible, full justification and location specific mitigation is required for each breach. Please note that even with mitigation, the proposed location of borrow pit 3 is unlikely to be acceptable.	The original location for Borrow Pits 2 and 3 have been removed and have been replaced with three new borrow pit locations as shown in **SI Figure 3.1**. Further justification for the watercourse buffer encroachment at the proposed battery storage and the upgrades to the existing access track are provided in **Section 8.2** of this SI Report, along with additional mitigation in **Section 8.5** of this SI Report.
		We recommend that consideration be given to relocating Turbine 4 as set out in paragraph 2.3 of our advice. If this is not possible, we request that the applicant set out justification and suitable mitigation for our review. Appendix 3.5 and Appendix 8.6 must also be updated to fully reflect the mentioned mitigation and monitoring measures (paragraph 2.4, 2.5) as well as any additional mitigation relating to the location of Turbine 4.	Turbine 4 has been relocated 40m to the southeast, as shown in **SI Figure 3.1**. This will reduce potential effects on the GWDTE and is addressed in **Chapter 8** of the SI Report. **Appendix 8.6** of the **2023 EIA Report** has been updated (**SI Appendix 8.4**) to account for the relocation and also to fully reflect additional mitigation and monitoring measures. The mitigation and monitoring measures are also summarised in **Section 8.5** of this SI Report.
		The applicant should confirm that the submitted information on PWS relates to sources rather than supplied properties. Section 2 of Land Use Planning System SEPA Guidance Note 31 advises on how this should be confirmed and what information is required.	The PWS information in the 2023 EIA Report was provided from Scottish Borders Council PWS Database to the Applicant. However, SBC did note that *"the information pertaining to the source locations (grid references) in their database may not be accurate, and really only confirms the premises likely to have their sources close by"*. Therefore, in some cases the mapped locations may be the properties supplied (and not the actual source locations). At the time of writing the 2023 EIA Report, PWS questionnaire/ site visits were not conducted as all the PWS were all over 3 km away from the proposed turbines/new tracks. Following receipt of the SEPA consultation response, PWS questionnaires were sent out in November and December 2023 to PWS properties close to the Revised Proposed Development to obtain further information on PWS source locations to inform this SI

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
			Report. This is provided in **Section 8.2** of this SI report.
		The applicant should confirm whether the owner of the groundwater abstractions for Fallago Rig wind farm has agreed to the contingency plan involving alternative supplies being put in place if required. If the plan has been agreed with the abstraction owner, we would have no objection in relation to these abstractions. (Note that we are not able to comment on the alteration or the provision of alternative supplies, the acceptance of which can only be agreed between the applicant and the supply owner).	A full working agreement will be put in place with the owners/operators of Fallago Rig WF relating to working practices, access control, emergency response procedures, etc. This currently sets out the overarching principles. It will remain live and updated as detailed construction details are available post consent including detailed proposals for groundwater abstraction mitigation. This is set out in **Chapter 8** of this SI.
		We note that the track between T13 and T15 was realigned following phase 2 peat probing and as such the specific route has not been probed fully although there is a commitment to float the track over deeper peat (>1m depth). We would prefer that additional probing be carried out pre-consent, so that impacts on peat can be quantified, however we would accept the proposed mitigation (floating construction) in this instance which could be secured by a suitably worded planning condition. Additional probing will be required before construction in order to determine the extent of the track that requires to be floated.	Additional peat probing was undertaken in November 2023 to cover the realigned parts of the track. This is reported in the updated Peat Survey report (**SI Appendix 8.1**) and in **Chapter 8** of this SI.
		We request that peat probing is carried out on the proposed borrow pit locations, unless further evidence can be provided to demonstrate that peat formation is impossible due to the slope gradients or probing is not possible. We would also highlight that borrow pit 1 does not appear to have been mapped on the detailed plans and as such we also request further information on the location of borrow pit 1, so that an assessment of likely peat impacts can be made.	As above additional peat probing was undertaken for borrow pit locations. Borrow pit 1 (now borrow pit 4) was mapped on the 2023 EIA Report figures and documentation. **SI Appendix 3.1** provides an updated Borrow Pit Assessment.
	Ironside Farrar Ltd 23/10/2023	Justification is requested for the incomplete probing regarding the hardstanding at turbine 13 and several sections of access track.	A response was submitted to the ECU on 23rd November 2023 (**SI Appendix 8.5**). Additional peat probing was undertaken in November 2023 to cover the incomplete areas and to infill the Phase 2 data with a 10m grid at the proposed infrastructure. This is reported in the updated Peat Survey report (**SI Appendix 8.1**), updated PMP (**SI Appendix 8.2**) and updated PHLRA (**SI Appendix 8.3**) and summarised in **Chapter 8** of the SI.
		Comment is requested on whether it is appropriate to omit undrained and loaded	A response was submitted to the ECU on 23rd November 2023 (**SI Appendix 8.5**) and the updated FoS calculations are

Topic	Consultee and Date	Issue Raised	Response / Action Taken in SI
		scenarios of FoS analysis, given the proposed floating tracks.	included in **Chapter 8** of the SI and the updated PLHRA (**SI Appendix 8.3**).
		Phase 2 probing at infrastructure requires to be undertaken on a 10m grid as opposed to a 20m grid to be compliant with relevant published guidance (2017 Peatland Survey Guidance)	A response was submitted to the ECU on 23rd November 2023 (**SI Appendix 8.5**). Additional peat probing was undertaken in November 2023 to cover the additional areas and to infill the Phase 2 data with a 10m grid at the proposed infrastructure. This is reported in the updated Peat Survey report **(SI Appendix 8.1)**, updated PMP (**SI Appendix 8.2**) and updated PHLRA (**SI Appendix 8.3**) and summarised in **Chapter 8** of the SI.
Cultural Heritage	Historic Environment Scotland (HES) 12/10/2023	There is insufficient information for HES to confirm views and to identify all the proposed turbines that would contribute to the significant adverse impact. We strongly recommend further consultation with HES for further advice on the location of suitable viewpoints. We do not agree with the methodology used for the impacts assessment on historic environment and therefore do not agree with some of the assets scoped out of further assessment. The style of matrix within the EIA handbook is recommended for the assessments of impacts as it provides a clear way of understanding how the significant effects might occur, therefore it is not clear how the assessments of impacts and conclusion of significant effects have been carried out using Tables 5.3 and 5.4 of the EIA Report.	Further information in the form of additional visualisations for the Mutiny Stones was provided to HES via email on 15th December 2023. The 'Principles for Cultural Heritage Impact Assessment in the UK' approach is the agreed standard from IEMA, IHBC and CIfA and is more recent than Appendix 1 of the SNH EIA Handbook (2018) and the matrix-based approach suggested. The approach taken in the 2023 EIA Report is now accepted best practice. The assessment of effects presented in Chapter 5 and Appendix 5.1 of the 2023 EIA Report is considered to provide a proportionate and transparent descriptive narrative of how the effects have been assessed.
		Borrowston Rig, stone circles and Cairns, SM359: ■ We disagree with the justification for scoping out this monument from more detailed assessment. We agree that the visual and spatial relationship between these heritage assets would still be appreciable, however we disagree that the setting of this asset does not include the development site. The ZTV provided indicates that up to 15 turbines would be seen in views from the monument, and as such would encroach into the edge of the open and wide views along the plateau. These open views from and towards the monument along the flat uplands emphasise the remote sense of place afforded to these ceremonial and burial monuments and is a key contributor to the ways in which the site is understood, appreciated and experienced. However, we are content that the development may	LUC is content that the principal relationships that define and contribute to Borrowston Rig, stone circles and Cairns (SM359) and the wider group of late Neolithic/Early Bronze Age ritual and funerary assets of which it is part – are focused on the series of rolling plateaux on which the asset is located. Interrelationships between these assets would remain readily understandable and appreciable. While the Revised Proposed Development will be visible in the background, it would be at a distance (c.5.5km to the closest turbine) where the turbines recede into the distance and are clearly legible as being located within a separate landscape unit (i.e. over the horizon created by the ridge of Hareshaw Knowe / Killpallet Heights). While this could have a relatively minor effect on the experience of the asset, it will not affect the understanding or appreciation of its cultural significance.

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		not affect the integrity of the setting of this monument to such a degree as to raise issues of national interest. ■ Mutiny Stones, long cairn 1100m NNW of Byrecleugh, SM361: Insufficient evidence provided to support the analysis of potential impacts of the development on this monument. Photomontages Figure 5.5f and 5.5h do not show all the turbines. In addition, the monument itself is not shown in some of the imagery of the proposed development. We have concerns that the two viewpoints provided do not include all the necessary information and do not represent the range of impacts on this monument from the proposed development. Further information is therefore required for us to confirm a view on the application. ■ Visualisations required: We request that additional visualisations and information comprising photomontages that clearly show all the turbines and the monument (SM361) should be provided. Visualisations from viewpoint CH01 should include a view broadly west along the axis of the scheduled monument and should show the monument as well as proposed turbines behind. An additional visualisation should be taken from a point just east of the cairn, looking west to the east end of the cairn, so as to show any turbines appearing behind the cairn. This would allow us to confirm our view on the proposals. ■ Wedderlie House LB19740: We recommend that if the design of the wind farm changes, potential effects on the setting of the house should be re-assessed.	Further information in the form of additional visualisations was provided to HES via email on 15th December 2023. Additional photomontages have been provided (**SI Figures 5.4** and **5.5**) to inform the assessment of effect to the Mutiny Stones, (SM361) following the design modifications. The Revised Proposed Development will not result in a change to the assessment of effects identified in Appendix 5.1 of the 2023 EIA Report.
		In paragraph 5.163, the applicant states that “No specific mitigation to reduce the potential significant effects to the Mutiny Stones (SM361) and Byrecleugh Farmstead (SM4549) due to setting change resulting from the operation of the Proposed Development have been identified”. We disagree and consider that adverse impacts could be mitigated by redesign. We regard turbines 2, 3 and 5 as problematic. However, there is insufficient information for us to identify other turbines that may contribute to significant adverse	Paragraph 5.163 of Chapter 5 of the 2023 EIA Report relates to specific mitigation i.e. mitigation in addition to embedded mitigation (design) and best practice mitigation. For developments of this type, it is difficult to fully mitigate the impacts to heritage assets resulting from setting change beyond those changes to the design (embedded mitigation) identified as the Proposed Development evolved. Therefore, no specific mitigation to reduce

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		impacts and to confirm our advice on mitigation.	the potential effects of setting change to heritage assets has been identified. The design modifications (embedded mitigation) resulting in the Revised Proposed Development has reduced the magnitude of effect on the Mutiny Stones. See **Chapter 5**.
	HES 23/01/2024	HES confirm that [from the additional visualisations supplied] they have sufficient information to assess the impacts of the proposals on the setting of the monument. HES maintain their objection due to significant effects to the Mutiny Stones. HES stated: it would be possible to mitigate the impacts of the development through a further redesign of the scheme, involving the removal, height reduction or relocation of six turbines. Should a redesign be presented to us which reduces the level of effect on the setting of Mutiny Stones, long cairn 1100m NNW of Byrecleugh (SM361) we would be able to remove our objection.	Noted. HES attended a design workshop to discuss possible design modifications to address HES' concerns regarding the direct effects due to setting change to the Mutiny Stones. A meeting was held on 28th March 2024 and was attended by representatives of LUC Historic Environment Team, EDF and HES. A number of design modifications were discussed and evaluated.
	HES Email from HES 02/04/2024	We looked at the visualisations you [LUC] had produced, which showed options including the removal of T3, and reductions in height of the turbines to 180m. We welcome the removal of T3. The height reductions you propose deal with our concerns about T1 & T4. We continue to have concerns about T5, the hub of which is visible above the skyline in views from the long cairn [Mutiny Stones], and T6, the blades of which are visible in views to the west along the long axis of the cairn. We discussed options which would reduce the height of T5 and T6 further to 150m. You had concerns about whether this would be possible, and what the practical and economic impacts of having a variety of turbine models would be. However, draft visualisations were drawn up that showed these reductions, and which also moved T6 further to the south. These changes appeared to further reduce the potential impacts of the development on the setting of the cairn, and we would welcome formal consultation on them.	The design modifications identified at the design workshop on 28th March 2024 and summarised in HES' email dated 2nd April 2024 have been carried forward through to the Revised Proposed Development. The assessment of effects is presented in **Chapter 5** of this SI Report.
Ecology	NatureScot Letter dated 06/10/2023	River Tweed Special Area of Conservation (SAC) – Habitats Regulations Appraisal (HRA) We advise that a suitable condition is applied (or conditions are applied) to ensure the implementation of suitable pollution prevention and environmental management measures, in accordance	The sHRA provided in **Appendix 6.7** of the 2023 EIA Report provides detailed mitigation to be employed to prevent construction-related pollution affecting the qualifying interests of the River Tweed SAC. The Schedule of Mitigation included within **Appendix 3.5** of the 2023 EIA Report includes the details of all pollution prevention and environmental

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		with SEPA's stipulations detailed in their response to this application (dated 03 July 2023).	management and mitigation measures to be implemented in accordance with SEPA's consultation response (dated 03 July 2023). Therefore, it is considered that these requirements have been met and it is anticipated that the requirement for a pollution prevention plan incorporating these measures will be secured by planning condition if consent is granted.
	Letter dated 06/10/2023 and meeting 05/12/2023	NatureScot advise that, in reference to NPF4, policy 3, the OREP should go further and that proposals to deliver positive effects are separated out from mitigation and compensation measures to ensure that all requirements are fulfilled.	The OREP (**SI Technical Appendix 6.1**) has been updated to provide a clear split between mitigation and enhancement measures adopted by the Revised Proposed Development in line with the mitigation hierarchy. For completeness committed relevant mitigation measures have been included in the OREP. Enhancement measures outlined take account of the Site's environmental characteristics and potential for enhancement, as identified within the baseline studies and the EIA process. **Chapter 6** of this SI Report confirms that a total of 35.006Ha of habitats of conservation concern will be lost as a result of the Revised Proposed Development, this equates to 1.87% of the Study Area. The 2023 EIA Report ecology assessment (**Chapter 6**) confirmed that there were no significant effects of habitats of conservation concern. The OREP has been updated to include further details of appropriate enhancement measures adopted. It is considered that the OREP will deliver positive meaningful biodiversity enhancement that is appropriate to the Site. This level of intervention would not happen without the presence of the Revised Proposed Development and most of the Site would remain as grouse moorland.
	NatureScot Meeting 05/12/2023 and email 28/06/24	In accordance with our peatland guidance, we recommend that restoration should be in the order of 1:10 (lost: restored) for priority peatland habitats. It is understood that these habitats have been influenced to varying extents by grazing pressure, recent and historical burning, and artificial drainage, however clarity on the commitment to restore peatland in accordance with the 1:10 ratio with detail as to where this will take place onsite along with a commitment to carry out restoration offsite if necessary.	**Table 6.1** of this SI Report confirms that a total area of 11.527 Ha of NVC priority peatland communities M6, M19 and M20 will be lost as a result of the Revised Proposed Development. **SI Figure 6.4** provides indicative locations of two areas designated for "re-wetting" to encourage bog forming species to colonise the currently degraded bog/ heath habitats. These two areas will provide up to 155 Ha for peatland enhancement. In addition, a further four areas have been designated for heath improvement.

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		The OREP often utilises phrases such as 'potential', 'proposed' and 'anticipated' in reference to many of the suggested restoration plans, making the extent and commitment of the plans uncertain. The level of commitment for measures outlined in the OREP should be clearer to show commitment to the objective of NPF4.	Language has been updated within the OREP (**SI Appendix 6.1**) to reflect ambition behind the Revised Proposed Development's commitment to achieving the objectives of NPF4.
Ornithology	NatureScot 06/10/2023 and Meeting 05/12/2023	The EIA Report suggests that the NHZ is around 1,400 pairs based on Wilson et al., 2015. However, this does not account for population decline since this 2015 and we estimate that the current population is more likely to be around 1,220 pairs. The EIA Report also does not consider that most curlew populations do not produce enough young to compensate for adult losses, making increases in mortality more significant.	Meeting with NatureScot held on 5th December 2023 to further discuss these points. Additional discussion relating to curlew included in this SI Report **Chapter 7** regarding the level of impact / mitigation required and enhancement measures. e.g. predator control, re-wetting; distinguishing where planting and curlew areas overlap if any and whether there is any benefit to adjusting the planting proposals to account for this. Following provision of alternative NHZ 20 curlew breeding population estimates, a revised version of the curlew assessment has been provided in **Chapter 7** of this SI Report.
		We recommend that, where possible, measures to compensate for biodiversity loss, and to provide additional enhancement, should happen within the development site. However, if there is not adequate opportunity on-site to provide compensation and enhancement measures for curlew, or if significantly better outcomes can be achieved elsewhere, then off-site delivery may be justified. For other protected species, please refer to our standing advice for full information and requirements regarding protected species surveying, mitigation and licensing.	Meeting with NatureScot held on 05/12/23 to further discuss these points. The updated OREP (SI Appendix 6.1) distinguishes between mitigation and enhancement measures where applicable. Additional discussion relating to curlew has been included in Chapter 7 of this SI Report regarding level of impact / mitigation required and enhancement measures. e.g. predator control, re-wetting. Distinguishing where planting and curlew areas overlap if any and whether there is any benefit to adjusting the planting proposals to account for this.
		The cumulative assessment only considers other wind farm developments and excludes other developments which could increase mortality or cause displacement/disturbance, such as woodland creation (although we appreciate that these are challenging to include due to lack of available data).	It is acknowledged that the cumulative assessment presented in the 2023 EIA Report assessment only considered other wind farm developments within Natural Heritage Zone (NHZ) 20 and it was noted in the assessment that *"No other renewable or non-renewable projects within NHZ 20 were identified that could have a cumulative effect on the IOFs."* (paragraph 7.226 of Chapter 7 of the 2023 EIA Report). Whilst cumulative assessments seek to quantify all impacts, it is usually not possible to accurately do this for all possible risks (e.g., climate change, woodland planting schemes, housing developments) due to a lack of comparable data (i.e. data readily and clearly available on local planning portals

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			that have been subject to a similar level of planning and assessment methodology/regulation). It is therefore considered that the cumulative assessment is representative.
	RSPB 17/01/2023	Significant concerns regarding the effects of the Proposed Development on the status of the IUCN red-listed and globally near-threatened breeding Curlew within the proposed Development Site. Specifically, we are concerned that there that the cumulative operational displacement and collision risk for this species have not been adequately assessed.	An assessment for cumulative collision risk for curlew has been provided in **Chapter 7** of this SI Report.
		The EIA Report does not provide sufficient detail on proposed mitigation measures to address impacts, nor adequate proposals for habitat enhancement in the Outline Restoration and Enhancement Plan (OREP), in relation to compensating predicted impacts to breeding Curlew	An updated version of the OREP is provided as **SI Appendix 6.1** to this SI Report that took into consideration feedback provided in relation to the OREP submitted as part of the 2023 EIA Report.

2. Chapter 2

2.1 Site Selection and Design Strategy

2.1.1 A number of modifications to the Proposed Development (2023 application layout) are proposed regarding the number and/or positioning of turbines and infrastructure within the Site as shown in **SI Figure 3.1**, however the design strategy and site-specific design objectives that have guided the design to date, and as detailed in **Chapter 2: Site Selection and Design Strategy** of the 2023 EIA Report, remain unchanged.

2.1.2 The modifications to the borrow pits, turbines and tracks have had cognisance of constraints identified through the EIA desk and field surveys as well as additional field surveys undertaken to inform this SI. The following key environmental considerations have been taken account of when modifying the scheme layout:

- Ecology: Continued avoidance of sensitive habitats observing appropriate separation distances with respect to protected species and associated habitat features (including bats, otters and mountain hare, watercourses and key habitat features)
- Cultural Heritage: Avoiding physical effects to designated and non-designated heritage assets within the Site, and reducing the magnitude of change to the Mutiny Stones Scheduled Monument (SM361) arising from change in its setting.
- Hydrology and Peat: Continued avoidance of construction in areas identified as likely Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and their source zones as well as areas classified as peat.
- Topography: Continued avoidance of steeper slopes or more complex topography where feasible to ensure constructability and minimising the need for significant cut and fill engineering works.

2.2 Design Modifications

2.2.1 The selection of an appropriate scale of turbine (tower height and rotor diameter) was a key consideration. The 2023 EIA Report proposed turbines based upon a maximum blade tip height for turbines of 220m, with maximum case scenarios in terms of hub height and rotor diameter variations considered as required by other technical chapters.

2.2.2 This SI report proposes modifications to the turbine design, following consultation with HES with varied turbine heights to be included in the Revised Proposed Development ranging from 150m – 220m.

2.2.3 As outlined in **Table 1.1** further discussions have taken place with HES to arrive at the Revised Proposed Development. Additional visualisations were provided to HES on the 15th December 2023, followed by a design workshop attended by the Cultural Heritage specialists, the Applicant and HES on 28th March 2024. A number of layout options were discussed at the workshop and the Revised Proposed Development was chosen to be carried forward for assessment.

2.2.4 The location of the turbines, access tracks and borrow pits have taken cognisance of consultation responses from statutory consultees responding to the 2023 EIA Report and Proposed Development.

2.2.5 Further details are provided in **Chapter 3** and **Chapter 5.**

3. Chapter 3

3.1 Development Description

3.1.1 **Chapter 3: Development Description** of the 2023 EIA Report describes the components of the Proposed Development for which consent is being sought from the Scottish Ministers and which have been assessed in the EIA. This chapter of the SI Report provides details of the modifications to the infrastructure proposed within the Site following consultation on the application.

3.1.2 The following appendices associated with **Chapter 3** of the **2023 EIA Report** remain unchanged:

- **Appendix 3.1: Outline Construction Environnemental Management Plan (CEMP)**;
- **Appendix 3.3: Outline Outdoor Access Management Plan**; and
- **Appendix 3.4: Explosive Ordnance Threat Assessment (EOTA)**.

3.1.3 With the exception of the figures listed below; all other figures that accompany **Chapter 3** of the **2023 EIA Report** remain unchanged.

- **SI Figure 3.1: Site Layout** (replaces Figure 3.1 of the 2023 EIA Report)
- **SI Figure 3.2: Indicative Turbine Elevation** (supplements Figure 3.2 of the 2023 EIA Report)
- **SI Figure 3.3: Proposed Construction Compound 3** (replaces Figure 3.11c of the 2023 EIA Report)

3.2 Overview of the Revised Proposed Development

3.2.1 The main components of the Revised Proposed Development are listed below:

- Up to 14 wind turbines, two with a maximum blade tip height of 150m, three with a maximum blade tip height of 180m and nine with a maximum blade tip height of 220m (with an external transformer kiosk at each turbine);
- Crane Hardstandings adjacent to each turbine position;
- Four new watercourse crossings and associated infrastructure;
- Approximately 14.97km of proposed wind farm tracks and approximately 1.1km of proposed light vehicle track;
- Approximately 17.5km of existing access tracks (including areas of widening/upgrading);
- Onsite underground electrical cables and cable trenches;
- Control building and extension to Fallago Rig existing substation;
- A 20 MW battery storage area;
- Four construction compounds (two existing compounds which will remain in situ following completion of the Proposed Development, and two proposed which will be restored following construction), including laydown area(s) and car parking; and
- Up to four borrow pits which will be closed and reinstated following completion of construction.

3.3 Modifications to Turbines

3.3.1 To address concerns raised by consultees, consent is being sought for the installation and operation of up to 14 three bladed, horizontal axis turbines with maximum blade tip heights ranging from 150m – 220m (**Table 3.1** below). Where relevant, the technical chapters of this SI Report identify which candidate turbine/turbine parameters have been used to assess a maximum/worst case scenario using currently available data. The following changes are incorporated into the Revised Proposed Development:

- Turbine 1, Turbine 2 and Turbine 4 reduced from 220m to 180m thereby reducing direct effects due to setting change impacts on the Mutiny Stones.
- Turbine 5 and Turbine 6 reduced from 220m to 150m, thereby reducing direct effects due to setting change impacts on the Mutiny Stones.

- Turbine 6 moved 200m south to reduce setting impacts on the Mutiny Stones.
- Turbine 3 and associated track removed to reduce setting change on the Mutiny Stones.
- Turbine 4 moved 40m south-east reducing potential impacts on the GWDTE.
- Turbine 9 moved 50m north to improve set back from estate boundaries.

3.3.2 It should be noted that the final chosen turbine model is likely to be different to currently available turbines and this may affect the rotor lengths and hub height. However, all assessments are based on a maximum case and judgements of significance will not change. The Applicant will use the best turbine option available at the time of construction within the constraints of the maximum blade tip height of each turbine location. Likewise, the overall capacity rating of suitable turbines may vary from the time of application with replacement models regularly being developed by turbine manufacturers.

3.3.3 As for the 2023 EIA Report, the LVIA considers the 'reasonable worst case' scenario for the night-time assessment to be a candidate turbine with a taller hub, as there is the potential for greater visibility of lighting which is at nacelle height. A ZTV has been run to compare the 'day-time' scenario (with a maximum hub height of 130 m) and the 'night-time' scenario (with a maximum hub height of 139 m). This applies to turbines 7 to 15 in the south of the Site only. The comparative hub height ZTV in **SI Figure 4.6** illustrates that the 'night-time' scenario would increase theoretical visibility to very small parts of the study area, and mostly within areas to the south of the Site. This does not affect the findings of the assessment contained within this SI Report.

3.3.4 A diagram of a typical turbine is shown on **SI Figure 3.2**.

Table 3.1 Revised Proposed Development Wind Turbine Details

Turbine No[3]	Easting	Northing	Maximum Blade Tip Height (m)	Candidate Turbine
1	360176	660152	180m	V150 6MW
2	361195	660182	180m	V150 6MW
3	Removed			
4	360252	659556	180m	V150 6MW
5	361171	659607	150m	V136 4.5MW
6	360431	658819	150m	V136 4.5MW
7	359947	658162	220m	V172 7.2MW
8	361038	658162	220m	V172 7.2MW
9	359569	657628	220m	V172 7.2MW
10	360186	657242	220m	V172 7.2MW
11	361000	657558	220m	V172 7.2MW
12	360598	656792	220m	V172 7.2MW
13	361483	657214	220m	V172 7.2MW
14	361107	656413	220m	V172 7.2MW
15	362045	656697	220m	V172 7.2MW

[3] Please note that turbine numbering remains as per the 2023 EIA Report with the exclusion of Turbine No.3.

3.4 Modifications to Borrow Pits

3.4.1 In addition to the above, there has been a requirement to amend borrow pit locations. Borrow pit 3 has been removed in response to SEPA consultation response requests, as the borrow pit was located within 50m of a watercourse. Borrow pit 2 was relocated closer to the construction area to reduce stone transportation and minimise disruption on the access track.

3.4.2 Further assessments have identified more suitable options for siting of borrow pits which are outlined in **SI Appendix 3.1: Borrow Pit Assessment** and shown in **SI Figure 3.1.** There are now four proposed borrow pits; three new locations and one existing location from the 2023 EIA Report (borrow pit 1, now described as borrow pit 4 in the SI reporting). Details of the four borrow pits are outlined in **Table 3.2** below.

Table 3.2 Borrow Pit Locations

Borrow Pit Area	Approximate top Size (m^2)	Approximate bottom Size (m^2)	Location (British National Grid)
Borrow Pit 1 (north-west)	34,847	32,720	359849, 659788
Borrow Pit 2 (north-east)	6,115	4,703	360962, 659985
Borrow Pit 3 (south-west)	21,350	19,990	359216, 657881
Borrow Pit 4 (south-east)	8,880	7,940	363770, 658000

3.5 Modifications to Tracks

3.5.1 The access track leading up to Turbine 3 has been removed, due to the turbine being removed from the Proposed Development. The track giving access to Turbine 9 has also been reduced and reoriented, following the relocation of that turbine.

3.5.2 Due to these modifications, approximately 17.5km of existing track will be now utilised, and approximately 14.97km of new track (including floating tracks) and 1.1km of light vehicle tracks will be built as part of the Revised Proposed Development.

3.6 Temporary Construction Compounds

3.6.1 As proposed in the 2023 EIA Report, four temporary construction compounds are proposed. While the general location of these compounds remains unchanged, there has been a slight reduction to the size of the proposed CC3 to align with the updated application boundary. The revision to CC3 can be seen in **SI Figure 3.3**.

3.7 Land Take

3.7.1 **Table 3.3** provides a summary of temporary and 'permanent' land take for the components of the Revised Proposed Development, which have changed from those presented in the 2023 EIA Report due to the modifications made to the layout.

Table 3.3 Revised Proposed Development Areas of Temporary and Permanent Land Take[4]

Project Elements	Temporary Land Take (m^2)	Permanent Land Take (m^2)
Turbines, Crane Pads and Laydown areas	130,700	25,150
Substation Compound/Extension		19,700
Battery Storage (note: existing levelled area)		2,900

[4] All land take measurements have been rounded to the nearest $50m^2$.

Project Elements	Temporary Land Take (m^2)	Permanent Land Take (m^2)
Construction Compound 1 and 4 (including parking and staff welfare facilities) – existing levelled compound areas	8,450	
Construction Compound 2 and 3 (including concrete batching plant, parking and staff welfare facilities) – proposed areas	22,850	
Borrow Pits	71,200[5]	
Onsite Access Tracks (new)		
Floating		4,100
Cut and Fill		114,600
Onsite Access Tracks (Existing – area provided is only area of required widening)		11,550

3.8 Aviation Lighting

3.8.1 Article 222 of the Air Navigation Order (ANO) 2016 requires by law that en-route obstacles in excess of 150m should be fitted with medium intensity steady red lights visible at night. Night is defined as half an hour after sunset until half an hour before sunrise. It is acknowledged, therefore, and as set out in the 2023 EIA Report, that visible aviation warning lights are required under the ANO for all turbines as they have proposed heights which are equal to or exceed 150m in height.

3.8.2 In line with the published guidance from the Ministry of Defence (MOD) and pending approval from the Civil Aviation Authority (CAA), seven turbines will be fitted with Air Navigation Order (ANO) visible red lights (Turbines 1, 2, 6, 8, 9, 14 and 15) and all 14 turbines will be fitted with infra-red hub mounted obstruction lighting. Further details are provided in **SI Appendix 11.1: Aviation Lighting Report**.

3.9 Peat Management

3.9.1 SEPA and Ironside Farrar Ltd have commented on the level of peat probe data available and requested additional updates (see **Table 1.1**). An updated Peat Survey Report, PMP and PLHRA (**SI Appendices 8.1 – 8.3** respectively) have been prepared in response to SEPA's comments. **SI Appendix 8.5** provides details in response to the Ironside Farrar PLHRA requests. Further details of the updates made are provided in **SI Chapter 8: Geology, Hydrology, Hydrogeology and Peat**.

3.10 Micrositing

3.10.1 The micrositing allowance of 100m for turbines and other infrastructure remains as per the 2023 EIA Report. This would be applied if adverse ground conditions or new environmental sensitivities be encountered during pre-construction ground investigations and surveys, or if more optimal ground conditions are identified nearby. Movement of infrastructure will also take into consideration other onsite constraints, such as environmental constraints, and be subject to advice from an Environmental Clerk of Works (ECoW).

3.10.2 This allowance will ensure that the final position of the turbines and associated infrastructure are not varied to such a degree as to cause a notable change in the predicted environmental effects outlined in the EIA Report It is anticipated that, relocation of turbines beyond 50 m will require written approval from SBC in consultation with relevant statutory consultees. There is a requirement to note tailored restrictions to the standard micrositing

[5] Borrow pit land take has increased from the 2023 EIA Report Table 3.2 due to the inclusion of one additional borrow pit and relocation of the borrow pits away from the existing access track. Flatter terrain results in the borrow pits stretching over a larger area to provide the same aggregate yield.

allowance proposed to ensure that the final position of the turbines and associated infrastructure are not varied to such a degree as to cause a notable change in the predicted environmental effects outlined in the 2023 EIA Report and SI Report. Three tailored micro-siting restrictions are set out below:

- Micrositing of Turbine 4 should not be undertaken in a northernly direction; this would move it closer to the GWDTE and this should be avoided. Further details are provided in this **SI Report Chapter 8** and **SI Appendix 8.4**.
- Micrositing should not encroach into watercourse or GWDTE buffers and will be reviewed by the ECoW to ensure hydrological features continue to be appropriately protected.
- Micrositing for Turbines 1, 2, 4, 5 and 6 should only be undertaken with appropriate historic environment design advice from the ACoW, to ensure that turbines do not further intrude on views from / in-combination with the Mutiny Stones scheduled monument.

4. Chapter 4

4.1 Landscape and Visual Impact Assessment

4.1.1 **Chapter 4: Landscape and Visual Impact Assessment** of the 2023 EIA Report presents the findings of the landscape and visual assessment for the Proposed Development. This was supported by the following appendices (2023 EIA Report Volume 4):

- Appendix 4.1: LVIA and Visualisation Methodology;
- Appendix 4.2: Residential Visual Amenity Assessment (RVAA);
- Appendix 4.3: Aviation Lighting Assessment; and
- Appendix 4.4: Consideration of Scoping Stage Sites.

4.1.2 This SI chapter should be read in conjunction with **Chapter 4** of the 2023 EIA Report and appendices noted above.

4.1.3 The purpose of this chapter of the SI is to:

- Evaluate the effects of the Revised Proposed Development on the landscape and visual resource, due to the design modifications set out in Chapter 1; and
- Update the cumulative landscape and visual assessment in relation to changes to the cumulative baseline since the 2023 EIA Report was submitted.

4.1.4 This chapter is accompanied by the following figures:

- **SI Figure 4.1: Blade Tip Height (150 – 220 m) Zone of Theoretical Visibility (ZTV) and Viewpoint Locations (A3)** (replacing Figure 4.1.2a of the 2023 EIA Report);
- **SI Figure 4.2: Blade Tip Height (150 – 220 m) ZTV and Viewpoint Locations (A1)** (replacing Figure 4.1.2b of the 2023 EIA Report);
- **SI Figure 4.3: Other Wind Farm Developments included in the Cumulative Assessment (45km)** (replacing Figure 4.1.9 of the 2023 EIA Report);
- **SI Figure 4.4: Cumulative ZTV - Operational, Consented and Proposed Wind Farms and Dunside (20 km)** (replacing Figure 4.1.12 of the 2023 EIA Report);
- **SI Figure 4.5: Comparative ZTV – Application Layout vs Revised Proposed Development;**
- **SI Figure 4.6: Comparative ZTV – Revised Proposed Development Hub Height Variation;**
- **SI Figure 4.7: Aviation Lighting ZTV – Nacelle Lighting** (replacing Figure TA4.3.1 of the 2023 EIA Report);
- **SI Figure 4.8: Aviation Lighting ZTV – Lighting Intensity (45 km)** (replacing Figure TA4.3.2 of the 2023 EIA Report);
- **SI Figure 4.9: Aviation Lighting ZTV – Lighting Intensity (10 km)** (replacing Figure TA4.3.3 of the 2023 EIA Report);
- **SI Figures 4.10, 4.11 and 4.12: Photomontages from Viewpoints 1, 6 and 9** (replacing Figures 4.2.1, 4.2.6 and 4.2.9 of the 2023 EIA Report); and
- **SI Figures 4.13.1 to 4.13.24: Appendix 4.4 Wireframes** (replacing Figures TA4.3.4 - 4.3.27 of the 2023 EIA Report).

4.1.5 The visualisations (photomontages and wireframes) produced as **SI Figures 4.10, 4.11 and 4.12** have been prepared in accordance with the methodology set out in Appendix 4.1 of the 2023 EIA Report.

4.1.6 This Chapter should be read in conjunction with the Landscape and Visual Impact Assessment (LVIA) for the Proposed Development, which is set out in Volume 1: Chapter 4 of the 2023 EIA Report, with supporting figures in Volume 3a and supporting visualisations in Volume 3b of the 2023 EIA Report. The LVIA methodology applied in the 2023 EIA Report and this SI was developed primarily in accordance with the principles contained within the

Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)[6]. **Moderate** and **Major** effects are considered to be significant in the context of the EIA Regulations.

4.1.7 A summary of predicted landscape and visual effects is provided in Table 4.64 of the 2023 EIA Report LVIA. This is superseded by the assessment contained within this SI Report.

4.2 Clarification / Additional Information

4.2.1 As outlined in **Table 1.1**, no additional information was requested in relation to landscape and visual effects.

4.3 Updated Assessment of Effects

Construction Effects

4.3.1 Design changes, including the removal of Turbine 3, change to positions of Turbines 4, 6 and 9, and change in the location of borrow pits (see **SI Figure 3.1: Site Layout)**, are not anticipated to result in any change to the assessment of landscape and visual effects during construction. Effects will therefore remain as reported in Chapter 4 of the 2023 EIA Report.

Operational Effects

4.3.2 The assessment of landscape and visual effects follows the methodology set out in detail in Appendix 4.1 of the 2023 EIA Report LVIA and is based on the project description outlined in **Chapter 3** of this SI Report. Design modifications are set out in **Chapter 1** of this SI Report and were primarily made to address concerns raised by SEPA and Historic Environment Scotland (HES) on the Proposed Development. All design changes were reviewed against landscape and visual design objectives to ensure that they would not result in any significant effects over and above those identified in the 2023 EIA Report. This included consideration of the layout from key design viewpoints.

Effects on the Site

4.3.3 The removal of Turbine 3, change to positions of Turbines 4, 6 and 9, and reduction in tip height of turbines in the north of the Site (Turbines 1, 2, 4, 5 and 6) is not expected to change the assessment of effects on the Site. Effects remain as reported in Chapter 4 of the 2023 EIA Report (**Major and Significant**).

4.3.4 No changes have been made to the enhancement proposals as identified in **SI Figure 6.4** of the Outline Restoration and Enhancement Plan (OREP) for the Site as set out in **Appendix 6.1** of this SI Report. Habitat enhancement is likely to result in beneficial effects on the Site, but this does not change the conclusion with regard to overall effects.

Effects on Landscape Character

4.3.5 A comparative ZTV is provided in **SI Figure 4.5**; this illustrates the areas from which there will be a reduction in theoretical visibility, as compared with the ZTV for the Proposed Development.

4.3.6 The comparative ZTV illustrates that there will be some reductions in theoretical visibility of the Revised Proposed Development from parts of the study area. The most notable reductions will be across the farmed plateau to the north of the Lammermuir Hills, where the Lammermuir ridge will provide further screening. There will be a reduction in theoretical visibility from parts of the Upland Fringes – Lothians Landscape Character Type (LCT) (269), Lowland River Valleys – Lothians LCT (270) and Lowland Farmed Plain – Lothians LCT (275). Elsewhere in the study area there will be small reductions in theoretical visibility from lower-lying valleys and north-facing slopes.

4.3.7 The majority of the Site is within the Dissected Plateau Moorland LCT (90). The removal of Turbine 3 (including associated hardstanding and access track) will slightly reduce direct effects on this LCT. The magnitude of change will remain high within the Site, reducing to medium within approximately 5km. The effect will remain **Major and Significant** within the Site, reducing to **Moderate and Significant** within approximately 5km. This is the same as reported in Chapter 4 of the 2023 EIA Report.

[6] The Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

4.3.8 The removal of Turbine 3, change to positions of Turbines 4, 6 and 9, and reduction in tip height of turbines in the north of the Site (Turbines 1, 2, 4, 5 and 6) is not expected to change the assessment of effects on other LCTs, although there will be some reductions in theoretical visibility as described above. Effects remain as reported in Chapter 4 of the 2023 EIA Report.

Effects on Views and Visual Amenity

4.3.9 Wirelines illustrating the Revised Proposed Development are provided in **SI Figures 4.13.1 to 4.13.24**. These wirelines illustrate a 90° horizontal field of view and also show cumulative wind farms within 45 km. The wirelines were generated using a combination of OS5 and OS50 terrain data.

4.3.10 Updated photomontages and 360° cumulative wirelines are provided from three viewpoints. Photomontages are illustrated at 53.5° horizontal field of view and have been undertaken in accordance with NatureScot guidance[7]. The following viewpoints have been selected as they best illustrate the design changes as well as changes to the cumulative baseline:

- Viewpoint 1: Twin Law Cairns (**SI Figure 4.10a-f**);
- Viewpoint 6: Spartleton Hill (**SI Figure 4.11a-f**); and
- Viewpoint 9: Dirrington Great Law (**SI Figure 4.12a-f**).

4.3.11 **Table 4.1** below provides a summary of the effects detailed in the 2023 EIA Report LVIA for each of the viewpoints, with an updated assessment for the Revised Proposed Development as presented in this SI Report. Brief commentary on the design changes is provided for each of the viewpoints. Significant effects are highlighted in **bold**.

Table 4.1 Comparison of Predicted Visual Effects

Receptor / Figure	2023 EIA Report	2024 SI Report
Operational Effects on Views and Visual Amenity		
Viewpoint 1: Twin Law Cairns, Southern Upland Way See **SI Figures 4.10a-f and 4.13.1**.	**Major and Significant**	The removal of Turbine 3 will reduce the horizontal spread of turbines across the plateau hills. The change to the position of turbines 4 and 6, and reduction in tip and hub height of turbines 1, 2, 4, 5 and 6 will be perceptible. Turbines in the north of the Site will sit lower on the horizon. The scale difference between turbines in the north and south of the Site will be noticeable. There will be no change to the number of nacelle lights visible. The magnitude of change will remain high, resulting in a **Major and Significant** effect.
Viewpoint 2: Nun Rig, Southern Upland Way See **SI Figure 4.13.2**.	**Major and Significant**	Visibility of the blades of Turbine 3 will be removed. Turbines 1, 2, 4, 5 and 6 in the north of the Site will sit lower on the horizon, reducing the number of turbines visible from 15 to 12. There will be a reduction in the number of nacelle lights visible, from six to five. The magnitude of change will remain high, resulting in a **Major and Significant** effect.
Viewpoint 3: Minor road near Wanside Rig junction See **SI Figure 4.13.3**.	**Moderate and Significant**	The removal of Turbine 3 will reduce the horizontal spread of turbines across the plateau hills. The change to the position of Turbines 4 and 6, and reduction in tip and hub height of Turbines 1, 2, 4, 5 and 6 will be perceptible. Turbines in the north of the Site will sit closer to the horizon. The scale difference between turbines in the north and south of the Site will be reduced from this direction of view. There will be no change to the number of nacelle lights visible. The magnitude of change will remain high, resulting in a **Moderate and Significant** effect.

[7] Scottish Natural Heritage (2017) Visual Representation of Wind Farms Guidance. Version 2.2.

Receptor / Figure	2023 EIA Report	2024 SI Report
Operational Effects on Views and Visual Amenity		
Viewpoint 4: Watch Water Reservoir, Southern Upland Way See **SI Figure 4.13.4**.	**Moderate and Significant**	Visibility of the blades of Turbine 3 will be removed. There will be no change to the number of nacelle lights visible. The magnitude of change will remain medium, resulting in a **Moderate and Significant** effect.
Viewpoint 5: Minor road near Wrunk Law See **SI Figure 4.13.5**.	**Moderate and Significant**	The removal of Turbine 3 will reduce stacking with Turbine 1 in the north of the Site. The reduction in height of Turbines 1, 2, 4, 5 and 6 will lessen the difference in perceived scale between the Revised Proposed Development and Fallago Rig. There will be no change to the number of nacelle lights visible. The magnitude of change will remain medium, resulting in a **Moderate and Significant** effect.
Viewpoint 6: Spartleton Hill See **SI Figures 4.11a-f and 4.13.6**.	**Moderate and Significant**	The removal of Turbine 3 will reduce stacking with Turbine 10 in the centre of the Site. Turbines in the north of the Site will sit closer to the horizon. The reduction in height of Turbines 1, 2, 4, 5 and 6 will lessen the difference in perceived scale between the Revised Proposed Development and Fallago Rig where the wind farms overlap. There will be no change to the number of nacelle lights visible. The magnitude of change will remain medium, resulting in a **Moderate and Significant** effect.
Viewpoint 7: B6456 Westruther See **SI Figure 4.13.7**.	Minor and Not Significant	Visibility of the blades of Turbines 3, 4 and 6 will be removed, however this change will be barely perceptible due to intervening vegetation. There will be no change to the number of nacelle lights visible. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 8: B6456 near Bedshiel See **SI Figure 4.13.8**.	**Moderate and Significant**	The removal of Turbine 3 will reduce the horizontal spread of turbines. Turbines 1, 2, 4, 5 and 6 in the north of the Site will sit lower on the horizon, reducing the number of hubs visible from 14 to 10. There will be a reduction in the number of nacelle lights visible, from seven to four. The magnitude of change will remain medium, resulting in a **Moderate and Significant** effect.
Viewpoint 9: Dirrington Great Law See **SI Figures 4.12a-f and 4.13.9**.	**Moderate and Significant**	The removal of Turbine 3 will slightly reduce the horizontal spread of turbines across the plateau hills. Turbines in the north of the Site will sit closer to the horizon. There will be no change to the number of nacelle lights visible. The magnitude of change will remain medium-high, resulting in a **Moderate and Significant** effect.
Viewpoint 10: Lammer Law See **SI Figure 4.13.10**.	Minor and Not Significant	Visibility of Turbine 3 will be removed. Turbines in the north of the Site will sit closer to the horizon, behind the turbines of Fallago Rig. This will lessen the difference in perceived scale between the Revised Proposed Development and Fallago Rig. There will be no change to the number of nacelle lights visible. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 11: Edgarhope Wood, Southern Upland Way See **SI Figure 4.13.11**.	**Moderate and Significant**	Turbines 1, 2, 4, 5 and 6 in the north of the Site will sit lower on the horizon, reducing the number of hubs visible from 15 to 13. There will be no change to the number of nacelle lights visible.

Receptor / Figure	2023 EIA Report	2024 SI Report
Operational Effects on Views and Visual Amenity		
		The magnitude of change will remain medium, resulting in a **Moderate and Significant** effect.
Viewpoint 12: Minor road near Hen Law See **SI Figure 4.13.12**.	Minor and Not Significant	The removal of Turbine 3 will slightly reduce the horizontal spread of turbines across the plateau hills. Turbines in the north of the Site will sit closer to the horizon, in front of the turbines of Fallago Rig. This will lessen the difference in perceived scale between the Revised Proposed Development and Fallago Rig. There will be no change to the number of nacelle lights visible. The magnitude of change will remain medium, resulting in a Minor and Not Significant effect.
Viewpoint 13: A6015 near Greenlaw See **SI Figure 4.13.13**.	Minor and Not Significant	The removal of Turbine 3 will slightly reduce the horizontal spread of turbines across the plateau hills. Turbines in the north of the Site will sit closer to the horizon, reducing the number of hubs visible from 15 to 12. There will be a reduction in the number of nacelle lights visible, from seven to six. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 14: B6362 above Lauder See **SI Figure 4.13.14**.	Minor and Not Significant	The removal of Turbine 3 will create a gap between turbines in the northern and southern parts of the Site. Turbines in the north of the Site will sit closer to the horizon, reducing the number of hubs visible from 12 to 10. There will be a reduction in the number of nacelle lights visible, from six to four. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 15: Traprain Law See **SI Figure 4.13.15**.	Minor and Not Significant	The removal of Turbine 3 will slightly reduce the horizontal spread of turbines. Turbines in the north of the Site will sit closer to the horizon, reducing the number of hubs visible from 12 to 10. There will be a reduction in the number of nacelle lights visible, from six to five. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 16: Park Lane, Haddington See **SI Figure 4.13.16**.	Negligible and Not Significant	The design changes will result in a reduction in the number of turbine blades visible above the horizon from 5 to 3. There will be no change to the visibility of nacelle lights (none are visible). The magnitude of change will remain barely perceptible, resulting in a Negligible and Not Significant effect.
Viewpoint 17: Barney Hill, Garleton Hills See **SI Figure 4.13.17**.	Minor and Not Significant	The removal of Turbine 3 will slightly reduce the horizontal spread of turbines. Turbines in the north of the Site will sit closer to the horizon, reducing the number of hubs visible from 5 to 2. There will be a reduction in the number of nacelle lights visible, from two to one. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 18: A6112 near Fawcett Wood See **SI Figure 4.13.18**.	Minor and Not Significant	Turbines 1, 2, 4, 5 and 6 in the north of the Site will sit lower on the horizon, reducing the number of hubs visible from 6 to 3. There will be a reduction in the number of nacelle lights visible, from three to two. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.

Receptor / Figure	2023 EIA Report	2024 SI Report
Operational Effects on Views and Visual Amenity		
Viewpoint 19: A697 near Coldstream See **SI Figure 4.13.19**.	Minor and Not Significant	The design changes will be barely perceptible due to distance (approximately 23km). There will be a reduction in the number of nacelle lights visible, from six to five. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 20: B6371 near Tranent See **SI Figure 4.13.20**.	Negligible and Not Significant	The design changes will be barely perceptible due to distance (approximately 22km) and the intervening landform. There will be no change to the visibility of nacelle lights (none are visible). The magnitude of change will remain barely perceptible, resulting in a Negligible and Not Significant effect.
Viewpoint 21: Eildon North Hill See **SI Figure 4.13.21**.	Minor and Not Significant	The design changes will be barely perceptible due to distance (approximately 24km). There will be no change to the number of nacelle lights visible. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 22: North Berwick Law See **SI Figure 4.13.22**.	Minor and Not Significant	The design changes will be barely perceptible due to distance (approximately 24km). There will be a reduction in the number of nacelle lights visible, from seven to six. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 23: A198 near Dirleton See **SI Figure 4.13.23**.	Minor and Not Significant	The design changes will be barely perceptible due to distance (approximately 25km) and the intervening landform. There will be a reduction in the number of nacelle lights visible, from three to one. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.
Viewpoint 24: Torfichen Hill See **SI Figure 4.13.24**.	Minor and Not Significant	The design changes will be barely perceptible due to distance (approximately 26km). There will be a reduction in the number of nacelle lights visible, from seven to six. The magnitude of change will remain low, resulting in a Minor and Not Significant effect.

Effects on Settlements

4.3.12 The settlements of Westruther, Longformacus, Lauder, Gordon and Nether Blainslie were considered within the 2023 EIA Report. No visual receptors within these settlements were judged to experience significant effects arising from the Proposed Development. The design changes include the removal of Turbine 3 and reduction in tip heights of turbines in the north of the Site, which will reduce theoretical visibility from some parts of the study area as shown in **SI Figure 4.5**. There will be no change to theoretical visibility from Westruther, Gordon or Nether Blainslie. There will be a very small reduction in theoretical visibility from the fringes of Longformacus and Lauder, however this will not change the assessment of effects. Effects on settlements are therefore as reported in Chapter 4 of the 2023 EIA Report (all Minor and Not Significant).

Effects on Routes

4.3.13 In Chapter 4 of the 2023 EIA Report significant effects were identified from parts of the Minor Road via Longformacus, Southern Upland Way and Core Paths / Rights of Way within 5km. As shown in the comparative ZTV in **SI Figure 4.5** there will be no, or very limited changes to theoretical visibility from the Southern Upland Way. From the Minor Road via Longformacus and Core Paths within 5km there will be a reduction in theoretical visibility from

small parts of the routes, particularly north and east of the Site. These reductions in theoretical visibility will not change the assessment of effects. Effects on routes are therefore as reported in Chapter 4 of the 2023 EIA Report.

Effects on Designated Landscapes

4.3.14 The Site is located within the Lammermuir Hills Special Landscape Area (SLA). Chapter 4 of the 2023 EIA Report identified significant effects on landscape and visual receptors within the Lammermuir Hills SLA, as well as effects on some of its special qualities. This was not considered to affect the integrity of the SLA, in part because of the proximity of Fallago Rig.

4.3.15 The removal of Turbine 3 (including associated hardstanding and access track) will slightly reduce direct effects on the SLA. As demonstrated by the comparative ZTV in **SI Figure 4.5**, there will be a slight reduction in theoretical visibility from small parts of the SLA including along some of the minor tributary valleys which dissect the plateau. As set out in the sections above, no change to the assessment of landscape and visual effects is expected. Therefore, effects on the Lammermuir Hills SLA remain as reported in Chapter 4 of the 2023 EIA Report.

Effects on Residential Visual Amenity

4.3.16 The Residential Visual Amenity Assessment (RVAA) in Appendix 4.2 of the 2023 EIA Report concluded that, although several properties had the potential to experience a significant visual effect, none of these would be subject to effects on residential visual amenity which were judged to breach the Residential Visual Amenity Threshold described in LI TGN 2/19[8].

4.3.17 The modifications resulting in the Revised Proposed Development, including the removal of Turbine 3 and reduction in tip heights of turbines (Turbines 1, 2, 4, 5 and 6) in the north of the Site, will reduce theoretical visibility from the closest residential receptors. There will no longer be theoretical visibility of the Revised Proposed Development from Kilpallet due to the removal of Turbine 3, and therefore the magnitude of change will reduce from low to none. From other properties the magnitude of change will remain the same as identified in the 2023 EIA Report. The residential visual amenity threshold will not be breached at any property for the Revised Proposed Development.

Cumulative Effects

4.3.18 The following sections provide an updated cumulative assessment for landscape and visual receptors. Significant effects are highlighted in **bold**.

4.3.19 The design modifications described in **Chapter 3** of this SI Report will have a barely perceptible impact on the cumulative relationship with other wind farms. The updated assessment therefore focuses on the changes to the cumulative baseline as described below.

Changes to Cumulative Baseline

4.3.20 Since submission of the Section 36 application for the Proposed Development in April 2023[9], there have been some changes to the cumulative baseline situation considered in Chapter 4 of the 2023 EIA Report. The changes to the cumulative baseline are summarised in **Table 4.2** below and cumulative wind farms within 45km are shown on **SI Figure 4.3**. The cumulative cut-off date for this SI was April 2024. This assessment focuses on schemes within approximately 20km of the Revised Proposed Development, where most cumulative interactions are likely to occur.

Table 4.2 Changes to Other Wind Farm Developments (within 20km)

Name	Status (2023 EIA Report)	Status (April 2024)	Number of Wind Turbines	Blade Tip Height (m)	Distance (km)[10]
Longcroft	Design / Scoping	Application	19 (reduced from 24 at Scoping)	220	2.5

[8] Landscape Institute (2019) Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19

[9] A cut-off date of 21 February 2023 was applied for the inclusion of developments within the cumulative assessment in the LVIA.
[10] Approximate distance between the outermost turbines of the Revised Proposed Development and other wind farms.

Name	Status (2023 EIA Report)	Status (April 2024)	Number of Wind Turbines	Blade Tip Height (m)	Distance (km)[10]
Newlands Hill	Design / Scoping	Application	17	200	3.7
Wedderlie Farm	Design / Scoping	Withdrawn	5	149.9	3.8
Ditcher Law (formerly Back Burn)	Design / Scoping	Application	9 (reduced from 15 at Scoping)	200	8.2
Lees Hill	Design / Scoping	Application	6 (reduced from 7 at Scoping)	200	10.5
Blackburn	Not considered	Application (consented by SBC in late April 2024)	4	149.9	16.2

4.3.21 Newlands Hill Wind Farm was considered under Scenario 2 (operational, consented and proposed schemes) in Chapter 4 of the 2023 EIA Report (paragraphs 4.71 to 4.76). Although Newlands Hill was at scoping stage at the time of the application for the Proposed Development, it was included in the assessment due to the greater certainty associated with its layout than other schemes at scoping stage. Longcroft Wind Farm, Wedderlie Farm Wind Farm, Ditcher Law Wind Farm (formerly Back Burn) and Lees Hill Energy Park were considered in the 2023 EIA Report Appendix 4.4: Consideration of Scoping Stage Sites, but not in Chapter 4 of the 2023 EIA Report.

4.3.22 Blackburn was not considered in the 2023 EIA Report as it was still at scoping stage when the CLVIA for the Proposed Development was undertaken, and only scoping stage wind farms in proximity to the Proposed Development were considered. An application was submitted to Scottish Borders Council in July 2023 for four turbines at 149.9m height to tip, on land immediately to the north of the operational Quixwood Wind Farm. It was consented by Scottish Borders Council in April 2024 after the cumulative cut-off date for Dunside SI assessment.

4.3.23 There has been no change to the status of consented wind farms within 20km, therefore the assessment focuses on cumulative Scenario 2 only (operational, under construction, consented and at application wind farms). Effects during Scenario 1 are as reported in Chapter 4 of the 2023 EIA Report.

Cumulative Effects on Landscape Character

4.3.24 An updated cumulative ZTV for scenario 2 is provided in **SI Figure 4.4**. The cumulative ZTV illustrates that there will be widespread theoretical visibility of the Revised Proposed Development and other existing, consented and proposed wind farms within 20km from across the Lammermuir Hills and surrounding lowlands. The Revised Proposed Development will introduce theoretical visibility to very limited parts of the study area and mainly within 5km of the Site, including along the Dye Water and Watch Water valleys and their tributary valleys.

Dissected Plateau Moorland LCT

4.3.25 The Site is within the Dissected Plateau Moorland LCT (90). In Chapter 4 of the 2023 EIA Report effects during Scenario 2 were identified as being **Major and Significant** within the Site, and **Moderate and Significant** within 5km.

4.3.26 Longcroft Wind Farm (at application) will be introduced into the Plateau Moorland LCT, to the south-west of the Site. Newlands Hill (at application) will be located in the adjacent Plateau Moorland – Lothians LCT to the north. Ditcher Law Wind Farm (at application) will be located in the adjacent Plateau Grassland – Borders LCT to the west, between the Dun Law Group and Longcroft. The combined effect will narrow the gap between the Dun Law Group and Fallago Rig turbines. As illustrated by **SI Figure 4.4**, there will be visibility of both the Revised Proposed Development and other operational, consented and proposed developments from elevated parts of the Dissected

Plateau Moorland LCT. Although this LCT is already influenced by wind farms, both within and outside of the LCT, the above changes will increase the influence and intensity of wind farm development across the western Lammermuir Hills, narrowing gaps between the Dun Law Group and wind farms in the centre of the Lammermuir plateau. The addition of the Revised Proposed Development, in the context of this potential future baseline, will intensify the effect of wind farm development in the central part of the LCT, reducing the gap between existing and proposed wind farms.

4.3.27 Effects under Scenario 2 resulting from the addition of the Revised Proposed Development will be the same as the assessment under the existing baseline in the 2023 EIA Report (the 'primary assessment') (**Major and Significant** within the Site, reducing to **Moderate and Significant** within 5km). The combined effect of all existing and proposed wind farms is also likely to remain as significant up to the southern and western edges of the LCT.

Upland Fringe Moorland with Hills LCT

4.3.28 Lees Hill Energy Park (at application) will be partially located in the east of the Upland Fringe Moorland with Hills LCT (105), on the boundary with the neighbouring Upland Fringe with Prominent Hills LCT (102). Lees Hill Energy Park will be seen in combined easterly views with the operational Black Hill Wind Farm. In views north-west, the Revised Proposed Development will appear in successive views with Lees Hill Energy Park. In the distance to the west, Longcroft Wind Farm (at application) will appear to extend the influence of Fallago Rig towards the Dun Law Group, and with the addition of Ditcher Law Wind Farm (at application) will continue to intensify the influence of wind farms in north-westerly views from elevated landforms (particularly Dirrington Great Law and Dirrington Little Law). With the addition of Lees Hill Energy Park to the east, there will be an increase in wind farm development in several directions, bringing wind farm development closer in views from the LCT. However, given the widespread visibility of wind farms in outward views from the LCT, and given the distance, the addition of the Revised Proposed Development, in the context of this potential future baseline, will not alter the key characteristics of the LCT.

4.3.29 Effects under Scenario 2 will be the same as the assessment under the existing baseline in the 2023 EIA Report (the 'primary assessment' (**Moderate and Significant** within around 7km, reducing to Minor and Not Significant beyond 7km).

Plateau Moorland – Lothians LCT

4.3.30 Newlands Hill Wind Farm (at application) will be located within the centre of the Plateau Moorland – Lothians LCT (266), on the plateau to the north of the Revised Proposed Development. Longcroft Wind Farm (at application) will be seen to the south of the operational Fallago Rig Wind Farm. Further south, Lees Hill Energy Park (at application) will be located within the Upland Fringe Moorland with Hills LCT (105).

4.3.31 In southerly views from this LCT, the Revised Proposed Development will be seen in combined views with other proposed wind farms, particularly with the proposed Newlands Hill and Longcroft Wind Farms. The Revised Proposed Development will be seen to extend the influence of the operational Fallago Rig Wind Farm, and will be visible from elevated areas of the LCT, particularly from along Spartleton Edge and the upland moors immediately adjacent to the north. To the south, Lees Hill Energy Park (at application) will be seen to close the visual gap between the operational Black Hill Wind Farm and the Revised Proposed Development, and will extend the influence of wind farm development along the horizon to the south.

4.3.32 Given that wind farms within and in proximity to the LCT are characteristic, the changes described will not notably alter the existing baseline. Effects under Scenario 2 will therefore be the same as the assessment under the existing baseline in the 2023 EIA Report (the 'primary assessment' **Moderate and Significant** within 5km, reducing to Minor and Not Significant beyond 5km).

Cumulative Effects on Views and Visual Amenity

4.3.33 **Table 4.3** below provides an updated cumulative assessment for each of the LVIA viewpoints, with reference to the cumulative wirelines in **SI Figures 4.13.1 to 4.13.24**, and **SI Figures 4.10a-f, 4.11a-f and 4.12 a-f**. Significant effects are highlighted in **bold**.

Table 4.3 Comparison of Cumulative Effects from Viewpoints

Receptor / Figure	2023 EIA Report (Scenario 2)	2024 SI Report (Scenario 2)
Viewpoint 1: Twin Law Cairns, Southern Upland Way See **SI Figures 4.10a-f and 4.13.1**.	**Major and Significant**	Newlands Hill Wind Farm (at application) would be visible on the skyline behind the Site. The turbines would appear as an extension to Fallago Rig (operational) from this viewpoint, albeit with a small gap, and the turbines would appear similar in scale. Longcroft Wind Farm (at application) would be visible on the skyline between the Dun Law Group (operational) and Fallago Rig (operational). Ditcher Law Wind Farm would be visible on the skyline to the west, in front of Dun Law Phase 1 (operational). The Revised Proposed Development would appear in front of Fallago Rig and Newlands Hill, within the same horizontal field of view. The Revised Proposed Development would be seen in the same field of view as Fallago Rig and Newlands Hill, but would be closer to the viewpoint and therefore more prominent. Effects under Scenario 2 would be **Major and Significant**.
Viewpoint 2: Nun Rig, Southern Upland Way See **SI Figure 4.13.2**.	**Major and significant**	Under Scenario 2, no proposed wind farms would be visible. As there would be no changes to the existing baseline, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (**Major and Significant**).
Viewpoint 3: Minor road near Wanside Rig junction See **SI Figure 4.13.3**.	**Major and Significant**	Newlands Hill Wind Farm (at application) would appear immediately adjacent to the viewpoint, with the turbines forming prominent features on the skyline above the viewer to the north and west. In views towards the Site, Longcroft Wind Farm (at application) would appear just over the horizon, seen beyond the turbines of Fallago Rig and largely screened by the intervening landform. The blades of Lees Hill Energy Park (at application) would be visible on the skyline to the south, with the majority of the wind farm screened by the landform. Wind farms would form a notable feature in close views to the north and west, medium distance views to the south and south-west, and more distant views to the east. Therefore, a **Major and Significant** effect is anticipated under Scenario 2.
Viewpoint 4: Watch Water Reservoir, Southern Upland Way See **SI Figure 4.13.4**.	**Moderate and Significant**	Under Scenario 2, no proposed wind farms would be visible. As there would be no changes to the existing baseline, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (**Moderate and Significant**).
Viewpoint 5: Minor road near Wrunk Law See **SI Figure 4.13.5**.	**Moderate and Significant**	Both Longcroft Wind Farm (at application) and Ditcher Law Wind Farm (at application) would be visible in the distance, seen beyond and to the side of the turbines of Fallago Rig (operational). The turbines would appear of similar size and scale to the existing Fallago Rig turbines. The Revised Proposed Development would appear partially in front of Fallago Rig, Longcroft and Ditcher Law in westerly views, bringing turbines closer to the viewer. As the introduction of Longcroft and Ditcher Law would not notably alter the existing baseline, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (**Moderate and Significant**).
Viewpoint 6: Spartleton Hill See **SI Figures 4.11a-f and 4.13.6**.	**Moderate and Significant**	Longcroft (at application) would appear along the horizon, seen in combined and successive views with the Revised Proposed Development. Longcroft would appear as part of the existing Fallago Rig Wind Farm, appearing of similar scale and within its horizontal extents. Newlands Hill would be visible in close views to the south-west. It would be seen in combination with the Revised Proposed Development and Fallago Rig, in views to the south-east, but would

Receptor / Figure	2023 EIA Report (Scenario 2)	2024 SI Report (Scenario 2)
		appear as a separate wind farm. The Revised Proposed Development would extend the influence of wind farms to the south-west. Given that the Proposed Development would be seen in the same direction of view as existing and proposed wind farms, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (**Moderate and Significant**).
Viewpoint 7 See **SI Figure TA 4.13.7**.	Minor and Not Significant	The blades of Longcroft (at application) would be perceptible on the skyline but are likely to be screened by vegetation. Effects would remain Minor and Not Significant.
Viewpoint 8: B6456 near Bedshiel See **SI Figure TA 4.13.8**.	**Moderate and Significant**	The blades of Longcroft would be theoretically visible just over the horizon to the north-west, although in practice would be largely screened by landform and vegetation. The Revised Proposed Development would be seen on the horizon to the north, forming a separate wind farm and extending the influence of wind farms west across the Lammermuir plateau. As the introduction of Longcroft would not notably alter the existing baseline, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (**Moderate and Significant**).
Viewpoint 9: Dirrington Great Law See **SI Figures 4.12a-f and 4.13.9**.	**Moderate and Significant**	Newlands Hill (at application) would be visible on the skyline to the north-west. Newlands Hill will be seen in combination with the Revised Proposed Development and Fallago Rig, but would form a standalone wind farm, separate from other groups. Given the distance to Newlands Hill and the presence of other wind farms in views to the north-west, there would not be a notable change to the existing baseline. Further west, Ditcher Law and Longcroft (both at application) would appear over the skyline, beyond the Revised Proposed Development. They would appear to extend the influence of wind farm development to the edge of the visible plateau in the north-west. In the distance to the west and south-west, Greystone Knowe and Scawd Law (both at application) would form distant features on the skyline, appearing to extend the influence of wind farm development across successive upland plateaux to the west. In this scenario, wind farm development would be seen to extend across the skyline in multiple successive views. Effects under this scenario will therefore **increase** from the primary assessment described in the 2023 EIA Report and will be considered **Major and Significant**.
Viewpoint 10: Lammer Law See **SI Figure 4.13.10**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the skyline to the east, in front of the existing Crystal Rig / Aikengall Group. Longcroft would be visible to the west of Fallago Rig, and would be closer to the viewpoint and therefore more prominent. The Revised Proposed Development would be visible to the south-east of Fallago Rig, forming part of a larger group with Fallago Rig and Longcroft. The effect would be Minor and Not Significant.
Viewpoint 11: Edgarhope Wood, Southern Upland Way See **SI Figure 4.13.11**.	**Moderate and Significant**	Longcroft (at application) would appear to the south-west of Fallago Rig (operational), appearing larger in scale and extending the presence of turbines west across the Lammermuir Hills. The Revised Proposed Development would appear immediately adjacent to the south of Fallago Rig, and together with the turbines at Longcroft would form a continuous stretch of turbines across a large section of the horizon in views from this location. Additionally, the introduction of the proposed turbines would narrow the gap between Fallago Rig and Black Hill (operational). Lees Hill Energy Park (at application)

Receptor / Figure	2023 EIA Report (Scenario 2)	2024 SI Report (Scenario 2)
		would be visible on the skyline near to Black Hill but forming a separate development. As wind farms would occupy much of the view to the north-east, the addition of the Revised Proposed Development would result in a **Moderate and Significant** effect.
Viewpoint 12: Minor road near Hen Law See **SI Figure 4.13.12**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the distant skyline to the north-west. It would be seen in combination with the Revised Proposed Development and Fallago Rig, but would form a standalone wind farm which is separate from other groups. The blades of Longcroft (at application) would be perceptible further west, with the wind farm largely screened by the intervening landform. Given that Newlands Hill would be seen in successive views with existing wind farms and on the distant skyline, there would not be a notable change to the existing baseline. Effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (Minor and Not Significant).
Viewpoint 13: A6015 near Greenlaw See **SI Figure 4.13.13**.	Minor and Not Significant	Longcroft (at application) would be visible on the skyline to the north-west of the viewpoint, with Ditcher Law (at application) visible beyond. There would be a small gap between Longcroft and Fallago Rig. The Revised Proposed Development would be visible in front of Fallago Rig, in the same horizontal field of view but closer and more prominent. The effect will be Minor and Not Significant.
Viewpoint 14: B6362 above Lauder See **SI Figure 4.13.14**.	Minor and Not Significant	Longcroft (at application) would be visible on the skyline to the north of the viewpoint. The turbines of Longcroft would appear large in scale in comparison with the underlying landform and the visible Fallago Rig turbines to the east. The Revised Proposed Development would extend the group formed by Longcroft and Fallago Rig along the skyline to the south-east. The addition of the Revised Proposed Development will result in a Minor and Not Significant effect.
Viewpoint 15: Traprain Law See **SI Figure 4.13.15**.	Negligible and Not Significant	Newlands Hill (at application) would be visible on the skyline formed by the Lammermuir Hills, in front of the Site and the adjacent Fallago Rig. The turbines of Newlands Hill would appear large in scale in comparison with the underlying landform and the visible Fallago Rig turbines. Longcroft (at application) would be perceptible to the west of Fallago Rig, also set back behind enclosing hills and mostly screened by the landform. Given that the Revised Proposed Development would be visible in the same field of view and behind Newlands Hill, the effect would be Negligible and Not Significant.
Viewpoint 16: Park Lane, Haddington See **SI Figure 4.13.16**.	Negligible and Not Significant	Newlands Hill (at application) would be visible on the skyline formed by the Lammermuir Hills, to the north of the Site and Fallago Rig. The turbines of Newlands Hill would appear large in scale in comparison with the underlying landform. Longcroft (at application) would be visible to the west of Fallago Rig, also set back behind enclosing hills and mostly screened by the landform. Ditcher Law (at application) would be visible to the west, forming an extension to the existing Dun Law Group and mostly screened by the intervening landform. Given the prominence of the Newlands Hill turbines and limited visibility of the Revised Proposed Development, the effect will be Negligible and Not Significant.
Viewpoint 17: Barney Hill, Garleton Hills See **SI Figure 4.13.17**.	Negligible and Not Significant	Newlands Hill (at application) would be visible on the skyline formed by the Lammermuir Hills, to the north of the Site. The turbines of Newlands Hill would appear large in scale in comparison with the visible Fallago Rig turbines, which are set back from the enclosing ridgeline. Longcroft (at application) would be visible to the west of Fallago Rig, also set back behind enclosing hills. Ditcher Law (at application) would be visible to the west, forming an extension to the

Receptor / Figure	2023 EIA Report (Scenario 2)	2024 SI Report (Scenario 2)
		existing Dun Law Group. Given the visibility of the Newlands Hill turbines and limited visibility of the Revised Proposed Development, partly in the same field of view as Fallago Rig, the effect will be Negligible and Not Significant.
Viewpoint 18: A6112 near Fawcett Wood See **SI Figure 4.13.18**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the distant skyline, behind the operational Quixwood Wind Farm which is in the middle distance. Blackburn (at application) would be seen as an extension to Quixwood. A small number of turbine blades of Longcroft (at application) would be perceptible beyond the Revised Proposed Development. Lees Hill Energy Park (at application) would be perceptible on the skyline further west, set back behind intervening hills. As there would be no notable changes to the existing baseline, effects under Scenario 2 would be the same as the primary assessment described in the 2023 EIA Report (Minor and Not Significant).
Viewpoint 19: A697 near Coldstream See **SI Figure 4.13.19**.	Minor and Not Significant	Longcroft (at application) would be visible on the skyline to the west of Fallago Rig, with Ditcher Law (at application) visible beyond it. Lees Hill Energy Park (at application) would be visible on the skyline further east, and closer to the viewpoint. The Revised Proposed Development would partially fill the gap between Longcroft and Lees Hill. Given the distance to the wind farms the effect would be Minor and Not Significant.
Viewpoint 20: B6371 near Tranent See **SI Figure 4.13.20**.	Negligible and Not Significant[11]	Newlands Hill (at application) would be visible on the distant skyline. The turbines of Newlands Hill would appear large in scale in comparison with the visible Fallago Rig turbines, which are set back from the enclosing ridgeline. Longcroft (at application) would be perceptible on the horizon to the west of Fallago Rig, with the intervening landform screening most of the wind farm. Ditcher Law (at application) would be visible in front of Keith Hill and Pogbie. Given the limited visibility of the Revised Proposed Development, which would occupy the same horizontal extents as Fallago Rig, the effect would be Negligible and Not Significant.
Viewpoint 21: Eildon North Hill See **SI Figure 4.13.21**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the distant skyline to the north. It would be seen in combination with the Revised Proposed Development and Fallago Rig Wind Farm, and would appear as an extension to Fallago Rig, appearing of similar size. Longcroft (at application) would be seen on the skyline to the west of Fallago Rig. Ditcher Law (at application) would be visible further west, forming an extension to the existing Dun Law Group. Lees Hill Energy Park (at application) and Blackburn (at application) would be visible either side of the operational Black Hill. Much of the horizon would be occupied by wind farms and the Revised Proposed Development would partially fill the gap between a Longcroft / Newlands Hill / Fallago Rig cluster and the Crystal Rig cluster. Given the distance to the wind farm groups the effect would be Minor and Not Significant.
Viewpoint 22: North Berwick Law See **SI Figure 4.13.22**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the distant skyline, alongside Fallago Rig. The turbines of Newlands Hill would appear large in scale in comparison with the operational Fallago Rig turbines, which are set back from the enclosing ridgeline. Longcroft (at application) would be visible on the skyline, alongside Fallago Rig and partially screening by the ridgeline. The Revised Proposed Development would be behind Newlands Hill, in the same field of

[11] This was erroneously stated as Minor and Not Significant in the summary table in Chapter 4 of the EIA Report

Receptor / Figure	2023 EIA Report (Scenario 2)	2024 SI Report (Scenario 2)
		view and partially screened by the intervening ridgeline. The effect would be Minor and Not Significant.
Viewpoint 23: A198 near Dirleton See **SI Figure 4.13.23**.	Minor and Not Significant	Newlands Hill (at application) would be visible on the distant skyline to the south. Newlands Hill would appear partly in front of the existing turbines at Fallago Rig and in comparison would appear large in scale, as well as against the underlying landform. Longcroft (at application) would be visible on the skyline, alongside Fallago Rig and partially screened by the ridgeline. Given the visibility of the Newlands Hill turbines and limited visibility of the Revised Proposed Development, the effect would be Negligible and Not Significant.
Viewpoint 24: Torfichen Hill See **SI Figure 4.13.24**.	Minor and Not Significant	A large number of existing and proposed wind farms would be visible to the east, in close to distant views. The Revised Proposed Development would be on the distant skyline alongside Fallago Rig and behind Longcroft (at application). Wull Muir (at application) would be visible in the middle distance, in front of the Revised Proposed Development. Newlands Hill (at application) would be visible on the distant skyline to the east. Given that other wind farms, including Longcroft, would be seen in front of the Revised Proposed Development, the effect would be Negligible and Not Significant.

Aviation Lighting Effects

4.3.34 For the Revised Proposed Development there will be nacelle lights on the hubs of seven turbines (Turbines 1, 2, 6, 8, 9, 14 and 15). This is the same as the aviation lighting layout in the 2023 EIA Report, with the exception of the light on Turbine 3 which has moved to Turbine 2. Additionally, the hub height of Turbines 1, 2 and 6 will be reduced, which has the potential to result in an increased maximum light intensity, resulting from reduced vertical angle (elevation angle) and a more direct line of sight towards nacelle lights, but may also result in increased screening by intervening landform and vegetation.

4.3.35 As in the 2023 EIA Report, this updated assessment is based on a 'maximum worst case scenario' of 2000 candela lighting, and a lower 200 candela lighting scenario which would be activated in clear meteorological conditions.

4.3.36 Aviation lighting and lighting intensity ZTVs are provided in **SI Figures 4.7 to 4.9**.

Effects on Landscape Character

4.3.37 As set out in Appendix 4.3: Aviation Lighting Assessment of the 2023 EIA Report, no significant effects were identified on landscape character or the key characteristics of the underlying landscape as a result of aviation lighting. As the number of lit turbines will be the same, with only a small change in the location of one light (moving from T3 to T2), no significant effects are anticipated for the Revised Proposed Development.

Effects on Designated Landscape

4.3.38 As set out in Appendix 4.3: Aviation Lighting Assessment of the 2023 EIA Report, no significant effects were identified on the special qualities of designated landscapes as a result of aviation lighting. As the number of lit turbines will be the same, with only a small change in the location of one light (moving from T3 to T2), no significant effects are anticipated for the Revised Proposed Development.

Effects on Views and Visual Amenity

4.3.39 The following table describes the number of nacelle lights theoretically visible from each of the LVIA viewpoints and their maximum perceived intensity accounting for vertical angle, with reference to the information contained within **SI Appendix 11.1: Wind Farm Aviation Lighting and Mitigation Report**. Aviation lighting intensity ZTVs are provided in **SI Figures 4.7 to 4.9**.

Table 4.4 Visibility of Lighting from Representative Assessment Viewpoints

Viewpoint	No. of nacelle lights theoretically visible [12]	Approximate distance to nearest lit turbine (km)	Maximum approximate lighting intensity accounting for vertical angle (candela)	
			Maximum reasonable worst case scenario	Maximum reasonable worst case scenario (during clear weather conditions)
Viewpoint 1: Twin Law Cairns, Southern Upland Way	7	1.9	1443	144
Viewpoint 2: Nun Rig, Southern Upland Way	5	2.9	576	58
Viewpoint 3: Minor road near Wanside Rig junction	7	4.0	1443	144
Viewpoint 4: Watch Water Reservoir, Southern Upland Way	2	4.4	208	21
Viewpoint 5: Minor road near Wrunk Law	7	6.0	757	76
Viewpoint 6: Spartleton Hill	7	6.7	1982	198
Viewpoint 7: B6456 Westruther	3	6.8	273	27
Viewpoint 8: B6456 near Bedshiel	4	7.9	484	48
Viewpoint 9: Dirrington Great Law	7	7.9	1443	144
Viewpoint 10: Lammer Law	7	8.0	2330	233
Viewpoint 11: Edgarhope Wood, Southern Upland Way	6	8.9	902	90
Viewpoint 12: Minor road near Hen Law	4	12.0	1087	109
Viewpoint 13: A6015 near Greenlaw	7	13.1	822	82
Viewpoint 14: B6362 above Lauder	4	13.6	902	90
Viewpoint 15: Traprain Law	4	14.6	822	82
Viewpoint 16: Park Lane, Haddington	0	N/A	N/A	N/A
Viewpoint 17: Barney Hill, Garleton Hills	2	18.2	902	90
Viewpoint 18: A6112 near Fawcett Wood	6	19.6	902	90

[12] The number of nacelle lights visible was calculated using OS50 terrain data, as set out in SI Appendix 11.1.

Viewpoint	No. of nacelle lights theoretically visible [12]	Approximate distance to nearest lit turbine (km)	Maximum approximate lighting intensity accounting for vertical angle (candela)	
			Maximum reasonable worst case scenario	Maximum reasonable worst case scenario (during clear weather conditions)
Viewpoint 19: A697 near Coldstream	4	21.1	757	76
Viewpoint 20: B6371 near Tranent	0	N/A	N/A	N/A
Viewpoint 21: Eildon North Hill	7	24.2	1852	185
Viewpoint 22: North Berwick Law	6	24.5	1087	109
Viewpoint 23: A198 near Dirleton	1	25.3	822	82
Viewpoint 24: Torfichen Hill	6	26.3	1982	198

4.3.40 Effects of aviation lighting on visual amenity were assessed in Appendix 4.3 of the 2023 EIA Report from the following viewpoints:

- Viewpoint 3: Minor road near Wanside Rig junction;
- Viewpoint 7: B6456 Westruther; and
- Viewpoint 12: Minor road near Hen Law.

4.3.41 As the number of lit turbines will be the same, with only a small change in the location of one light (moving from Turbine 3 to Turbine 2, the same viewpoints have been used in this SI Report. An updated assessment from these viewpoints is provided in **Table 4.5** below. Significant effects are highlighted in **bold**.

Table 4.5 Comparison of Aviation Lighting Effects

Viewpoint	2023 EIA Report	2024 SI Report – Assessment of Night-time Visual Effects	2024 SI Report – Assessment of Night-time Visual Effects under Cumulative Scenario 2
Viewpoint 3: Minor road near Wanside Rig junction	**Moderate and Significant** (2000 candela) Minor and Not Significant (candela at 10%)	As set out in Appendix 4.3 of the 2023 EIA Report, the maximum intensity of light emitted due to the viewing angle from this location was 1087 candela, reducing to 108 candela during clear weather conditions. Up to seven nacelle lights within the Proposed Development were theoretically visible at a distance of approximately 4 km between the viewpoint and the nearest lit turbine. For the Revised Proposed Development, the number of visible nacelle lights, approximate distance between the viewpoint and nearest lit turbine, and the maximum intensity of light emitted due to the viewing angle will all remain consistent. Given the visibility of all seven nacelle lights, proximity and the lack of other	The nacelle lights of Newlands Hill (at application) would be perceptible in very close views to the north and west. To the south-west, nacelle lights of Longcroft (at application) would be visible beyond the Revised Proposed Development, at a distance of approximately 9 km. The addition of the Revised Proposed Development will introduce visibility of lighting on the skyline in views to the south, albeit further from the viewer than Newlands Hill. The nacelle lights on the turbines of Newlands Hill will be dominant in views, and those of the Revised Proposed Development and Longcroft will be seen behind them at distance. The scale of change will therefore be small, resulting in a Minor and Not Significant effect.

Viewpoint	2023 EIA Report	2024 SI Report – Assessment of Night-time Visual Effects	2024 SI Report – Assessment of Night-time Visual Effects under Cumulative Scenario 2
		artificial light sources, the scale of visual change at night will remain medium for the maximum candela situation. The level of effect will remain **Moderate and Significant** for road users at this viewpoint, reducing to Minor and Not Significant during the more likely situation for clear meteorological conditions.	This is the same as reported in the 2023 EIA Report.
Viewpoint 7: B6456 Westruther	Minor and Not Significant (2000 candela) Minor and Not Significant (candela at 10%)	As set out in Appendix 4.3 of the 2023 EIA Report, the maximum intensity of light emitted due to the viewing angle from this location was 274 candela, reducing to 27 candela during clear weather conditions. Up to three nacelle lights within the Proposed Development were theoretically visible at a distance of approximately 7 km between the viewpoint and the nearest lit turbine. For the Revised Proposed Development, the number of visible nacelle lights, approximate distance between the viewpoint and nearest lit turbine, and the maximum intensity of light emitted due to the viewing angle will all remain consistent. Given the limited visibility of up to three nacelle lights, other artificial light sources present in proximity to the viewpoint location, and occasional car headlights to the east and west, the scale of visual change at night will remain small for the maximum candela situation. The level of effect will remain Minor and Not Significant for road users and residential receptors at this viewpoint, and will remain Minor and Not Significant during the more likely situation for clear meteorological conditions.	No other consented or proposed wind farms are visible from this viewpoint location.
Viewpoint 12: Minor Road near Hen Law	Minor and Not Significant (2000 candela) Minor and Not Significant (candela at 10%)	As set out in Appendix 4.3 of the 2023 EIA Report, the maximum intensity of light emitted due to the viewing angle from this location was 822 candela, reducing to 82 candela during clear weather conditions. Up to four nacelle lights within the Proposed Development were theoretically visible at a distance of approximately 12 km between the viewpoint and the nearest lit turbine. For the Revised Proposed Development, the number of visible nacelle lights and approximate	The nacelle lights of Newlands Hill (at application) will be perceptible on the skyline in views north-west, at a distance of around 16 km. To the west, Longcroft (at application) will be visible beyond the Revised Proposed Development, at a distance of 16 km. At these distances, there will not be a noticeable change to the existing night-time baseline views, and effects will therefore remain the same as the primary assessment

Viewpoint	2023 EIA Report	2024 SI Report – Assessment of Night-time Visual Effects	2024 SI Report – Assessment of Night-time Visual Effects under Cumulative Scenario 2
		distance between the viewpoint and nearest lit turbine will remain consistent. However, the maximum intensity of light emitted due to the viewing angle will increase when compared to the Proposed Development. This is due to a reduction in the tip height of Turbine 6, which reduces the elevation angle from -1.2 to -0.9 (0.0 being an exactly horizontal direct line of view from viewpoint to nacelle light), and results in an increase in maximum intensity of light emitted from 822 candela to 1087 candela. However, given the limited visibility of up to four nacelle lights and the intervening distance, the scale of visual change at night will remain small for the maximum candela situation. The level of effect will remain Minor and Not Significant for road users at this viewpoint, and will remain Minor and Not Significant during the more likely situation for clear meteorological conditions.	described in the 2023 EIA Report (Minor and Not Significant).

Hub Height Scenarios

4.3.42 As for the 2023 EIA Report, the LVIA considers the 'reasonable worst case' scenario for the night-time assessment to be a candidate turbine with a taller hub, as there is the potential for greater visibility of lighting which is at nacelle height. A ZTV has been run to compare the 'day-time' scenario (with a maximum hub height of 130 m) and the 'night-time' scenario (with a maximum hub height of 139 m). This applies to turbines 7 to 15 in the south of the Site only. The comparative hub height ZTV in **SI Figure 4.6** illustrates that the 'night-time' scenario would increase theoretical visibility to very small parts of the study area, and mostly within areas to the south of the Site. This does not affect the findings of the assessment contained within this SI Report.

4.4 Summary of Changes to Significance of Effects

4.4.1 The Revised Proposed Development will result in a slight reduction in direct effects on the Site as well as some changes to the appearance of the Proposed Development from representative viewpoints. The magnitude of change and overall significance of effects (including cumulative effects) on landscape and visual receptors will remain the same as that assessed in the LVIA in the 2023 EIA Report.

4.4.2 The following changes to the level of cumulative landscape and visual effects were identified as a result of the change to the cumulative baseline. No change in the significance of effects was identified:

- At Viewpoint 9: Dirrington Great Law the effect will increase from Moderate and Significant (in the 2023 EIA Report) to Major and Significant. This is due to the extent of the skyline occupied by wind farms including the Revised Proposed Development.
- At Viewpoint 23: A198 near Dirleton the effect will reduce from Minor and Not Significant (in the 2023 EIA Report) to Negligible and Not Significant for the Revised Proposed Development. This is due to other wind farms being more noticeable in the view and the reduction in visibility of the Revised Proposed Development.
- At Viewpoint 24: Torfichen Hill the effect will reduce from Minor and Not Significant (in the 2023 EIA Report) to Negligible and Not Significant for the Revised Proposed Development. This is due to other wind farms being present in front of Dunside in the view.

4.5 Proposed Mitigation

4.5.1 As set out in Chapter 4 of the 2023 EIA Report, mitigation of landscape and visual effects was predominantly achieved through the design of the Proposed Development. As all mitigation for landscape and visual effects is embedded within the final design for the Revised Proposed Development, all effects identified in this chapter are residual effects.

4.5.2 As set out in **Appendix 11.1** of the 2023 EIA Report, a reduced lighting scheme was designed and agreed with the Civil Aviation Authority (CAA). The lighting scheme for the Revised Proposed Development is provided in **SI Appendix 11.1: Aviation Lighting Report**. **SI Appendix 11.1** also details proposed mitigation measures associated with aviation lighting.

4.5.3 Proposed landscape mitigation and habitat enhancement objectives are set out in **SI Appendix 6.1: Outline Restoration and Enhancement Plan (OREP)**.

5. Chapter 5

5.1 Cultural Heritage

Introduction

5.1.1 **Chapter 5: Cultural Heritage** of the 2023 EIA Report presents the findings of the cultural heritage assessment of the Proposed Development. This was supported by **Appendix 5.1: Historic Environment Assessment** of the 2023 EIA Report that set out the details of the cultural heritage assessment.

5.1.2 This chapter is accompanied by the following figures:

- **SI Figure 5.1: Location of Designated Heritage Assets within the Site and Cultural Heritage Visualisation Viewpoint Locations** (new SI figure)
- **SI Figure 5.2: In-combination view of the Mutiny Stones (SM361) from the east of Byrecleugh Burn (**replaces **Figure 5.5** of the 2023 EIA Report**)**
- **SI Figure 5.3 – In-combination view of the Mutiny Stones (SM361) from Byrecleugh Ridge** (replaces **Figure 5.6** of the 2023 EIA Report)
- **SI Figure 5.4 – In-combination view from the 'forecourt' of the Mutiny Stones (SM361)** (new SI figure)
- **SI Figure 5.5 – In-combination view from Pyatshaw Ridge, looking west-south-west along the axis of the Mutiny Stones (SM361)** (new SI figure)

5.1.3 The purpose of this chapter of the SI is to assess the potential effects of the Revised Proposed Development on heritage assets, resulting from the design modifications set out in **Chapter 3**.

5.2 Clarification / Additional Information

5.2.1 As outlined in **Table 1.1**, HES requested additional information in relation to the operational effects (direct effects due to setting change) to the Mutiny Stones (SM361), a Neolithic long cairn, including photomontages from additional viewpoints SICH04 and SICH05 (please refer **SI Figure 5.1**). Following a design workshop (see **Table 1.1** for details), the design modifications identified in **Chapter 3** were made to the Proposed Development to reduce the magnitude of change / level of impact to this designated heritage asset (See **Chapter 5** of the 2023 EIA Report for the full methodology and explanation of terminology).

5.3 Updated Assessment of Effects

Construction Effects (Direct Physical)

5.3.1 Direct physical effects to heritage assets remains as reported in **Chapter 5** and **Appendix 5.1** of the 2023 EIA Report.

5.3.2 No significant effects will occur as a consequence of construction activities.

Operational Effects (Direct Effects due to Setting Change)

5.3.3 With the exception of the Mutiny Stones (SM361; **high** importance), direct effects due to setting change to heritage assets remain as reported in **Chapter 5** and **Appendix 5.1** of the EIA Report.

5.3.4 The design modifications identified in **Chapter 3** of this SI Report have been undertaken to reduce the magnitude of change due to change in the setting of the Mutiny Stones.

5.3.5 The following assessment identifies direct effects due to setting change to the Mutiny Stones resulting from the Revised Proposed Development.

5.3.6 A baseline description of the Mutiny Stones, including a description of the cairn's current setting and how that setting contributes to its cultural significance, is provided in **Chapter 5** and **Appendix 5.1** of the 2023 EIA Report. Where required to inform the assessment, the contribution of setting to the cultural significance of the Mutiny Stones is identified.

5.3.7 The closest turbine of the Revised Proposed Development to the Mutiny Stones is Turbine 5, located approximately 1.2km to the north-west. Turbine 6 is located approximately 1.8km to the west of the cairn beyond Kersons Cleugh, and Turbine 8 will be located at the northern end of Greencleugh Ridge, approximately 1.4km across the upper Dye Water valley to the south-west of the Mutiny Stones. The most easterly of the turbines (Turbine 15) will be approximately 2.3km to the south of the cairn on the ridge between Upper Knowe and Dunside Hill.

5.3.8 The assumed approach to the Mutiny Stones is from the east via the Dye Water valley. Along the upper Dye Water valley is evidence of occupation and agricultural land management from the medieval period onwards. At Byrecleugh this includes Improvement Era field enclosures, the remains of a hunting lodge (Beater's Cottage, Byrecleugh; LB8348), modern bungalows, and large agricultural buildings. From Byrecleugh the intuitive approach to the Mutiny Stones is via the Byrcleugh Burn and the gently rising ridge to the west (the route taken by the existing light vehicle track). Accessing the cairn from the east via Pyatshaw Ridge requires ascending the eastern side of Byrcleugh Burn, which is considerably steeper and less attractive to those moving north on foot.

5.3.9 The deliberate positioning of the Mutiny Stones on the south-east facing slope of a natural bowl confines the cairn within this distinct topographical feature (refer to **SI Figure 5.5**). As well as defining and confining the cairn within the landscape, this setting enables a sense of 'reveal', experienced when approaching the cairn and upon entering the natural bowl from the south from Byrecleugh.

5.3.10 Approaching the Mutiny Stones from the western side of the burn along the ridge from Byrecleugh provides the best 'reveal', as the size and length of the cairn becomes more striking the closer you get to it (see **SI Figure 5.3**). In contrast, while the cairn can be seen within the topographical confines of the natural bowl, the sense of reveal is considerably less apparent when approaching from the east via Pyatshaw Ridge (see **SI Figure 5.5**). Due to the low profile of the Mutiny Stones (refer to **Figures 4.2** and **4.3** in the 2023 EIA Report **Appendix 5.1**) and later physical alterations, including the construction of a sheepfold and shooting butt to the south, the cairn is not a prominent feature in the landscape until in relatively close proximity. This lack of prominence further emphasises and builds the sense of reveal.

5.3.11 While turbines from the operational Fallago Rig wind farm are a feature in the landscape when approaching the cairn from the north, the Revised Proposed Development will be a noticeable change when ascending out of Byrecleugh either following the western side of Byrcleugh Burn, and more pronounced when following the south-east / north-west ridge. On breaking away from the ridge and entering the natural bowl, turbines will be evident on the skyline, but will remain clearly outside and beyond the natural bowl in which the Mutiny Stones has been positioned (refer to **SI Figures 5.2** and **5.5**).

5.3.12 The turbines of the operational Fallago Rig wind farm are not visible from the Mutiny Stones (refer to **SI Figure 5.3**). The Revised Proposed Development will introduce turbines into the setting of the cairn when in close proximity to the asset. From the south-eastern end of the Mutiny Stones, identified as the cairn's putative 'forecourt' – an area where contemporary community groups may have gathered, and ceremonial activities may have taken place – up to 14 turbines will be seen against the skyline (refer to **SI Figure 5.4**). To the north-west the tip of Turbine 1 will be just visible behind the hub of Turbine 5, the top of the blades of Turbines 4 and 6 and the hubs and blades of Turbines 7 and 9 will be present to the south-west. The remaining turbines will be visible in an arc on the high ground to the south-south-west and south (refer to **SI Figure 5.3**).

5.3.13 Running from Turbine 1 to the north-west to Turbine 15 to the south, and with varying degrees of prominence (refer to **SI Figure 5.3**), turbines will be set back at a minimum of 1.2km from the Mutiny Stones behind the higher ground to the north-west forming Byrecleugh Ridge, and beyond the upper Dye Water valley to the south. The presence of the Revised Proposed Development will be a noticeable change to the cairn's open moorland setting, characterised by the distinctive pattern of controlled muirburn which forms part of the intensive management of the moorland for game and wildlife (refer to **SI Figure 5.5**). The presence of turbines will slightly diminish, but not substantially alter the open moorland character of the cairn's setting, or the sense of isolation which can be experienced while at the cairn (refer to **SI Figure 5.4**).

5.3.14 The presence of turbines during operation will undermine how the likely intended access approach from the upper Dye Water valley and along the ridge, is experienced. The introduction of turbines into the cairn's largely featureless open moorland setting will diminish how this element of its setting contributes to the sense of isolation, and how the deliberate element of anticipation and surprise when finally encountering the Mutiny Stones is experienced. However, the Mutiny Stones do not appear to have been placed in the landscape to be seen against the skyline or to be the dominant feature in the landscape. The scale and form of the Mutiny Stones does not become apparent until

in close proximity to it (refer to **SI Figures 5.3** and **5.5**). The way this element of the Mutiny Stones setting contributes to how its positioning in the landscape is appreciated, understood and experienced will not be affected.

5.3.15 While the presence of turbines during operation will slightly distract from how the cairn's position in the landscape limits views beyond the surrounding high ground and ridges is experienced, the sense of enclosure formed by a wide, open bowl defined by the areas of higher ground and ridges the cairn's position in the landscape provides will still be readily understood and appreciated.

5.3.16 The Revised Proposed Development will not affect the evidential (scientific) and historical (illustrative) value of the Mutiny Stones that contributes most to this heritage asset's cultural significance. The putative intervisibility with other Neolithic or Bronze Age funerary monuments, specifically Dunside Hill cairn (SM12507) approximately 2.3km to the south-south-east, or longer views over but not into the upper Dye Water valley and towards Black Hill and Dirrington Great Law will not be affected.

5.3.17 The presence of turbines during operation in the setting of the Mutiny Stones and in views towards the Revised Proposed Development will not substantially alter how the Mutiny Stones' setting contributes to the way it is understood, appreciated and experienced when approaching from the upper Dye Water, the sense of the cairn's isolation in the landscape and how the sense of the cairn's isolation in the landscape and how the choice of location may have enabled a putative element of anticipation and surprise. The removal of Turbine 3 and associated infrastructure, the reduction in tip heights of Turbines 1, 2 and 4 (from 220m to 180m) and Turbines 5 and 6 (from 220m to 150m) and the repositioning of Turbine 6 (see **section 3.3** for details) has reduced the level of impact (i.e. magnitude of change) experienced by the Mutiny Stones. The reduction in prominence of the turbines, particularly in bringing their hubs below the skyline, has reduced the level of change that will occur. This relates most strongly to the experience of the asset's cultural significance, as the turbines will be less distracting in close proximity in-combination views of the cairn. Similarly, the removal of the outlying Turbine 3 substantially reduces the sense of partial encirclement of the asset, which was highlighted as an issue in post-submission engagement. Nevertheless, these changes to the way the Mutiny Stones' setting contributes to the way its cultural significance is appreciated and experienced will lead to a level of impact judged to be **medium**, resulting in a **moderate** and therefore significant level of effect for the purposes of the EIA Regulations – albeit at a meaningfully lower level than those identified for the Proposed Development.

Cumulative Effects

5.3.18 The updated list of operational, consented and live application developments identified in **Table 4.2** of the SI Report considered in the cumulative effects assessment have been reviewed.

5.3.19 Cumulative effects remain as reported in **Chapter 5** and **Appendix 5.1** of the 2023 EIA Report; no significant cumulative effects have been identified.

5.4 Summary of Changes to Significance of Effects

5.4.1 The significance of effects remains as reported in **Chapter 5** and **Appendix 5.1** of the 2023 EIA Report.

5.5 Proposed Mitigation

5.5.1 No additional mitigation is required, however mitigation by design has been considered through the design modification process and consideration of micrositing restrictions has been discussed in **Chapter 3** of this SI Report.

6. Chapter 6

6.1 Ecology

6.1.1 **Chapter 6: Ecology** of the 2023 EIA Report presents the findings of the ecology assessment of the Proposed Development. Chapter 6 of the 2023 EIA Report was supported by **Appendices 6.1 – 6.6**. Only **Appendix 6.6: Outline Restoration and Enhancement Plan (OREP)** has been replaced by **SI Appendix 6.1**: **OREP**; all other 2023 Chapter 6 appendices remain valid.

6.1.2 This SI chapter is accompanied by the following figures:

- **SI Figure 6.1:** Phase 1 Habitats Plan (Replaces Figure 6.3: Phase 1 Habitats Plan);
- **SI Figure 6.2 :** National Vegetation Classification Survey Plan (Replaces Figure 6.4 : National Vegetation Classification Survey Plan;
- **SI Figure 6.3:** Areas of Guidance-stated Potential Groundwater Dependency (GWDTE) (Replaces Figure 6.5: Areas of Guidance-stated Potential Groundwater Dependency (GWDTE));
- **SI Figure 6.4**: Outline Restoration and Enhancement Map (Replaces Figure 6.10: Outline Restoration and Enhancement plan).

6.1.3 All other 2023 EIA Report figures remain valid.

6.1.4 The purpose of this chapter of the SI is to assess the potential effects of the Revised Proposed Development on non-avian ecology resulting from the design modifications set out in **Chapter 3**. This Chapter provides the following:

- Updated baseline habitat data in line with the Revised Proposed Development.
- Updated assessment of likely significant effects of construction on habitats of conservation concern[13].
- Updated assessment of likely significant effects on operational effects on bats.
- Updated assessment of the potential cumulative effects of the Revised Proposed Development in combination with other wind farm developments.

6.2 Clarification / Additional Information

6.2.1 The OREP in **SI Appendix 6.1** had been updated to provide further clarification in relation to the following key points raised during consultations with NatureScot:

- Committed measures have been split to clearly show how they relate to the mitigation hierarchy.
- Confirm the Revised Proposed Development's commitment to providing a 1:10 ratio for peatland restoration.
- To update the language used to reflect the ambition of the Revised Proposed Development's commitment to achieving the objectives of NPF4.

6.3 Updated Assessment of Effects

Updated Baseline Ecological Conditions - Habitats and Vegetation

6.3.1 The overall composition of the habitats within the revised redline boundary (**SI Figure 1.1**) of the Revised Proposed Development have not changed substantially. The revised redline boundary has marginally increased the total land take area of the Proposed Development from 2,003.63 Ha to 2,007.321 Ha, representing a 0.18% increase.

6.3.2 The revised redline boundary has resulted in a small increase in dry dwarf shrub heath (1.68 Ha) and dry modified bog (0.71 Ha) and continuous bracken (0.01 Ha). In addition, there has also been a negligible reduction in the area of unimproved acid grassland (0.01 Ha) marshy grassland (0.01 Ha) and dry heath/ acid grassland (0.03 Ha) present.

[13] Habitats of Conservation Concern are defined as those habitats included in the following: Conservation priorities in the Habitats Directive (i.e. Annex 1 habitats); potentially groundwater dependent; ecosystems; the Scottish Biodiversity List (SBL); Scottish Borders Local Biodiversity Action Plan priority habitats; or Ancient Woodland Inventory sites.

6.3.3 The Study Area remains dominated by commercial upland moor managed primarily for sporting interests (grouse shooting) and sheep grazing. Habitats in the Study Area are dominated by managed moorland/ dry swarf shrub heath strips with mosaics of acid/ marshy grassland, improved grassland, modified heath and modified bog with localised broad-leaved woodland and conifer plantation.

Construction Effects

6.3.4 This section provides an updated assessment of the following likely effects of construction as a result of the Revised Proposed Development. The assessment is informed by review of desk-based information and field surveys, project design and embedded mitigation as previously reported in the 2023 EIA Report and the updated baseline conditions reported above.

Construction effects on habitats of conservation concern

6.3.5 The potential construction effects on habitats of conservation concern are considered in this section are as follows:

- Direct loss of habitats of conservation concern as a result of the removal of habitat; and/ or a pollution event; and
- Fragmentation of habitats of conservation concern as a result of vegetation removal and/ or changes to hydrological regime (particularly within peatland habitats).

6.3.6 Approximately 35.006 Ha of habitats of conservation concern are forecast to be directly lost as a result of the Revised Proposed Development. This represents a slight increase from the 32.768Ha forecast to be lost by the Proposed Development. The change is largely due to the replacement of Borrow Pits 2 and 3 with three new borrow pits. **Table 6.1** details the total area to be lost, of each habitat type of conservation concern, arising from the Revised Proposed Development.

Table 6.1 Habitat Loss Calculations - Habitats of Conservation Concern

NVC Code	Proposed Development – Habitat Area to be Lost (Ha)	Revised Proposed Development – Habitat Area to be Lost (Ha)	Difference (Ha)	Revised Proposed Development - Total of Habitat Type Within the Study Area (Ha)	% of Study Area Habitat Resource to be Lost by Revised Proposed Development
W11 *Quercus petraea-Betula pubescens-Oxalis acetosella* woodland	0.00	0.00	0.00	3.198	0%
H9 Calluna vulgaris-Deschampsia flexuosa heath	10.029	10.856	+0.827	747.630	1.45%
H12 *Calluna vulgaris-Vaccinium myrtillus* heath	3.437	4.583	+1.146	134.526	3.41%
M6 *Carex echinata-Sphagnum fallax/denticulatum* mire	0.364	0.175	-0.189	4.909	3.56%
M19 *Calluna vulgaris-Eriophorum vaginatum* blanket mire	2.406	3.808	+1.402	43.514	8.75%
M20 *Eriophorum vaginatum* blanket and raised mire	8.757	10.617	+1.86	413.122	2.57%
M23 *Juncus effusus/ acutiflorus-Galium paluste* rush-pasture	1.560	0.652	-0.908	158.669	0.41%
M25 *Molina caerulea-Potentilla erecta* mire	1.0114	0.00	-1.0114	7.962	0%

NVC Code	Proposed Development – Habitat Area to be Lost (Ha)	Revised Proposed Development – Habitat Area to be Lost (Ha)	Difference (Ha)	Revised Proposed Development - Total of Habitat Type Within the Study Area (Ha)	% of Study Area Habitat Resource to be Lost by Revised Proposed Development
MG10 *Holcus lanatus-Juncus effusus* rush-pasture	0.00	0.00	0.00	20.886	0%
U2 *Deschampsia flexuosa* grassland	1.792	1.863	+0.071	98.131	1.90%
U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland	2.680	2.152	-0.528	109.315	1.97%
U5 *Nardus stricta-Galium saxatile* grassland	0.080	0.079	-0.001	23.071	0.34%
U20 *Pteridium aquilinum - Galium saxatile* community	0.652	0.221	-0.431	112.910	0.20%
Habitats of Conservation Concern Totals	**32.768**	**35.006**	**+2.238**	**1,877.841**	**1.87%**

6.3.7 **Table 6.1** above highlights the limited nature of habitat loss within the Study Area. The total loss of habitats of conservation concern as a result of the Revised Proposed Development has risen from 1.7% (**Table 6.12** of the 2023 EIA Report) to 1.87%. However, in totality, this loss is still less than 2% of the Study Area's habitat of conservation concern. The Study Area is dominated by a mosaic of heathland and grassland utilised for grouse management, with habitats of conservation concern predominately being located within watercourse corridors. Areas of wet/ dry modified bog and heath and marshy grasslands are highly modified and disturbed as a result of the current land use.

6.3.8 There is no loss of the following habitats/ vegetation communities that represent habitats of conservation concern within the Site/Study Area:

- W11 *Quercus petraea-Betula pubescens-Oxalis acetosella* woodland (Scottish Biodiversity List, Local Biodiversity Action Plan);
- MG10 *Holcus lanatus-Juncus effusus* rush-pasture (Moderate potential GWDTE, Scottish Biodiversity List);
- M25 *Molina caerulea-Potentilla erecta* mire (Moderate potential GWDTE).

6.3.9 Based on the small areas of habitat loss, no significant effects are predicted for the following habitat types:

- H9 *Calluna vulgaris-Deschampsia flexuosa* heath;
- H12 *Calluna vulgaris-Vaccinium myrtillus* heath;
- M6 *Carex echinata-Sphagnum fallax/denticulatum* mire;
- M19 *Calluna vulgaris-Eriophorum vaginatum* blanket mire;
- M20 *Eriophorum vaginatum* blanket and raised mire;
- M23 *Juncus effusus/ acutiflorus-Galium paluste* rush-pasture;
- U2 *Deschampsia flexuosa* grassland;
- U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland;
- U5 *Nardus stricta-Galium saxatile* grassland; and
- U20 *Pteridium aquilinum - Galium saxatile* community.

6.3.10 The proportion of habitats of conservation concern to be lost in comparison to the available resource within the Study Area is limited and the losses are not considered to adversely affect the integrity of these habitats in a wider context.

6.3.11 Habitat fragmentation, particularly of peat-forming habitats, largely relates to changes in the hydrological regime of the Study Area as a result of construction activities. The effect on the hydrological regime of habitats is assessed in **Chapter 8 of the 2023 EIA report. SI Appendix 8.1, Table 8.1 and Image 1** confirmed that:

- 85.6% of all peat probes taken were not comprised of peat soils.
- 12.7% were recorded as shallow peat between 50-100cm.
- 1.7% were recorded peat depth between 100-250cm.
- that all peat soils within the Study Area are less than 250cm in depth.

6.3.12 For consistency with the 2023 EIA report, the significance of potential effects on the changes to habitats lost as a result of the Revised Proposed Development are provided in **Table 6.2**. Significance is assessed within the context of the Ecological Importance of the Study Area, with these habitats being of Study Area level importance as defined within **Table 6.9** of the 2023 EIA Report.

6.3.13 The OREP (**SI Appendix 6.6** and **SI Figure 6.4 and EIA Report Figure: 6.10b**) will improve habitat connectivity and resilience of habitats of conservation concern by introducing native riparian woodland/ shrub habitats, diverse grassland and improving heath/ modified bog habitats across the Study Area.

Table 6.2 Assessment of Significance of Likely Construction Effects - Habitats of Conservation Concern

Parameter	Likely Effect	
	Direct Habitat Loss	Habitat Fragmentation
Extent	Loss of habitats of conservation concern as a result of construction remains to be limited to a very small proportion of the overall resource present within the Study Area.	The design process has sought to avoid habitats of conservation concern as far as possible. A commitment to utilise the existing access tracks within the Site as far as is practical means that habitat fragmentation is limited. The network of watercourses within the Study Area will be maintained. There will be no fragmentation of habitats of conservation concern within the Study Area as a result of construction. Habitat connectivity will be enhanced by the OREP as a result of the Revised Proposed Development.
Magnitude	Loss of habitats of conservation concern as a result of construction remains to be extremely unlikely to affect the viability or function of habitats within the Study Area.	There will be no change to the structure or function of habitats of conservation concern within the Study Area as a result of habitat fragmentation during the construction process.
Duration	Permanent	Permanent
Frequency	One-off event during construction	One-off event during construction
Reversibility	Irreversible	Reversible
Likelihood	Certain	Unlikely
Significance (EcIA)	**Not significant**	**Not significant**
Significance (EIA)	**Not significant**	**Not significant**

Operational Effects

6.3.14 This section provides an updated assessment of the following likely effects of operation as a result of the Revised Proposed Development. The assessment is informed by review of desk-based information and field surveys, project design and embedded mitigation as previously reported in the 2023 EIA Report.

- Operational effects on bats.

Operational effects on bats

6.3.15 The Revised Proposed Development includes the modification of the tip heights as follows:

- Turbine 1 reduced in height to 180m.
- Turbine 2 reduced in height to 180m.
- Turbine 4 reduced in height to 180m and moved circa 40m south east.
- Turbines 5 and 6 reduced in height to 150m.

6.3.16 In addition, Turbine 3 and the associated track has been removed.

6.3.17 Bats present within the Site are considered to be of Study Area level Ecological Importance, in line with **Table 6.9** of the 2023 EIA Report. The Study Area generally lacks favourable roosting opportunities for bats due to the dominance of managed grouse heathland. Habitats within the Study Area only provide limited opportunities for foraging and commuting bats. This is evident by the low levels of bat activity recorded during field surveys. However, these species are of ecological importance due to their conservation (legal) status and have the potential to contribute to the overall ecological function and provide connectivity through the Study Area.

6.3.18 Likely effects on bats during operation have been identified as:

- Habitat fragmentation in relation to lost commuting lines and foraging habitat due to the presence of turbines; and
- Mortality in relation to barotrauma caused by changes in air pressure around turbines, and direct collision with turbine blades.

6.3.19 Potential operational effects are predominantly associated with the operation of turbines at night, particularly 30 minutes prior to sunset until 30 minutes after sunrise.

6.3.20 It is widely acknowledged that common and widespread bat species (such as common and soprano pipistrelle (which accounted for the vast majority of bats recorded)) favour linear features such as forest edges and watercourses for commuting and foraging. Bat activity was generally low (albeit variable) across the Study Area and seasons, and the species assemblages largely comprised common and widespread species. However, the installation of turbines near linear features, particularly watercourses, is likely to pose a mortality risk to bats and may also disrupt their commuting and foraging. The loss of a small number of individuals from a small population can have a substantial effect on the local population and may adversely affect the distribution of bats.

6.3.21 Therefore, the Revised Proposed Development could have an adverse effect on bats in terms of their mortality and population viability within the Study Area. By observing a minimum 50 m buffer between turbine blades and the edges of watercourses and woodlands, both potential effects have been minimised. The habitats in the vicinity of Turbines 1, 2, 4, 5 and 6 are open, the reduction in the overall height of these turbine does not compromise the buffers applied during the original assessment, therefore these are still relevant.

6.3.22 For consistency with the 2023 EIA Report, the significance of likely effects on bats as a result of the revised design is provided in **Table 6.3.** Significance is assessed within the context of the Ecological Importance of the Study Area for bats as being of Study Area level importance as defined within **Table 6.9** of the 2023 EIA Report.

Table 6.3 Assessment of Significance of Likely Operational Effects - Bats

Parameter	Likely Effect	
	Habitat Fragmentation	Mortality
Extent	Turbine areas where commuting and foraging lines may be fragmented.	Turbine areas where collision and/ or barotrauma may be experienced.
Magnitude	Very low. Likely limited to a small number of potential foraging and commuting routes. Other routes will persist.	Low given the low levels of activity across the Study Area. However the loss of a small number of bats from small populations will be proportionally high and will affect the bat population of the Study Area.

Parameter	Likely Effect	
	Habitat Fragmentation	Mortality
Duration	Potentially repeatedly during operational lifetime.	Potentially repeatedly during operational lifetime.
Frequency	Potentially repeatedly during operational lifetime.	Potentially repeatedly during operational lifetime.
Reversibility	Irreversible at an individual level, but reversible at the population level, albeit slowly.	Reversible upon decommissioning, at the population level, but irreversible to those individuals killed.
Likelihood	Probable	Probable
Significance (EcIA)	**Not significant**	**Significant at Study Area level**
Significance (EIA)	**Not significant**	**Not Significant (Minor)**

Cumulative Effects

6.3.23 The assessment of potential cumulative effects of the Revised Proposed Development with other wind farm developments has been updated to include and consider one additional Site not previously captured within the 2023 EIA Report and an update to the status of one other wind farm site (**Table 6.4** below). This includes schemes within 10 km which are the subject of a valid planning application, or which have been consented but are not operational, and where there is sufficient information to enable them to be included in the assessment. Operational wind farms are not considered in this cumulative assessment of effects because these are considered to be part of the baseline conditions.

Table 6.4 Wind Farms in the Planning System within 10 km of the Proposed Development

Wind Farm Development	Number of Turbines	Status (April 2024)	Notes	Distance (km)	Tip height (m)
Newlands Hill, East Lothian.	17	Application Submitted	Managed upland habitat	3.7	200
Longcroft, Scottish Borders (NEW)	19	Application Submitted	Managed upland habitat	2.5	220
Ditcher Law (formerly Back Burn	9 (reduced from 15 at Scoping)	Application Submitted	Managed arable fields and upland habitat	8.2	200

6.3.24 A review of aerial photography of these development areas indicate that these Sites are dominated by managed upland habitats and arable land (at Ditcher Law). Habitats present in these developments are likely to be broadly similar in composition to the Revised Proposed Development, therefore of similar ecological importance.

6.3.25 The EIA reports and associated technical appendices of each respective proposed wind farm developments were reviewed to identify the key ecological features present and confirm if significant effects were identified for the above sites.

6.3.26 The proposed Newlands Hill Windfarm and Longcroft Wind Farm sites were confirmed to support areas of Annex 1 habitat (predominantly heath and wet modified bog), protected mammals (otter and mountain hare), limited suitable fish habitat, and a bat species assemblage of ‘Low’ to ‘Low/Medium Site Risk’ and low levels of other species such as badgers and reptiles. The Ecology Chapters of the EIA Reports for the Newlands Hill Windfarm and Longcroft Wind Farm sites confirm that upon application of standard mitigation, there is no significant adverse effect on ecological receptors (in EIA Terms).

6.3.27 The proposed Ditcher Law Windfrm site was confirmed to support heath, blanket bog, grassland, conifer plantation and native-broadleaved woodland habitats. Juniper scrub, beech woodland and blanket bog habitats present within the site were classified as Annex 1 habitats. Low levels of protected mammal activity (otter, badger) and suitable fish habitats were present at the site, Common and soprano pipistrelles were determined to be '*medium risk from turbine mortaiity but low risk at a population level*'. The Ecology Chapters of the EIA Report for the site confirms that upon application of standard mitigation, there is no significant adverse effect on ecological receptors (in EIA Terms).

6.3.28 Therefore, when considered cumulatively with the Newlands Hill, Longcroft and Ditcher Law proposed wind farms, there will be no significant effects as a result of the Revised Proposed Development.

6.3.29 When considered cumulatively, at an appropriate geographical level (County) it is considered unlikely that there will be significant effects on ecological features as a result of the Revised Proposed Development.

6.4 Summary of Changes to Significance of Effects

6.4.1 The updated assessment of the construction effects on habitats of conservation concern and operational effects on bats has confirmed that there is no overall change to the significance of effects on ecological features within the Study Area either as a result of the Revised Proposed Development or in combination with other similar proposed developments within 10km.The effects reported in the 2023 EIA Report remain unchanged as a result of the Revised Proposed Development. i.e. there will be no significant adverse effect on ecological receptors (in EIA Terms) either alone or cumulatively as a result of the Revised Proposed Development.

6.5 Proposed Mitigation

6.5.1 No additional mitigation is required in relation to terrestrial ecological receptors at the Site.

7. Chapter 7

7.1 Ornithology

7.1.1 **Chapter 7: Ornithology** of the 2023 EIA Report presents the findings of the ornithology assessment for the Proposed Development; this was supported by **Appendices 7.1 – 7.3** of the 2023 EIA Report. All Chapter 7 appendices of the 2023 EIA Report remain unchanged.

7.1.2 This SI chapter is accompanied by the following figures:

- **SI Figure 7.1: CONFIDENTIAL: Golden Eagle Satellite Tag Data**

7.1.3 The purpose of this chapter of the SI is to:

- Review the potential for any change to the predicted significance of effects on Important Ornithological Features (IOFs) presented in Chapter 7: Ornithology of the 2023 EIA Report following the modifications to the design detailed in **Chapter 3** of this SI;
- Provide a summary of the additional information on golden eagle provided by the South Scotland Golden Eagle Project (SSGEP) post-submission of the 2023 EIA Report;
- Provide an update to the curlew assessment following provision of revised population estimates from NatureScot; and
- Providing further information relating to potential cumulative operational collision risk for curlew in response to RSPB Scotland's comments.

7.2 Clarification / Additional Information

7.2.1 As outlined in **Table 1.1**, NatureScot and the RSPB provided feedback on the 2023 EIA Report relating to curlew (concerns regarding the cumulative operational displacement and collision risk had not been adequately addressed) and their comments have been taken into consideration below.

7.2.2 Following the submission of the 2023 EIA Report, the SSGEP provided satellite tag data for golden eagle within an area of 6km around the Proposed Development turbines[14] and the nearby operational Fallago Rig turbines. **Confidential SI Figure 7.1** shows this data overlaid with the Golden Eagle Topographical (GET) model. Consideration of this additional information is provided in the Operational Effects section below.

7.3 Updated Assessment of Effects

7.3.1 The baseline conditions, assessment methods, IOFs identified (listed below) and the associated impact pathways detailed in Chapter 7 of the 2023 EIA Report remain unchanged and unless specified, all conclusions on significance of effect remain unchanged. Furthermore, all embedded and additional mitigation measures committed to in Chapter 7 of the 2023 EIA Report remain unchanged.

Construction Effects

7.3.2 The Revised Proposed Development will not change the overall construction timescales/approach outlined in Chapter 7 of the 2023 EIA Report. Furthermore, the removal of Turbine 3 and other modifications to the Proposed Development has only resulted in minor changes to the overall Revised Proposed Development footprint (and therefore a negligible change to the study area buffers used in the ornithology assessment generated from the footprint). Direct habitat loss on habitats of conservation concern will increase slightly with the Revised Proposed Development (refer to **Chapter 6**) however it is considered to be a negligible increase.

7.3.3 Consequently, the conclusions of Chapter 7 of the 2023 EIA Report are considered to be unchanged, and the predicted construction effects remain not significant for curlew, golden plover, lapwing, golden eagle and short-eared owl. There also continues to be no adverse effects on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA with regards to pink-footed goose or any other qualifying feature.

[14] Note that this was the 15-turbine layout that was presented in the 2023 EIA Report.

7.3.4 The construction mitigation proposed remains unchanged: pre-construction surveys, Bird Disturbance Management Plan (BDMP) and the presence of an Ecological Clerk of Works (ECoW).

Operational Effects

Operational Effects – Collision

7.3.5 The re-positioning of turbines 6, 4 and 9 will not alter the collision model outputs as the new positions of these turbines would not result in an increase to the Collision Risk Analysis Area (CRAA) that was created from the Proposed Development and used in the modelling presented in Chapter 7 of the 2023 EIA Report. The removal of turbine 3 would result in a minor reduction of the CRAA however the collision model outputs presented are still considered to be a reasonable worst-case scenario.

7.3.6 The collision model was run on the assumption of all 15 turbines having a tip height of 220m and a rotor diameter of 172m (which results in a ground clearance of 48m). Whilst the revisions to the tip height (and associated rotor diameter) of Turbines 1, 2, 4, 5 and 6 will also result in a slightly lower ground clearance for these turbines (30m and 14m respectively) which could result in a very slight increase to the collision predictions for certain species, this will be off set be the removal of Turbine 3 and the magnitude of impact predicted by the collision model will overall remain the same.

7.3.7 Considering the above, the collision modelling provided in Chapter 7 of the 2023 EIA Report is still considered to present a reasonable estimate of collision risks for the revised turbine scheme and as such updated collision modelling has not been undertaken.

7.3.8 Consequently, the conclusions of Chapter 7 of the 2023 EIA Report are considered to be unchanged and effects remain not significant for curlew, golden plover, lapwing, golden eagle and short-eared owl. There also continues to be no adverse effects on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA with regards to pink-footed goose or any other qualifying feature.

Operational Effects – Displacement

Curlew

7.3.9 The study area for breeding curlew was defined in Chapter 7 of the 2023 EIA Report as a 500m buffer from the turbines and infrastructure associated with the Proposed Development. A review of this study area for the Revised Proposed Development has concluded that whilst the removal of Turbine 3 (and its associated infrastructure) would result in a change to the 500m study area, the reduction is considered to be negligible as the access track from Byrecluegh that runs up the hill to Byrecleugh Ridge (and onwards to Turbines 5 and 2) on which Turbine 3 was situated remains. The modifications of the other turbines and infrastructure is also not considered to result in any material change to the 500m study area.

7.3.10 To estimate the magnitude of impact of displacement, the assessment presented in Chapter 7 of the 2023 EIA Report used a regional curlew breeding population estimate of 1,400 pairs, as advised in Wilson *et al*. (2015[15]). However, as detailed in Table 1.1 of this SI Report, NatureScot advised that the regional curlew population is now estimated to be 1,220 pairs. Based on this estimate, the potential permanent loss of between four and 12 curlew territories (within the 500m study area, ranges based on minimum and maximum breeding activity in 2021 and 2022) would result in a loss of 0.33 % to 0.98% of the breeding population, an increase from the 0.28% to 0.85% predicted in the 2023 EIA Report assessment. However, as stated in the 2023 EIA Report assessment, it is considered unlikely that all territories and pairs within 500m of turbines would be lost. Evidence at the adjacent operational Fallago Rig Wind Farm indicates that curlew are not wholly displaced from operational turbines, with surveys in 2013 and 2014 for the extension application (Fallago Rig II) finding that five of the seven, and six of the 15 territories recorded in 2013 and 2014 respectively were within approximately 500m of the Fallago Rig I turbines, operational at the time of surveys. This was consistent with the seven territories recorded in the same area during the baseline surveys in 2005 for Fallago Rig Wind Farm (i.e. prior to the turbines but in the same area), as reported in the Fallago Rig II assessment. The predicted impact on breeding curlew therefore continues to be considered to be of low and

[15] Wilson, M. W., Austin, G. E., Gillings S. and Wernham, C. V. (2015). Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number SWBSG_1504. pp72. Available from: www.swbsg.org

long-term magnitude and is considered to be minor-moderate adverse and therefore (unmitigated) potentially significant in the context of the EIA regulations.

Golden Eagle

7.3.11 The 2023 EIA Report assessment reviewed the potential for operational displacement to golden eagles as a result of the Proposed Development. An impact of negligible and long-term magnitude was predicted, which was considered to be minor-adverse and therefore not significant in the context of the EIA Regulations, based on the following:

- The GET modelling of the Lammermuir Hills area predicted that although much of the Site is likely to be favourable for foraging golden eagle, a large part of the wider Lammermuir Hills area is also likely favourable, and there is considered to be enough continuously suitable foraging habitat (excluding the Proposed Development Site) to continue to support similar numbers of non-breeding individuals and potentially also a breeding pair.
- A review of 1:25,000km base-mapping did not indicate any suitable nesting crag habitat within or in the area directly surrounding the Site, and the nearest area of trees likely to be large enough to support a nesting attempt was over 2km from the nearest turbine and therefore the Proposed Development would not prevent a potential nesting attempt.
- Given the current lack of breeding golden eagle in the area, foraging golden eagle within the Site were considered to be part of the non-breeding population and are therefore able to roam widely. Any loss of foraging habitat is therefore unlikely to impact on survival rates and or create a significant effect on the regional population as a whole.

7.3.12 When considering any future territories that may establish in the Lammermuirs, the GET modelling for the Lammermuirs indicated that there is 31,416.61ha of suitable habitat[16] available (i.e., habitat scoring 6 or over as shown on **Confidential SI Figure 7.1**) and that the Revised Proposed Development would equate to a loss of 1.2% (based on a 300m displacement buffer around the turbines).

7.3.13 As noted above, after the submission of the EIA Report the SSGEP provided information relating to satellite tagged golden eagle within 6km of the Proposed Development turbines[14] and operational Fallago Rig turbines. **Confidential SI Figure 7.1** shows this data overlaid with the GET model. The SSGEP did not provide evidence of any breeding territories forming within this 6km search area.

7.3.14 Upon reviewing this satellite data, overall golden eagle presence appears to correlate relatively strongly with the GET model predictions with the data points generally associated with 'preferred' habitat scoring 6 or over, although golden eagle activity does appear to be skewed to the western side of the 6km search area despite the GET model indicating suitable habitat also to the east (refer to **Confidential SI Figure 7.1**). The satellite tag data also shows very limited records within 300m of the operational Fallago Rig Wind Farm (and none in between the turbines associated with the Fallago Rig turbine array itself but just on the edges of the turbine array), indicating that collision with turbines (associated with Fallago Rig or the Revised Proposed Development is very low). Golden eagle data points were located within the Revised Proposed Development Site, however given the continued absence of breeding activity, these birds would be considered to be part of the non-breeding population. Therefore, the Proposed Development assessment in the 2023 EIA Report remains applicable and (as was concluded in the 2023 EIA Report assessment) given the ability of non-breeding birds to roam widely the small loss of foraging habitat as a result of the Revised Proposed Development (1.2% of Lammermuirs) it is considered unlikely to impact on survival rates and therefore unlikely to result in a significant effect on the regional population as a whole.

7.3.15 The Revised Proposed Development is considered not to alter the conclusions of the 2023 EIA Report assessment and the potential effect for golden eagle therefore continues to be considered of negligible and long-term magnitude, and therefore considered to be minor adverse and not significant effect in the context of the EIA Regulations.

All other IOFs

7.3.16 The modifications to the Proposed Development design (resulting in the Revised Proposed Development) are not considered substantial enough to result in any changes to the operational displacement impacts predicted for other IOFs in Chapter 7 of the 2023 EIA Report. Consequently, the conclusions of Chapter 7 of the 2023 EIA Report are considered to be unchanged, and the predicted effects remain minor adverse and therefore not significant for golden

[16] Open water, forestry, A and B category roads and operational wind farms (plus a 300 m buffer) were excluded.

plover, lapwing and short-eared owl. There also continues to be no adverse effects on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA with regards to pink-footed goose.

Proposed Operational Mitigation

7.3.17 To address the potentially significant effect predicted for breeding curlew as a result of operational displacement, the Outline Restoration and Enhancement Plan (OREP) presented the 2023 EIA Report (Technical Appendix 6.6) included management provisions for curlew that would reduce the residual effect to minor-adverse and not significant in the context of the EIA Regulations.

7.3.18 An updated version of the OREP is provided as **SI Appendix 6.6** to this report that took into consideration feedback provided[17] in relation to the OREP submitted as part of the 2023 EIA Report. Objectives 2, 4 and 5 are designed to deliver focussed habitat enhancement that will provide positive improvements to the breeding curlew population and the provision of an additional Objective 6 will ensure current land management practices considered to be benefitting curlew (e.g. predator control which is likely to be partially responsible for the breeding wader abundance recorded on the site) are maintained throughout the lifespan of the Revised Proposed Development, and that monitoring of curlew will feed in to periodic reviews of the adopted REP.

7.3.19 It should be noted that these objectives will also be of benefit to other breeding waders (including lapwing and golden plover) and also birds of prey.

Cumulative Effects

7.3.20 With the exception of curlew, given that predicted effects in this report remain unchanged to those presented in the 2023 EIA Report, the scope and conclusions of the cumulative assessment provided in the 2023 EIA Report assessment also remain unchanged for cumulative construction and operational effects of the Revised Proposed Development on golden plover, lapwing, golden eagle, short-eared owl. This also applies to in-combination effects on Fala Flow SPA, Greenlaw Moor SPA and Firth of Forth SPA.

7.3.21 For curlew, additional assessment has been provided below following the EIA responses provided by NatureScot and RSPB Scotland (**Table 1.1**).

Curlew

Displacement

7.3.22 In Chapter 7 of the 2023 EIA Report, the cumulative operational displacement assessment for curlew was based on the NHZ 20 population estimate of 1,400 breeding pairs (Wilson *et al.* 2015[15]), however, post application, NatureScot provided an updated estimate of the NHZ 20 population of 1,220 breeding pairs. A revised version of the cumulative operational displacement assessment has therefore been provided below.

- Combined, operational and consented wind farm projects within NHZ 20 would potentially displace a minimum (due to limited data availability) of 23-27 pairs. The NHZ 20 breeding curlew population is estimated to be 1,220 pairs (NatureScot communication), and the potential permanent loss of at least 27 curlew territories, assuming all consented sites will be built, would result in a loss of at least 2.21% of the breeding population.
- Including the Revised Proposed Development there are a further 16 sites at application stage that, in combination, may displace an additional 74-124 pairs (assuming that all sites at application stage will become fully operational), of which, unmitigated the Revised Proposed Development would account for a maximum-case of 4-12 pairs (0.33% to 0.98%). Combined with the operational and consented projects, this could result in the unmitigated loss of 97-151 pairs (7.95% to 12.38% of the breeding population). In review of available documentation for this revised cumulative assessment, it has however been identified in the response to RSPB comments for Newlands Hill Wind Energy Hub (ECU00004603) by Avian Ecology, that the estimates for breeding pairs of curlew at Torfichen Wind Farm (ECU00004661) indicate an unexpectedly high density. A review of the Torfichen ornithology chapter by MacArthur Green notes that 63-87 pairs were stated to have been identified to be breeding within approximately 20km^2 of survey area (survey area estimated from a review of Torfichen EIA Report Figure 9.4). During this cumulative assessment, MacArthur Green has also identified similar unexpectedly high densities of breeding curlew at Longcroft Wind Farm (ECU00004774) where 33-52

[17] Note that this was not solely feedback relating to ornithological aspects of the OREP.

pairs were stated to have been identified to be breeding within approximately 20km^2 of the survey area (survey area estimated from a review of Longcroft Figure 9.6). For Torfichen and Longcroft this would indicate high curlew densities of 2.6 to 4.4 pairs per km^2 whereas the Revised Proposed Development (which is considered to have recorded relatively high numbers of breeding waders due to the current land management practices creating near optimal conditions for breeding waders) has approximately 0.8 pairs per km^2. It is noted in the Avian Ecology response for Newlands Hill Wind Energy Hub that "A *review of the methods used to calculate breeding density for Torfichen shows that any bird seen in suitable habitat on a single survey visit has been counted as a breeding territory. Consequently, the number of breeding pairs both at, and likely to be displaced from, the Torfichen site may have been substantially overestimated. Caution should therefore be applied before extrapolating or combining the results of that assessment to other proposals where differing methods of calculating populations have been employed (i.e. assigning territories based on clusters of sightings recorded over multiple visits, in accordance with the methods set out in Marchant 1983 and Bibby et al. 2000)*" and it is considered likely that similar methods to those at Torfichen have been employed at Longcroft. Considering the variation regarding the methodology used to calculate breeding densities at Torfichen and Longcroft, it is reasonable to also present the cumulative assessment excluding these projects (Torfichen and Longcroft account for 55-89 pairs of curlew included in the cumulative application stage). Excluding these two sites, the cumulative assessment would result in 14 sites at application stage that are identified to have potential displacement impacts to breeding curlew that may displace an additional 19-35 pairs (assuming that all sites at application stage will become fully operational), of which, unmitigated the Revised Proposed Development would account for a maximum-case of 4-12 pairs (0.33% to 0.98%). Combined with operational and consented projects, this could result in the unmitigated loss of 42-62 pairs (3.44% to 5.08% of the breeding population).

7.3.23 As detailed above (and in the 2023 EIA Report assessment), evidence at the adjacent operational Fallago Rig Wind Farm indicates that curlew are not wholly displaced near operational turbines, and therefore the totals for each project are likely to be overestimates of actual losses. Considering that this maximum-case displacement is unlikely to occur, and the provision by the Revised Proposed Development and other projects (e.g. Grayside Wind Farm) of OREPs and Habitat Management Plans that would benefit curlew, then the residual cumulative operational effect for curlew is considered to be low and long-term magnitude, which is classified as minor adverse and is therefore not significant in the context of the EIA Regulations.

Collision Risk

7.3.24 The 2023 EIA Report assessment scoped out a cumulative collision risk assessment for curlew due to the low collision risk predicted for the Proposed Development alone (mean annual collision rate of 0.1267, or one bird every 7.9 years), however a cumulative collision risk assessment has been provided below in response to RSPB Scotland's feedback (**Table 1.1**).

- Combined, the other operational and consented wind farm projects within NHZ 20 would potentially result in a minimum (due to limited data) annual collision rate of 0.0904, or roughly one collision every 11 years. The NHZ 20 breeding curlew population is estimated to be 1,220 pairs (NatureScot communication), and the additional mortality due to collision would be an increase over the baseline mortality rate (0.264, BTO BirdFacts[18]) of 0.01%.
- Including the Revised Proposed Development there are a further 11sites in application stage that provided collision estimates for curlew within their assessments, which could result in an additional annual collision rate of 4.9662 to 7.7422[19] birds. Combined with the operational and consented projects, this could result in an additional annual collision rate of 5.0566 to 7.8326which would equate to an additional mortality over the baseline of 0.78% to 1.22% (of which the Proposed Development would contribute 0.02%).

7.3.25 This increase in baseline mortality for breeding curlew as a result of cumulative collisions is considered to be of low and long-term magnitude and is consequently minor adverse and not significant in the context of the EIA Regulations.

[18] https://www.bto.org/understanding-birds/birdfacts/curlew (accessed May 2024)

[19] A range is provided as some assessments presented multiple estimates.

7.4 Summary of Changes to Significance of Effects

7.4.1 In summary, neither the Revised Proposed Development nor of the requests for additional information provided after the submission of the 2023 EIA Report, result in changes to the significance of effects presented in the 2023 EIA Report assessment. To summarise these comprise:

- Construction effects: not significant for curlew, golden plover, lapwing, golden eagle and short-eared owl. No adverse effect on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA.
- Operational displacement effects: not significant for curlew (reduced from potentially significant via habitat management proposals), golden plover, lapwing, golden eagle and short-eared owl. No adverse effect on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA.
- Operational collision effects: not significant for curlew, golden plover, lapwing, golden eagle and short-eared owl. No adverse effect on the integrity of the Greenlaw Moor SPA, Fala Flow SPA or Firth of Forth SPA.
- Cumulative[20] operational displacement effects: not significant for curlew.

7.4.2 This SI has also reviewed the potential cumulative operational collision risk for curlew which was concluded to be not significant in the context of the EIA Regulations.

[20] Chapter 7 of the 2023 EIA Report scoped out cumulative construction and collision effects for all IOFs due to negligible effects from the Proposed Development alone. Cumulative operational effects for golden plover, lapwing, golden eagle and short-eared owl were also scoped out due to negligible effects from the Proposed Development alone. In-combination effects for pink-footed goose in relation to the Greenlaw Moors SPA, Fala Flow SPA and Firth of Forth SPA were also scoped out due to the absence of a predicted adverse effect on the integrity of the SPAs.

8. Chapter 8

8.1 Hydrology, Hydrogeology, Geology and Peat

8.1.1 **Chapter 8: Hydrology, Hydrogeology, Geology and Peat** of the 2023 EIA Report presents the findings of the Hydrology, Hydrogeology, Geology and Peat assessment for the Proposed Development. This SI chapter presents the information, data and clarification in response to consultation responses from SEPA and Ironside Farrar Ltd and provides an updated assessment of the effects of the Revised Proposed Development.

8.1.2 This SI chapter is accompanied by the following figures:

- **SI Figure 8.1: Watercourses, buffers, catchments and watercourse crossings (Existing and Proposed)** (replaces Figure 8.2 of the 2023 EIA Report)
- **SI Figure 8.2: Ground Water Dependent Terrestrial Ecosystems (GWDTE), Groundwater abstractions and Private Water Supplies)** (replaces Figure 8.3 of the 2023 EIA Report)
- **SI Figure 8.3: Peat Depths (combined Phase 1, Phase 2 and additional SI probing)** (replaces Figure 8.7 of the 2023 EIA Report)

8.1.3 This SI chapter is accompanied by the following appendices:

- **SI Appendix 8.1: Peat Survey Report** (replaces Appendix 8.2 of the 2023 EIA Report)**;**
- **SI Appendix 8.2: Peat Management Plan** (to be read in addition to Appendix 8.3 of the 2023 EIA Report)**;**
- **SI Appendix 8.3: Peat Landslide Hazard and Risk Assessment** (to be read in addition to Appendix 8.4 of the 2023 EIA Report)**;**
- **SI Appendix 8.4: Groundwater Dependent Terrestrial Ecosystem Assessment** (replaces Appendix 8.6 of the 2023 EIA Report); and
- **SI Appendix 8.5: Response to the Peat Landslide Hazard Risk Assessment Stage 1 Report** (new appendix)

8.1.4 The purpose of this chapter of the SI is to:

- Provide clarification/additional information to address SEPA and Ironside Farrar Ltd comments (see **Table 1.1** for details) and update the assessment of potential effects of the Revised Proposed Development on:
  - Watercourses;
  - Private Water Supplies (PWS);
  - Groundwater Dependent Terrestrial Ecosystems (GWDTE); and
  - Peat.
- Outline additional proposed mitigation measures to mitigate and reduce the potential construction, operational and cumulative effects, if required.
- Provide additional information relevant to the cumulative effects of the Revised Proposed Development with other development applications that have progressed since the 2023 EIA Report.

8.2 Clarification / Additional Information

8.2.1 As outlined in **Table 1.1**, SEPA (concerns re watercourse infringements, peat probing and PWS data) and Ironside Farrar (peat probing and Factor of Safety analysis) requested additional information and clarifications on the content of the EIA Report. The following sections provide the requested clarification /additional information.

Watercourses

8.2.2 The borrow pits within the Revised Proposed Development have been sited a greater distance from the Dye Water watercourse 50m buffer to address SEPA concerns about the proximity of borrow pits 2 and 3 of the Proposed Development to the watercourse (**Table 1.1**).

8.2.3 The original borrow pits 2 and 3 of the Proposed Development have been removed and have been replaced with three new borrow pits, as shown in **SI Figure 8.1**. None of the currently proposed borrow pits are within 50m of any watercourse. The Revised Proposed Development does not require any additional watercourse crossings.

8.2.4 The remaining locations where infrastructure of the Revised Proposed Development is within the 50m watercourse buffer are described below (buffer breach B as reported in the 2023 EIA Report has been resolved following the removal of original borrow pit 3):

- Buffer breach A – the proposed battery storage location is within 32m of the Shiel Burn. This location is an existing flat area of hardstanding that is ~5m higher than the watercourse and is the other side of the track from the watercourse. This location can be justified as it is already an area of hardstanding. Embedded mitigation (i.e. construction SuDS and permanent drainage) around the battery storage area will be included in the design and surface water runoff will be treated and attenuated. Additional mitigation (e.g. silt fences, settlement ponds) will be installed during construction to reduce the risk of sediment/silt run-off during construction.
- Buffer breach C - Upgrades/ repairs to existing Fallago Rig access track along ~2.48km of existing track, where the track is within the 50m buffer from the Dye Water or its tributaries; the locations are shown on **SI Figure 8.1**. The existing Fallago Rig access track follows the Dye Water along the valley for most of its length and crosses a number of tributaries. Given the location of the existing track, a 50m buffer could not be achieved and to minimise environmental effects it is proposed to utilise the existing access track and associated watercourse crossings rather than excavate a new track (with new watercourse crossings). Additional mitigation (e.g. silt fences, swales, settlement ponds) will be installed during construction on the downgradient side of the track to reduce the risk of sediment/silt run-off to the water environment during track upgrades.

PWS

8.2.5 To obtain further information about the PWS source locations, questionnaires were sent to all identified properties (which may have a PWS) within a 1km buffer of the Site boundary in November 2023 to locate the source locations. In addition, the Applicant and the Estate owner contacted property owners directly on site between November 2023 and May 2024 to obtain further information about the PWS supplies.

8.2.6 **SI Figure 8.2** shows the locations of the PWS properties and known PWS source locations within a ~1km buffer from the Site boundary. **Table 8.1** provides an update of the PWS information originally obtained from the SBC, supplemented by questionnaires, PWS property and source site visits and phone-calls undertaken to inform the SI. This additional information has been used to inform an updated assessment of effects (see last two columns of **Table 8.1** and further details in **Section 8.3 of this SI report**)

Table 8.1 PWS sources and properties supplied within 1 km of Site boundary

PWS Name and type	Source Location (E, N)	Properties supplied	Distance from Proposed Infrastructure and Initial Assessment	Comments and Initial Assessment	Scoped In/ Out
Byrecleugh (Spring)	362035, 658674	Farm Steading Keepers House Shepherds Cottage Byrecleugh Farmhouse	Source is ~92m north (upgradient) of existing access track upgrade and ~200m south (downgradient) of proposed wind farm track to Turbines 2 and 5. Tank is ~127m east of proposed new wind farm track to Turbines 2 and 5.	The spring source is located on the hillside and taken to a storage tank, and then distributed to the four buildings. The spring source is downgradient of the proposed wind farm track and the track is located between the source and the storage tank. The effect is assessed further in **Section 8.3**.	**Scoped In**
Trottingshaw (Spring or borehole)	364643, 658330	Trottingshaw Trottingshaw Cottage	The source is ~850m north-east of Borrow Pit 4 and is upgradient of the proposed infrastructure on the	The source is located upstream of the Trottingshaw property on the east side of the Trottingshaw Burn. There is a	Scoped Out

		Dye Cottage	other side of the Dye Water valley.	tank just south of Trottingshaw House. The source is in a different catchment to the Revised Proposed Development and is not hydrologically connected.	
Dunside **(Spring)** **(Proposed Borehole)**	365100, 658113	Dunside	The source is ~430m north-east and downgradient of proposed upgrades to the existing access track. This PWS source is no longer in use and will be replaced in 2024 by a borehole close to the property.	Dunside is currently derelict and was served by a spring on the hill south of the property. The location of the spring (& tank) is shown (**SI Figure 8.1**). The PWS will be replaced by a new borehole near to the cottage as part of a new build property on the same site which will start in 2024. The proposed borehole is ~590m north-east of the access track upgrades and will not be impacted.	Scoped Out
Horseupcleugh **(Spring)**	366441, 659676	Horseupcleugh Farmhouse Shepherds Cottage The Bothy Guard House The Steading	Source located ~2.5km north-east of access track upgrades and is in a different catchment.	The spring source is located on the hill north of the properties; all are on the other side of the Dye Water valley from the Revised Proposed Development. There is no infrastructure upgradient within the catchment of the PWS source and it is not hydrologically connected to the Revised Proposed Development.	Scoped Out
Scarlaw **(Borehole)**	365234, 656490	Scarlaw Steading Scarlaw Cottage	Borehole is ~450m east of the access track upgrades	Scarlaw steading and cottage are fed by a borehole directly behind the steading. Borehole is ~450m east of access track upgrades and will not be affected by the Revised Proposed Development	Scoped Out
East Woodheads, Flass **(Spring)**	362972, 654489	East Woodheads, Flass	Spring is ~1.1km west of the access track upgrades.	Spring source on hill north of supplied property. The source is ~1.1km west of the access track upgrades and there is no infrastructure in the PWS source catchment.	Scoped Out
Evelaw **(Borehole)**	366155, 652655	Evelaw	Borehole is ~1.8km east of the access track upgrades.	Borehole is located a short distance to the east of the Evelaw farmhouse building. Both are ~1.8km east of the access track upgrades and the borehole is not hydrologically connected to the Revised Proposed Development	Scoped Out
Wedderlie **(Borehole and Spring)**	364448, 654582 and	Crawlaw Cottage 2 Wedderlie Cottages	The spring source is ~340m east of the access track upgrades.	A spring and borehole provides the water supply to five properties in Wedderlie and also to Crawlaw cottage.	**Scoped In**

	364353, 653105	3 Wedderlie Cottages 5 Wedderlie Cottages Wedderlie Lodge Wedderlie Farmhouse	The borehole is ~120m east of the access track upgrades.	The spring is located ~2.5km north of the Wedderlie properties and the borehole is close to Crawlaw Cottage. The PWS sources will not be affected by the Revised Proposed Development, as both are over 100m away from the proposed track upgrades. However, it is likely that supply pipework from the source to properties will cross the existing access track and may be impacted.	
Wedderlie House (Boreholes)	363959, 651558	Wedderlie House Wedderlie Cottage The Hayloft The Cabin Gamekeepers Cabin The Stables	The two boreholes and supplied properties are over 400m west of the access track upgrades.	There are two boreholes within 100m of main house. Boreholes are 70m and 90m deep. The boreholes supply six properties at Wedderlie House, which is currently a wedding venue. The PWS source are deep boreholes, over 400m west from the access track upgrades and will not be affected by the Revised Proposed Development	Scoped Out
Cammerlaws	Now on mains supply	N/A	N/A	Cammerlaws Farm and adjacent properties are now on a mains supply and no longer supplied by a private water supply.	Scoped Out

8.2.7 Regarding the existing groundwater abstraction for Fallago Rig Wind Farm, the Applicant can confirm that a full working agreement will be put in place with the owners/operators of Fallago Rig Wind Farm and will remain live and updated as detailed construction details become available post consent including detailed proposals for groundwater abstraction mitigation.

GWDTE

8.2.8 SEPA recommended in the consultation response to the application (see Table 1.1) that Turbine 4 is relocated away from the indicative surface water flow paths contributing to GWDTE Target Note 1 (TN1) and TN2. SEPA also requested that mitigation and monitoring measures as well as any additional mitigation relating to the location of Turbine 4 are provided in an updated GWDTE assessment (**SI Appendix 8.4**). SEPA also requested that the updated assessment considers the potential effects on flushes (TN7 and TN8) and recommended mitigation if required.

8.2.9 The Revised Proposed Development addresses SEPA's recommendation and Turbine 4 has been relocated 40m to the southeast, as shown in **SI Figure 8.2**. This will reduce potential effects on the GWDTE. There will be no micrositing of Turbine 4 to the north (i.e. closer to the GWDTE). **Appendix 8.6** of the 2023 EIA Report has been updated to account for the relocation of Turbine 4 and to fully reflect additional mitigation and monitoring measures and is provided as **SI Appendix 8.4**. Further information on additional mitigation to protect flows to and from flushes at TNs 7 and 8 have also been included in SI **Appendix 8.4**.

Peat

8.2.10 SEPA and Ironside Farrar Ltd. requested additional peat probing of the proposed infrastructure. Additional peat probing was undertaken in November 2023 and May 2024 to cover the additional data requests of SEPA and Ironside Farrar and also to cover changes resulting from the Revised Proposed Development layout, as summarised below:

- Probing of the track between Turbines 13 and 15 and at Turbine 13, as this was omitted in the 2023 EIA Report due to layout changes after the Phase 2 probing survey work.
- Probing of the three new borrow pit locations (BP1, 2 and 3) on a 10m grid as these are in areas where Phase 1 probe data indicated there may be peat. New accesses to the borrow pits were also probed.
- Phase 1 probing of borrow pit 4 (BP4). This is located in an area classed as Class 0 – Mineral Soil in the NatureScot (2016) Carbon and Peatland Map. The footprint of BP4 and a wider search area was probed on a 50m grid.
- Probing of the revised location of Turbines 4 and 9 and associated access tracks.
- Infill of the original Phase 2 probing at infrastructure on a 10m grid to be compliant with relevant published guidance (2017 Peatland Survey Guidance). This was undertaken at all infrastructure locations were the original peat surveys showed peat (>50cm probe depth) was present or nearby.
- The additional peat survey is reported in the updated Peat Survey report, which combines all peat data collected for the Proposed and Revised Proposed Development (**SI Appendix 8.1**) and shown spatially in **SI Figure 8.3** with the infrastructure layout. A total of 2,275 additional sampling points were probed, making a total of 5,363 probes across the site.

8.2.11 A summary of the peat probes collected over the Revised Proposed Development Site is provided below:

- 41.8% of probes were recorded as having depths of less than 25cm. These probes are not classified as peat.
- 43.8% of probes were recorded as having depths of between 25-50cm. These probes are classified as organo-mineral soils and not formally considered to be peat.
- 12.7% of probes were recorded as having depths of between 50-100cm, which are classed as peat.
- 1.7% of the probes were recorded as having peat depths of 100cm or greater.

8.2.12 It should be noted that these peat depth distributions are not directly representative of the peat coverage over the Site, as a significant proportion of the probes were obtained during the high-resolution Phase 2 survey, which focused on areas of Revised Proposed Development which had been purposefully situated outside the areas of deeper peat that were identified during Phase 1.

8.2.13 The additional data was used to update the Peat Management Plan (**SI Appendix 8.2**) and Peat Landslide Hazard Risk Assessment (**SI Appendix 8.3**).

Consultation Responses/Further information

8.2.14 A written response to the Ironside Farrar comments (Factor of Safety analysis query and request for peat probing methodology justification; see **Table 1.1**) was submitted to the ECU on 23 November 2023, see **SI Appendix 8.5** and summarised below.

- An undrained loaded analysis to reflect vehicle loading on floated track sections was undertaken. Input parameters correspond to disturbed peat, subsequent to construction, with peat loaded by floating track and typical vehicle loads. The analysis employs a 6m wide floating track and assumes representative loads for a multi-axle crane with maximum axle load of 12t moving over the floated surface. The analysis was undertaken for all grid cells subject to floating track. The analysis assumes pre-loading of the peat by floating track during which the track is built in layers and pore pressures are allowed to dissipate. The combined weight of the track and peat are then modelled in an undrained analysis utilising the heaviest vehicle loads likely to use the access the track. **Figure A.1** of **SI Appendix 8.5** shows the results for all floating track sections, which are summarised below:
  - Floating track between spur to Turbine 12 and junction to Turbines 13 and 14: stable

- Floating track on approach to spur to Turbine 13: stable
- In both locations, as with the vast majority of the site, baseline Factors of Safety are high, reflecting the limited peat and soil depths. As a result, as expected, the modified analysis show stability in these locations (with the lowest Factor of Safety in the undrained loaded analysis being c. 4.0).

8.2.15 **SI Appendix 8.5** provides Ironside Farrar's response to the above commentary and peat probing clarifications as issued to the Energy Consents Units (dated 29.02.24); confirming that the responses to the first two queries in the Stage 1 check report have been adequately addressed and that further commentary will be provided upon receipt of the further peat probing data (subject of this SI; **SI Appendix 8.1**).

8.3 Updated Assessment of Effects

8.3.1 This section provides an update of the assessment of effects based on the Revised Proposed Development which reflects the layout modifications described in Chapter 3 and also reflecting the additional information collected on PWS and peat survey data since the 2023 EIA Report.

Construction Effects

Watercourses

8.3.2 The Revised Proposed Development infrastructure, including the four borrow pit locations is at least 50m away from all watercourses (**SI Figure 8.1**) which will minimise potential effects to the water environment. The remaining locations where infrastructure of the Revised Proposed Development is within the 50m watercourse buffer (buffer breach A and C) are described and mitigated in 8.2.4 above.

8.3.3 With the embedded mitigation measures in place, including the 50m+ buffers, following good practice construction and site drainage management guidance from relevant bodies (e.g. SEPA, CIRIA), the magnitude of the effect of increased sediment/silt runoff causing a deterioration in surface water quality in waterbodies and watercourses within and downstream of the Site during construction is considered to be **negligible** and of short duration. The sensitivity of all downstream receptors is high, with respect to water quality, and the significance of the effect is considered to be **minor**.

8.3.4 Embedded mitigation measures to minimise the risk of pollution and accidental spillage will minimise the likelihood and severity of such incidents happening, however, there is still a residual risk. The magnitude of effect of pollution of surface water and groundwater caused by the release of hydrocarbon pollution and concrete resulting from accidental oil or fuel leaks or spillages is considered to be of short duration and **negligible**. However, given the high sensitivity of the downstream water environment, the significance of the effect is considered to be **minor**.

PWS

8.3.5 With the additional data collated for PWS sources, the assessment of likely effects on PWS has been updated. **SI Table 8.1** provides an update to **Table 8.8** in the 2023 EIA Report and provides an initial assessment of the potential for effects, concluding that the following PWS have been scoped in for further assessment.

- Byrecleugh PWS
- Wedderlie PWS

8.3.6 Based on SEPA Guidance for assessing impacts of development proposals on groundwater abstractions and PWS (SEPA 2017[21]) a detailed assessment of effects on PWS is required within a 250m buffer of excavations >1m (e.g. turbines and borrow pits) and within a 100m buffer for excavations < 1m (e.g. access tracks).

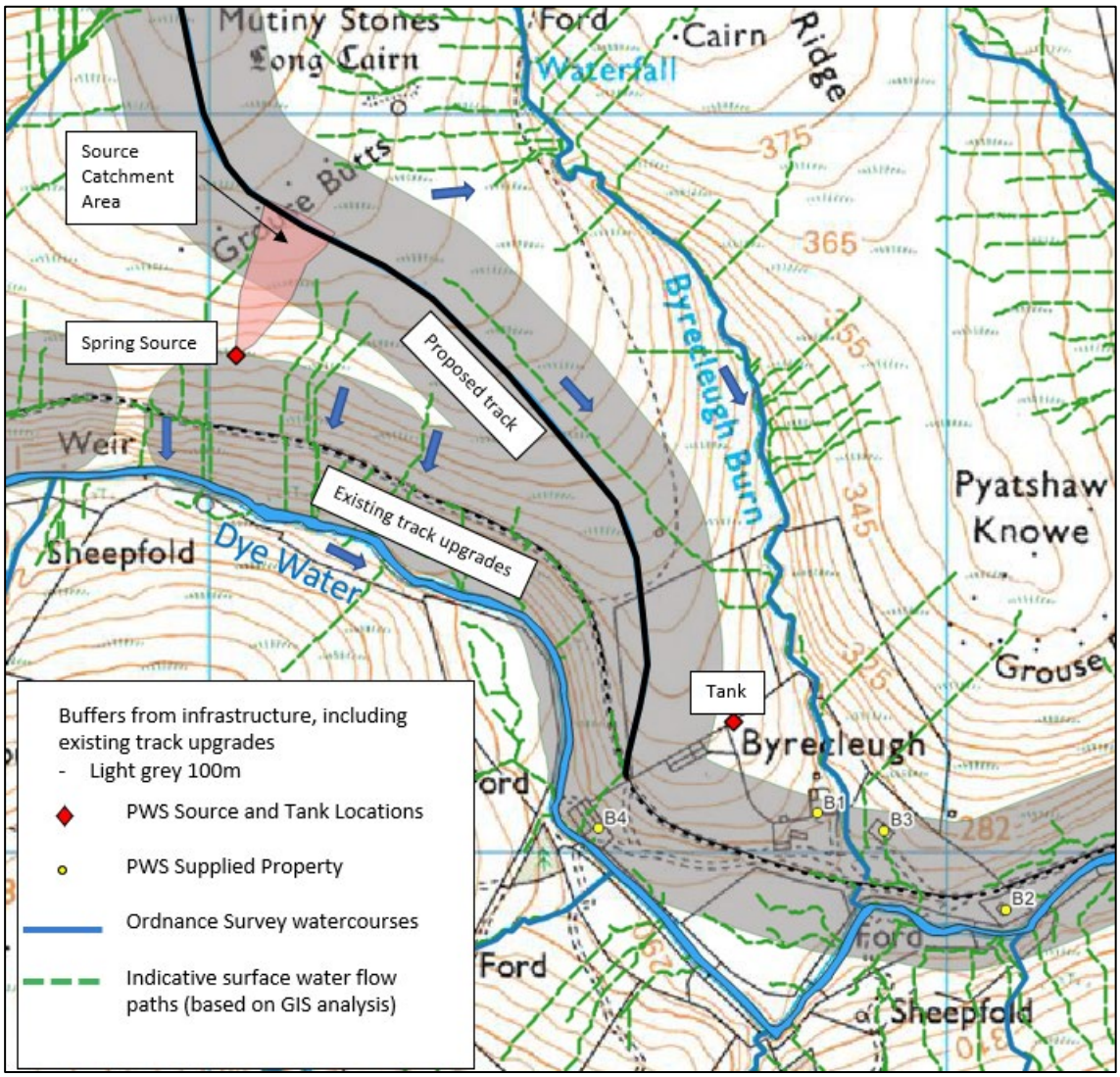
8.3.7 Flow routing analysis was carried out in QGIS GIS software using the Light Detection and Ranging (LiDAR) terrain data. In the absence of data on ground water levels and flow paths, analysis of topography, surface water flows paths and the type of PWS was used to infer hydrological and hydrogeological connectivity and identify if the Revised Proposed Development could potentially have an impact on the PWS. **Images 8.1 and 8.2** show the surface water indicative flow paths, topography and project infrastructure close to each PWS.

[21] SEPA (2017). Land Use Planning System SEPA Guidance Note 31. Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems

8.3.8 For PWS that are sourced from groundwater and/or groundwater springs, this assumes that groundwater flow paths are similar to surface water flow paths (a reasonable inference in the absence of groundwater levels and groundwater flow data). The results of the flow routing analysis were used to determine which PWS may be impacted and which PWS require additional mitigation.

8.3.9 The source of the Byrecleugh PWS is a spring, which is located on the hillside. The water is then transferred (likely via pipes) to a storage tank before distribution to the four properties (**Image 8.1**). The spring is ~92m north (upgradient) of existing access track upgrades and ~200m south (downgradient) of a proposed wind farm track to Turbines 2 and 5.

Image 8.1: Surface water flow routing and nearby infrastructure for Byrecleugh PWS

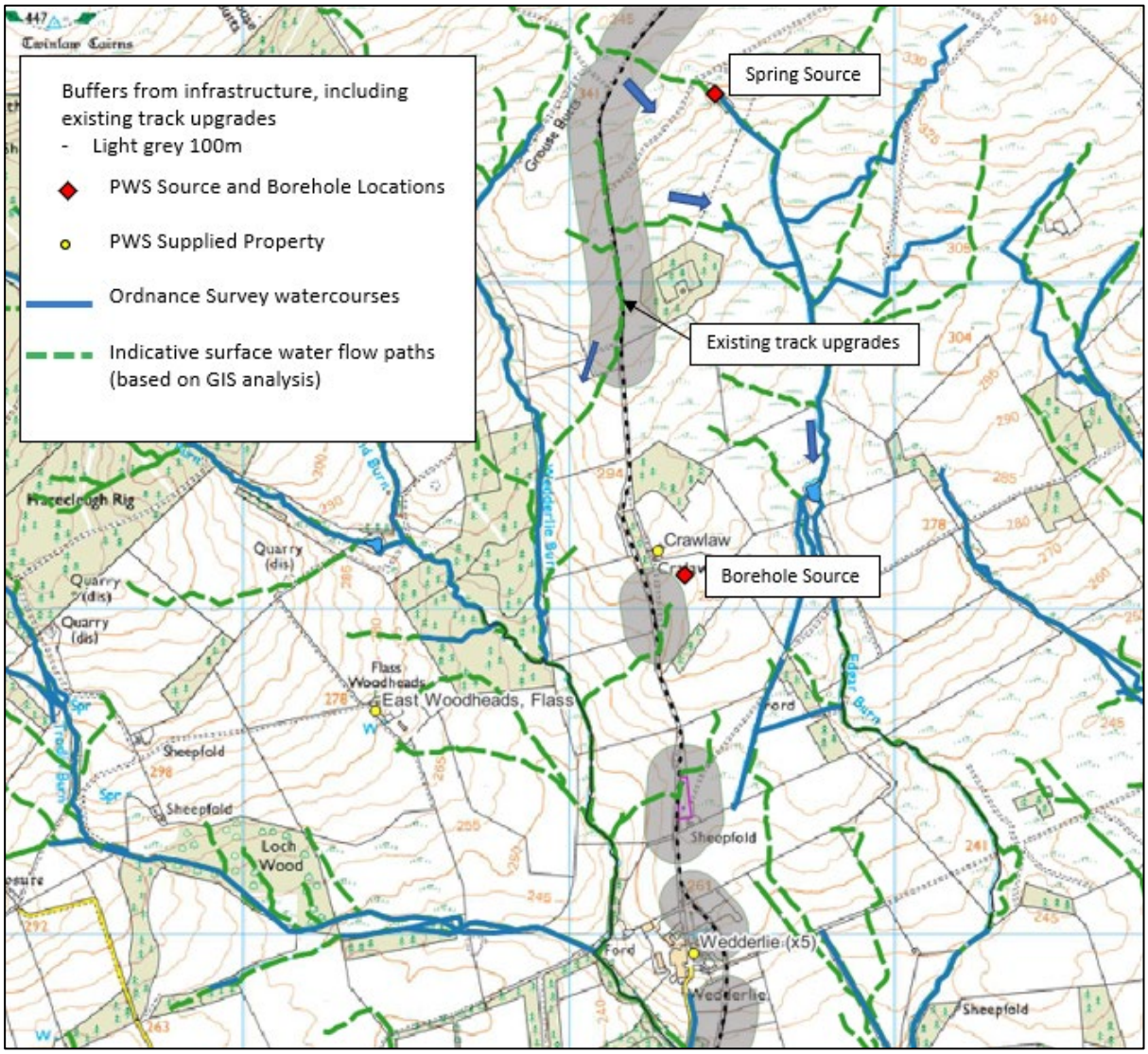


8.3.10 Watershed analysis (**Image 8.1**) shows that the proposed wind farm track follows the catchment boundary of the Dye Water to the south and the Byrecleugh Burn to the east. The surface water catchment of the source is shown in **Image 8.1**. The proposed wind farm track is at an elevation of ~389m Above Ordnance Datum (AOD) compared to the spring, which is some 30m lower at an elevation of ~358m AOD. Given the distance (~200m) and elevation difference (~ 30m) between the proposed track and the spring, excavation during track construction will have no effect on the spring source. Similarly, widening of the existing access track to the south (at an elevation of ~334m AOD), will have no effect on the spring source. However, there is a risk that any PWS pipework connecting the source to the storage tank and then to the supplied properties may be affected during construction of the new wind farm track and track upgrades. Locations of pipework will be mapped and identified in advance of construction and will be avoided during construction where possible or managed if the new track has to cross the supply pipes. With embedded mitigation measures in place during construction (described in Chapter 3 and Appendix 3.1: Outline

Construction Environmental Management Plan (CEMP) of the 2023 EIA Report), cognisance of the location of the supply pipework before and during construction and access track upgrades and monitoring of the PWS, the magnitude of effect on the PWS is considered to be **none** resulting in an effect significance of **negligible and not significant**.

8.3.11 There are two sources which supply Wedderlie PWS; a spring and a borehole, which are ~340m and ~120m east of the access track upgrades respectively (**Image 8.2**). A review of indicative surface water flow pathways indicates that the spring is downgradient of the access track upgrade and track is within the catchment area of the spring. However, as the spring is ~340m away from the track widening work there is not anticipated to be an effect to the PWS source. The borehole is upgradient of the track and ~120m away from the track upgrades and will not be impacted by track upgrades. However, there is a risk that any PWS pipework connecting the sources to the supplied properties may be affected during construction of the track upgrades. Locations of pipework will be identified in advance of construction and will be avoided during construction. With embedded mitigation measures in place during construction, cognisance of the location of the supply pipework before and during the access track upgrades and monitoring of the PWS, the magnitude of effect on the PWS is considered to be **none** resulting in an effect significance of negligible and **not significant.**

Image 8.2: Surface water flow routing and nearby infrastructure for Wedderlie PWS



8.3.12 Details and the location of the supply pipework to the supplied properties by Byrecleugh PWS and Wedderlie PWS will be determined prior to construction. Supply pipes will be avoided during construction of the wind farm track to Turbines 2 and 5 and before and during upgrades to the existing access track. Monitoring of both PWS before and during construction will be carried out. If the water quality deteriorates during construction (e.g. discoloured, high

sediment content, hydrocarbons) an emergency water supply will be installed at the PWS property, such as portable bowsers, to ensure minimal disruption of supply. The contractors will have an emergency supply of bowsers ready to deploy to impacted PWS, if required.

GWDTE

8.3.13 Turbine 4 was relocated to address SEPA comments (**Table 1.1**) to reduce the potential effects on GWDTE P1. **SI Appendix 8.4** has been updated to reflect the Revised Proposed Development and a summary of the changes to the updated GWDTE assessment is provided below:

- GWDTE P1, including TN1 and TN2 (flushes, moderately dependent GWDTE):
  - Turbine 4 is 161m south of the GWDTE and the associated wind farm track is 68m west. Following the relocation of Turbine 4 none of the permanent hardstanding now drains towards the GWDTE, although a small part of the temporary hardstanding and track drains towards the GWDTE. Based on the detailed assessment (**SI Appendix 8.4**) it is considered that the Revised Proposed Development could have a temporary, local effect of **negligible** magnitude on the GWDTE. Given the medium sensitivity of the receptor, this effect is considered to be of **minor/neutral** significance during construction before additional mitigation.
- Other flushes (TN7 and TN8) (not considered to be GWDTE):
  - No groundwater dependency was confirmed at either of these locations, thus the sensitivity of both receptors is low and they are not considered GWDTE. However, there is a concern that water movement through the flushes could be intercepted by the tracks if they are not designed to maintain hydrological connectivity and allow sub-surface flow.
  - Embedded mitigation measures (e.g. SUDS and best practice site management and construction techniques) will minimise the risk of pollution/sediment to the flushes and additional mitigation is described in the Proposed Mitigation section below. The sensitivity of both receptors is low, and the magnitude of effect on the flushes is considered to be negligible resulting in an effect significance of negligible and not significant.

8.3.14 Additional mitigation measures will be put in place during construction to maintain the baseline subsurface flows to and from the flushes at TN7 and TN8 and the GWDTE P1. Suitable cross drainage under the excavated track at TN8 and GWDTE P1 will be put in such that the track does not create a barrier to the natural subsurface drainage to keep the flush water flowing and prevent puddling upslope of or onto the track. TN7 is downgradient of a section of planned floating track, which will be considered during laying of the track to minimise reduction in water movement needed for the flush. Specific measures will be implemented on a case-by-case basis as directed by the Environmental Clerk of Works (ECoW) during construction. Pre and post-construction monitoring of the GWDTE P1 will be undertaken as outlined in **SI Appendix 8.4**

Peat

8.3.15 An update to the PLHRA was undertaken to reflect additional probing and the revised positions of infrastructure represented in the Revised Proposed Development. The findings are provided in **SI Appendix 8.3.** No new source and runout zones were identified in association with the updated layout locations and alignments, as their overlap with peat is minimal or non-existent in most cases. A response to Ironside Farrar relating to the Proposed Development layout is appended as **SI Appendix 8.5**.

8.3.16 Similarly, the PMP was updated to reflect changes in infrastructure represented in the Revised Proposed Development and additional probing (**SI Appendix 8.2**). Excavation and reuse calculations were revised for peat and soil, with a negligible (<1%) increase in peat excavation and a c. 20% increase in soil excavation (much of this being associated with the addition of a fourth borrow pit and with full probing of soil depths within the borrow pit footprints).

8.3.17 While this represents an increase in impact on soils, the addition of a new borrow pit location (Borrow Pit 3) in the southern half of the site, at elevation, on a north facing slope and adjacent to other areas of peat, provides the opportunity to undertake peat reinstatement within the borrow pit. Restoration principles to support appropriate reuse of peat within the pit are provided. This is considered a more suitable reuse proposal than the previous landscaping and extended berm proposals adjacent to the old track alignment on the approach to Turbine 4 (which is also no longer viable due to the alignment change) and over the wider infrastructure footprint.

Operational Effects

8.3.18 There are no changes to the assessment of operational effects as reported in the 2023 EIA Report; no significant effects.

Cumulative Effects

8.3.19 There are no changes to the assessment of cumulative effects as reported in the 2023 EIA Report; no significant effects.

8.4 Summary of Changes to Significance of Effects

8.4.1 There are no changes to the significance of residual effects with the Revised Proposed Development. However, the Revised Proposed Development is an improvement in terms of effects to the water environment, as the borrow pit which encroached a watercourse buffer has been relocated away from the Dye Water buffer and all borrow pits are now outwith all watercourse buffers. In addition, the relocation of the turbine hardstanding for Turbine 4 to the south-east has reduced the pre-mitigation effect on the nearby GWDTE, which was assessed to be of minor significance in the 2023 EIA and is now assessed to be of neutral significance. The residual effect on the GWDTE is of minor/neutral significance.

8.5 Proposed Mitigation

8.5.1 No additional mitigation above that described previously in this chapter is required.

9. Chapter 9

9.1 Noise and Vibration

9.1.1 **Chapter 9: Noise and Vibration** of the 2023 EIA Report presents the findings of the noise and vibration assessment for the Proposed Development. This was supported by **Appendix 9.1** of the EIA Report which set out the technical information utilised for the noise and vibration assessment.

9.1.2 The purpose of this chapter of the SI is to:

- Assess the potential effects of the Revised Proposed Development.
- Consider the implications of additional information received since completion of the 2023 EIA Report regarding neighbouring cumulative wind farm developments.

9.2 Clarification / Additional Information

9.2.1 No additional clarification/additional information is required as no specific queries have been raised by consultees in relation to noise and vibration.

9.3 Updated Assessment of Effects

Construction Effects

9.3.1 The assessment of construction noise effects in **Chapter 9** of the 2023 EIA Report for the Proposed Development was based on the closest distance from each potential construction activity to the closest noise-sensitive receptors, presenting the assessment on a worst-case basis. The smallest separation distances between the infrastructure of the Revised Proposed Development and noise-sensitive properties are either similar or increased compared to that assessed in the 2023 EIA Report, leading to similar or lower worst-case construction noise effects.

9.3.2 Specifically, the Revised Proposed Development results in a marginally increased minimum distance between all proposed borrow pits and the nearest potential noise-sensitive receptor (Byrecleugh Farm), therefore the worst-case levels of construction noise associated with quarrying activities will be lower. Similarly, the removal of Turbine 3 results in the worst-case noise levels from construction activities associated with turbine foundation works and erection also reducing. However, these activities were assessed in the 2023 EIAR as being associated with negligible effects, therefore this conclusion remains unchanged.

9.3.3 Other construction activities, including construction traffic and track upgrade work, which would occur at closer distances from noise-sensitive locations and were assessed to be associated with minor effects, would be effectively unchanged or resulting in similar effects. The proposed embedded measures to manage construction noise also remain applicable. Therefore, the conclusions of the assessment presented in the 2023 EIAR continue to apply.

9.3.4 The construction activities associated with the Revised Proposed Development are therefore still predicted to result in temporary negligible to minor impacts at most on highly sensitive receptors, which equate to worst-case temporary minor effects, which are **Not Significant** in EIA terms.

Operational Effects

9.3.5 The components of the Revised Proposed Development which would be most relevant to the operational noise assessment include the removal of Turbine 3 which was located closest to the Killpallet Cottage property (approximately 1.2 km) and was one of the turbines closest to Byrecleugh Farm (approximately 2.2 km). The other proposed changes to the locations of turbines (such as the movements of Turbines 4 and 9) will have very small effects on operational noise levels, as they are relatively distant from noise-sensitive receptors.

9.3.6 The Revised Proposed Development is therefore expected to result in reduced operational noise levels from those presented in the 2023 EIAR. The conclusion in the 2023 EIAR, that wind turbine noise from the Proposed Development, even when operated together with adjacent wind farms (as required in ETSU-R-97), will remain within the ETSU-R-97 noise limits, will therefore still apply. The operational effect of the Proposed Development is therefore considered to be **Not Significant** in EIA terms.

9.3.7 The potential for changes to the cumulative operational assessment are considered further in the next section.

Cumulative Effects

9.3.8 Since submission of the Section 36 application for consent for the Proposed Development, the application for the Newlands Hill Wind Farm has been submitted and the relevant noise assessment presented in Chapter 12 of the Newlands Hill EIA Report[22]. **Chapter 9** and **Appendix 9.1** of the 2023 EIA Report presented a preliminary assessment of cumulative noise from the Newlands Hill Wind Farm based on what was then a likely wind farm layout for that scheme[23]. This included an assessment at the location of Faseny Cottage as it was considered noise-sensitive in the 2023 EIA Report and was identified as the closest potential receptor to Newlands Hill Wind Farm where potential cumulative impacts with the Proposed Development (Dunside Wind Farm) may be likely. This assessment concluded that the predicted contribution from the Proposed Development (Dunside Wind Farm) at Faseny Cottage was negligible and that the Newlands Hill Wind Farm was considered unlikely to lead to significant cumulative operational effects.

9.3.9 The Newlands Hill EIAR however sets out (at paragraph 12.65 in Chapter 12 of its EIAR) that Faseny Cottage was not considered as a noise-sensitive receptor as it is not a permanently occupied residential property, as agreed with East Lothian Council. Chapter 12 of the EIA Report for Newlands Hill Wind Farm also included a cumulative noise assessment that considered the Proposed Development (Dunside Wind Farm) in addition to the operational Fallago Rig Wind Farm. This assessment concluded that the associated cumulative noise effects would be negligible, which is consistent with the preliminary assessment presented in the 2023 EIA Report for the Proposed Development.

9.3.10 Since submission of the Section 36 application for consent for the Proposed Development, a planning application for the Longcroft Wind Farm has also been submitted[24]. This site is located south-west of the operational Fallago Rig Wind Farm. The closest turbines of the Longcroft Wind Farm are located more than 5 km from the noise-sensitive receptors considered in the assessment for the Proposed Development (Byrecleugh Farm and Killpallet Cottage). Chapter 12 of the EIA Report for Longcroft Wind Farm included a cumulative noise assessment that considered the Proposed Development (Dunside Wind Farm) in addition to the existing Fallago Rig Wind Farm. This assessment concluded that there were no properties at which significant cumulative impacts would arise, which is consistent with the separation distance and relative location of the proposals.

9.3.11 Therefore, although Longcroft Wind Farm was not considered in the 2023 EIA Report, as the operational noise effects of the Revised Proposed Development are similar or lower than those assessed in the Longcroft EIAR and these were determined to be negligible, it is not considered necessary to undertake a further detailed cumulative noise assessment.

9.3.12 Finally, Ditcher Law and other wind farm developments located further away, are considered to have negligible noise impacts and do not require further consideration.

9.3.13 In summary, no additional significant cumulative operational or construction effects were identified in addition to those presented in the EIA Report for the Proposed Development. The proposed design modifications represented as the Revised Proposed Development would not change this conclusion.

9.3.14 In conclusion, no significant construction noise effects were identified. Wind turbine noise from the Revised Proposed Development, when operated together with adjacent wind farms, will also remain within the ETSU-R-97 noise limits, and the cumulative effect is therefore considered to be **Not Significant** in EIA terms.

9.4 Summary of Changes to Significance of Effects

9.4.1 The proposed design modifications presented in the Revised Proposed Development, and the additional cumulative schemes considered will not change the outcome of the noise and vibration assessment presented in the 2023 EIA Report and no additional significant effects were identified.

9.4.2 The construction activities (including associated traffic) will result in temporary minor effects at most, which are **Not Significant** in EIA terms.

[22] Energy Consents Unit application reference ECU00004603.
[23] At the time the 2023 EIA Report was being drafted, the planning application for the Newlands Hill Wind Farm had not been submitted. The assessment of potential cumulative noise from this Wind Farm was based on a likely finalised wind turbine layout obtained from the developer of Newlands Hill Wind Farm and an indicative wind turbine model.
[24] Energy Consents Unit application reference ECU00004774.

9.4.3 Operational noise levels comply with the criteria of the ETSU-R-97 guidance commended by planning policy for the assessment of wind farm noise. The effect is therefore considered to be **Not Significant** in EIA terms.

9.5 Proposed Mitigation

9.5.1 No additional mitigation is required.

10. Chapter 10

10.1 Access, Traffic and Transport

10.1.1 **Chapter 10: Access, Traffic and Transport** of the 2023 EIA Report presents the findings of the access, traffic and transport assessment for the Proposed Development, in relation to the construction phase, as this is considered to be the phase which has the greatest potential impact. This was also supported by a Transport Assessment, **Appendix 10.1** of the 2023 EIA Report.

10.1.2 The purpose of this chapter of the SI is assess the potential effects of the Revised Proposed Development upon access, traffic and transport matters.

10.2 Clarification / Additional Information

10.2.1 No additional clarification/additional information is required as no specific queries have been raised by consultees in relation to access, traffic and transport.

10.3 Updated Assessment of Effects

Construction Effects

10.3.1 A review of the Revised Proposed Development, including material calculations has been undertaken, taking cognisance of the changes detailed in **Chapter 3**. This has established that the change in respect to transport effects is minimal, with an overall reduction in peak construction traffic from 110 daily journeys (42 car / lights and 68 HGV journeys) to 108 daily journeys (42 car / lights and 66 HGV journeys). Month 11 remains the peak month in terms of construction activity, with a reduction in the number of HGV movements from 68 to 66.

10.3.2 The assessment of construction effects in **Chapter 10** of the 2023 EIA Report assumed that 50% of the material for tracks, hardstandings and compound areas would be imported to the site, to provide a robust assessment. This represents the single biggest generator of trips during the construction phase. The on-site borrow pits will still be sufficient to provide all required aggregate materials for use on the site and the assessment undertaken was an over-estimate and suitably robust. The assessment of significance in **Chapter 10** of the 2023 EIA Report found that the effects on the following receptors were considered significant, prior to the application of mitigation measures:

- D52 Proposed Site Access Road Users;
- B6456 Users; and
- Core Path / Public Right of Way Users within the Site.

10.3.3 The mitigation measures set out in **Chapter 10** of the 2023 EIA Report, comprising a Construction Traffic Management Plan (CTMP), Abnormal Load Transport Management Plan, Access Management Plan and Staff Travel Plan, resulted in no significant residual effects in respect of traffic and transport issues. The residual effects were all assessed to be slight or insignificant and would occur during the construction phase only, and they were temporary and reversible.

10.3.4 Given that the proposed design modifications are of a minor scale and result in a reduction in the predicted traffic movements during the construction phase, no further assessment is required from that previously provided in **Chapter 10** of the 2023 EIA Report and the previously provided assessment of effects are therefore unchanged from those reported.

Operational Effects

10.3.5 The traffic effects during the operational phase of the Proposed Development were scoped out of the assessment undertaken in **Chapter 10** of the 2023 EIA Report. The Revised Proposed Development does not change the original position whereby traffic effects during the operational phase will be low, with two to three vehicles per day for maintenance purposes, far below the recognised thresholds for triggering a formal transport assessment. On this basis, no assessment is required, and operational effects remain scoped out of the access, traffic and transport assessment.

Cumulative Effects

10.3.6 A review of the Scottish Borders Council online planning portal[25] and the Scottish Government's Energy Consents Unit portal[26] has been undertaken in line with the review carried out within **Appendix 10.1** of **Chapter 10** of the 2023 EIA Report, to identify any consented developments in the vicinity of the Proposed Development which will generate significant traffic and therefore considered as part of any cumulative assessment.

10.3.7 No onshore wind farm developments or other potentially significant traffic generating developments with extant planning permission have been identified, that should be considered within the SI. This remains as per **Chapter 10** of the 2023 EIA Report, which did not include an assessment in relation to cumulative effects.

10.4 Summary of Changes to Significance of Effects

10.4.1 There are no changes to the Significance of Effects (no significant effects) as reported previously in **Chapter 10** of the 2023 EIA Report.

10.5 Proposed Mitigation

10.5.1 No additional mitigation is required.

[25] https://eplanning.scotborders.gov.uk/online-applications/search.do?action=simple&searchType=Application

[26] https://www.energyconsents.scot/ApplicationSearch.aspx?T=1

11. Chapter 11

11.1 Aviation

11.1.1 **Chapter 11: Aviation** of the 2023 EIA Report presents the findings of the aviation assessment for the Proposed Development. This was supported by **Appendix 11.1** of the 2023 EIA Report which set out the aviation lighting and mitigation proposals. An updated aviation and lighting mitigation report has been prepared to support this SI and is provided as **SI Appendix 11.1**.

11.1.2 The purpose of this chapter of the SI is to identify and assess any differences to aviation operations resulting from the Revised Proposed Development (turbine layout specifically) and address the clarifications identified below.

11.2 Clarification / Additional Information

11.2.1 As outlined in **Table 1.1**, consultation responses to the Proposed Development have been received from NATS Safeguarding, Edinburgh Airport and the MoD. Responses to the consultation points raised are discussed in **Table 1.1** and the Revised Proposed Development are not expected to result in any substantive changes to the mitigation solutions which are currently being considered by the aviation authorities. **SI Appendix 11.1** will be shared with the relevant authorities to seek updated approvals as part of the SI submission process. In summary the issues and solutions are:

- Edinburgh Airport Instrument Flight Procedures – an Instrument Flight Procedure assessment was undertaken by a CAA Approved Procedure Design Organisation. The outcome is that one minor change will be required to accommodate the Revised Proposed Development and Edinburgh Airport have agreed to undertake that change before the turbines are constructed.
- NATS En Route Ltd (NERL) radar – an agreement is in place for the Applicant to fund a NERL designed and already available mitigation solution.
- MOD - the Applicant is making progress in discussions with the MOD on the three issues of concern which are:
  - Low Flying – an MOD approved lighting scheme using Infra-red lighting will be installed.
  - Threat Radar at Charterhall – this issue is still under discussion but likely to be resolved shortly.
  - Air Defence Radar – the MOD are considering their position and are expected to respond in the coming weeks, however, it is likely that a SERCO report will confirm that technical mitigation is feasible and available.

11.3 Updated Assessment of Effects

11.3.1 Radar modelling has been undertaken against each subject radar, including Edinburgh Airport, RRH Brizlee Wood and the NATS En Route radar at Great Dun Fell. The results show that in all cases, there is a slight reduction in the technical effect of the Revised Proposed Development on the performance of the radar, however the differences are minor and will have no effect on the operational effect on the usage of the subject sensors.

11.3.2 Aviation Lighting will be slightly altered as described in the updated Aviation Lighting and Mitigation report; **SI Appendix 11.1**, however, the effect will be a slight reduction in lighting that will make no substantive difference to that already reported in the 2023 EIA Report.

11.4 Proposed Mitigation

11.4.1 No additional mitigation is required.

12. Chapter 12

12.1 Other Issues

12.1.1 **Chapter 12: Other Issues** of the 2023 EIA Report presents the findings of the assessment for the Proposed Development; this was supported by **Appendix 12.1: Carbon Balance Assessment** which has been updated through this SI (**SI Appendix 12.1**).

12.1.2 The purpose of this chapter of the SI is to present the findings of the assessment of likely effects of the Revised Proposed Development on the following topics:

- Climate Change Mitigation (including carbon balance) and Adaptation.
- Shadow Flicker
- Population and Human Health.

12.2 Clarification / Additional Information

12.2.1 No clarification/additional information is presented as no specific queries have been raised by consultees in relation to the topics outlined above.

12.3 Climate Change

Updated Assessment of Effects

Construction Effects

12.3.1 Carbon dioxide emissions (CO_2e) associated with the construction of the Revised Proposed Development will be reduced as a result of the reduction in turbine numbers. Overall, the Revised Proposed Development remains a net generator of GHG emissions during construction and based on a qualitative consideration of the likely scale of emissions, as reported in the 2023 EIA Report effects remain as **Minor significance**.

Operational Effects

12.3.2 The Revised Proposed Development will have a maximum installed capacity of 91.8 megawatts (MW) based on the candidate turbines. It is estimated that the number of households that can be powered by the Revised Proposed Development is 53,000[27], a reduction from the 62,000 homes estimated in the 2023 EIA Report. The payback time of CO_2e has also been updated to account of the reduction in installed capacity. The expected carbon payback period is calculated to be approximately 1.7 years; a slight reduction from 1.8 years calculated in the 2023 EIA Report, assuming the Revised Proposed Development will offset the emissions associated with a grid mix of electricity generation.

12.3.3 Assuming a 35-year operational life and based on an overall expected annual carbon saving of around 46,000 tCO_2e and a total carbon loss (during both construction and operation) of just around 78,000 tCO_2e, this equates to a total saving of approximately 1.5 million tCO_2e (46,000 x 35 minus the emissions emitted) over the Revised Proposed Development's operational lifetime as well as over 5,700 tonnes of CO_2e gains estimated. The Site is estimated to produce significant gains over the lifetime of the windfarm through the re-wetting of degraded peat bog (**SI Appendix 6.1**).

12.3.4 Whilst it has not been possible to calculate construction traffic emissions for HGVs and personnel, overall, it is considered that these will be offset at an early stage of the Revised Proposed Development's operational life along with any backup generation if required, and that a **Positive (significant)** effect is likely on balance. The Revised Proposed Development's carbon saving potential will contribute to meeting Scotland's net zero greenhouse gas emissions targets.

[27] Load factors based on the five year rolling averages on unchanged configuration basis using Table 6.5 of 'Digest of UK Energy Statistics' - latest figures as per July 2022 release. Digest of UK Energy Statistics (DUKES): renewable sources of energy - GOV.UK (www.gov.uk).

12.3.5 The introduction of the Revised proposed Development is unlikely to affect the judgment of effects, or the ability of receptors to adapt to climate change as previously reported in the 2023 EIA Report.

Mitigation

12.3.6 No additional mitigation is required.

12.4 Shadow Flicker

Updated Assessment of Effects

12.4.1 The assessment of shadow flicker effects in **Chapter 12** of the 2023 EIA Report for the Proposed Development was based on the closest distance from each turbine to the closest residential receptors, using a maximum rotor diameter of 180m.

12.4.2 The separation distances between the infrastructure of the Revised Proposed Development and properties are either similar to or increased compared to that assessed in the 2023 EIA report, and the maximum rotor diameter of 180m remains the same.

12.4.3 The Revised Proposed Development has resulted in the reduction of turbine heights (Turbines 1, 4, 5 and 6) and the removal of Turbine 3 which would result in similar or lower worst-case operational shadow flicker effects at the properties assessed in the 2023 EIA Report (**Table 12.8**).

12.4.4 In conclusion, no significant shadow flicker effects have been identified and the potential for shadow flicker effects from the Revised Proposed Development on residential receptors is considered to be **not significant** in the context of the EIA Regulations.

Mitigation

12.4.5 No additional mitigation is required.

12.5 Population and Human Health, including Dust

Updated Assessment of Effects

12.5.1 The assessment of likely health effects that could arise as a result of construction and operational noise, construction and operational dust, and construction traffic accidents remain valid as presented in the 2023 EIA Report. Mitigation measures to ensure PWS are not polluted will be implemented as discussed in **Chapter 8** of the SI.

12.6 Summary of Changes to Significance of Effects

12.6.1 The modifications to the design presented in the Revised Proposed Development will not change the significance of effects to any of the topics above as presented in the 2023 EIA Report, and no additional effects have been identified.

13. Chapter 13

13.1 Summary of Significant Effects

13.1.1 **Chapter 13: Summary of Significant Effects** of the 2023 EIA Report presents a summary of the predicted significant effects of the Development prior to, and following, the implementation of committed mitigation measures. of the Development.

13.1.2 This review has confirmed that the significant effects presented in Chapter 13 of the 2023 EIA Report remain unchanged with the exception of one landscape and visual amenity effect as reported in Chapter 4 of this SI Report and summarised in **Table 13.1** below.

Table 13.1 SI Summary of Significant Effects

Landscape and Visual Amenity		
Receptor	**2023 EIA Report Cumulative Effect**	**SI Revised Proposed Development Cumulative Effect**
Operational Effects on Views and Visual Amenity		
Viewpoint 9: Dirrington Great Law	**Moderate (Significant)**	**Major (Significant)**

13.1.3 For ease of reference, a summary of all significant effects from the Revised Proposed Development are presented in **Tables 13.2** (landscape and visual amenity)**, 13.3** (cultural heritage**)**, **13.4** (traffic and transport) **and 13.5** (other issues) below. All other reporting in Chapter 13 of the 2023 EIA Report remains valid.

Table 13.2 Summary of Significant Effects: Landscape and Visual Amenity

Landscape and Visual Amenity		
Receptor	**Significance of Residual Effect**	**Cumulative Effect**
Construction Effects		
The Site	**Major (significant)**	n/a
Operational Effects on Landscape Character		
The Site	**Major (significant)**	n/a
LCT 90 - Dissected Plateau Moorland)	**Major (significant) (within the Site)** **Moderate (significant) (within 5 km)**	Scenario 1 and Scenario 2: **Major (significant) (within the Site)** **Moderate (significant) (within 5 km)**
LCT 105 - Upland Fringe Moorland with Hills	**Moderate (significant) (within 7 km)** Minor (not significant) (beyond 7 km)	Scenario 1 and Scenario 2: **Moderate (significant) (within 7 km)** Minor (not significant) (beyond 7 km)
LCT 266 – Plateau Moorland – Lothians	**Moderate (significant) (within 5 km)** Minor (not significant) (5-10 km)	Scenario 1 and Scenario 2: **Moderate (significant) (within 5 km)** Minor (not significant) (5-10 km)
Operational Effects on Views and Visual Amenity		
Viewpoint 1: Twin Law Cairns, Southern Upland Way	**Major (significant)**	Scenario 1 and Scenario 2: **Major (significant)**

Landscape and Visual Amenity		
Receptor	**Significance of Residual Effect**	**Cumulative Effect**
Viewpoint 2: Nun Rig, Southern Upland Way	**Major (significant)**	Scenario 1 and Scenario 2: **Major (significant)**
Viewpoint 3: Minor road near Wanside Rig junction	**Moderate (significant)**	Scenario 1: **Moderate (significant)** Scenario 2: **Major (significant)**
Viewpoint 4: Watch Water Reservoir, Southern Upland Way	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Viewpoint 5: Minor road near Wrunk Law	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Viewpoint 6: Spartleton Hill	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Viewpoint 8: B6456 near Bedshiel	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Viewpoint 9: Dirrington Great Law	**Moderate (significant)**	Scenario 1 and Scenario 2: **Major (significant)**
Viewpoint 11: Edgarhope Wood, Southern Upland Way	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Operational Effects on Routes		
Minor road via Longformacus	**Moderate (significant)**	Scenario 1 and Scenario 2: **Moderate (significant)**
Southern Upland Way	**Major (significant) (within 5 km)**	Scenario 1 and Scenario 2: **Major (significant) (within 5 km)**
Core Paths and Rights of Way within around 5 km of the Site	**Major (significant)**	Scenario 1 and Scenario 2: **Major (significant)**

Table 13.3 Summary of Significant Effects on Cultural Heritage

Cultural Heritage			
Receptor	**Significance of Effect**	**Mitigation**	**Significance of Residual Effect**
Operational Effects			
Mutiny Stones, Long Cairn 1100m NNW of Byrecleugh (SM361)	**Moderate (significant)**	N/A	**Moderate (significant)**
Byrecleugh Farmstead 1900m WNN of (SM4549)	**Moderate (significant)**	N/A	**Moderate (significant)**

Table 13.4 Significant Traffic & Transport effects

Receptor	Potential Effect	Significance of Effect	Significance of Residual Effect

D52 Proposed Site Access Road Users	Severance	**Major (Significant)**	Minor Not significant
	Driver Delay	**Moderate / Minor (Significant)**	Minor Not significant
	Pedestrian Delay	**Major (Significant)**	Minor Not significant
	Pedestrian Amenity	**Major (Significant)**	Minor Not significant
	Fear & Intimidation	**Major (Significant)**	Minor Not significant
	Accidents & Safety	**Moderate (Significant)**	Minor Not significant
B6456 Users	Pedestrian Delay	**Moderate (Significant)**	Minor Not significant
	Pedestrian Amenity	**Major / Moderate (Significant)**	Minor Not significant
Core Path / Public Right of Way Users within the Site	Severance	**Major (Significant)**	Minor Not significant
	Driver Delay	**Moderate / Minor (Significant)**	Minor Not significant
	Pedestrian Delay	**Major (Significant)**	Minor Not significant
	Pedestrian Amenity	**Major (Significant)**	Minor Not significant
	Fear & Intimidation	**Major (Significant)**	Minor Not significant
	Accidents & Safety	**Major / Moderate (Significant)**	Minor Not significant

Table 13.5 Summary of Significant Effects on Other Issues

Other Issues: Climate Change Mitigation and Adaptation			
Predicted Effect	**Significant**	**Mitigation**	**Significance of Residual Effect**
Operation Effects			
Carbon Losses and Carbon Offsetting (climate change mitigation)	**Moderate (positive)**	None	**Moderate (positive)**

Cumulative Operation Effects			
Carbon Losses and Carbon Offsetting (climate change mitigation)	**Major (positive)**	None	**Positive (significant)**