

5. Archaeology and Cultural Heritage

5.1 Introduction

- 5.1.1 This Chapter presents the assessment of the likely significant effects on archaeology and cultural heritage receptors arising from Dalfad Wind Farm ('the Proposed Development') during construction and operation.
- 5.1.2 The 'cultural heritage' of an area comprises archaeological sites, historic buildings, Inventoried Gardens and Designed Landscapes (GDLs), Inventoried Battlefields and other historic environment features. Alongside its inherent values, the 'setting' of an asset may also contribute to its cultural significance.
- 5.1.3 The cultural heritage impact assessment identifies cultural heritage assets that may be subject to significant effects, both within the footprint of the infrastructure of the Proposed Development and within a surrounding radius of 10km; establishes the potential for currently unknown archaeological assets to survive buried within the site; assesses the predicted effects on these assets; and proposes a programme of mitigation where appropriate. It will consider direct effects (such as physical disturbance or effects through changes within the setting of assets), indirect effects (such as might result from dewatering), and cumulative effects (where assets affected by the Proposed Development are also likely to be affected by other development proposals of a similar nature). The proposed approach to the assessment of effects on cultural heritage is set out below.
- 5.1.4 The objectives of the chapter are to:
- describe the current baseline established from desk studies, targeted surveys and feedback obtained during consultation with statutory consultees;
 - describe the assessment methodology and significance criteria used in completing the impact assessment;
 - describe the potential effects, including direct (physical), direct (setting), indirect, and cumulative effects;
 - assess the residual effects remaining following the implementation of mitigation measures; and
 - reach a conclusion on the likely significant effects based on the information gathered and the analysis and assessments undertaken.
- 5.1.5 The chapter then highlights any further measures recommended to prevent, minimise, reduce, or offset any environmental effects.
- 5.1.6 The chapter is supported by:
- **Figures 5.1 – 5.14**, referenced in the text where relevant;
 - **Technical Appendix 5.1**: Gazetteer of Heritage Assets within 1km of Proposed Development;
 - **Technical Appendix 5.2**: Cultural Heritage Appraisal;
 - **Technical Appendix 5.3**: Appraisal of AIL Over-run Areas; and
 - **Technical Appendix 5.4**: Appraisal of Grid Connection Route.



5.2 Consultation

5.2.1 **Table 5-1** summarises the consultation that was undertaken with relevant bodies during the EIA process.

Table 5-1: Summary of Consultation

Consultation Details	Consultee Comments	Applicant Response
Historic Environment Scotland		
Historic Environment Scotland (HES) – Scoping Response 05 March 2026	HES notes that the Proposed Development has the potential to result in setting impacts on heritage assets within their remit, although no assets are located within the development site itself. While they are broadly content with the scope of the assessment as proposed, they consider the assessment methodology to be inappropriate and not aligned with relevant guidance. Scope of assessment HES is generally content with the proposed scope, including the use of ZTV analysis and the consideration of assets beyond 10km. No additional assets are identified at this stage. Methodology HES raises concerns that the proposed methodology does not accord with the EIA Handbook or New EIA Report Guidance. In particular, they note inconsistencies and deviations in the definitions of magnitude of impact and the significance matrix, which may lead to the underestimation of effects. They also highlight structural issues within the matrix, including errors and a bias toward lower-level effects. HES further notes that the inclusion of “integrity of setting” within the assessment methodology is inappropriate, as this is a policy test under NPF4 and should not be conflated with the EIA assessment of magnitude of impact. They advise that definitions of impacts should be consistent with established guidance. Potential setting impacts HES confirms that impacts are likely to relate to the setting of heritage assets. They identify potential for significant adverse impacts on Kyle Castle (SM3311), given its proximity to the proposed turbines, and support the	Further consultation with HES was undertaken in the form of a response letter with revised methodology appended, dated the 09 April 2026. Methodology The revised methodology made the following amendments: • Removal of ‘very low beneficial’ category in Magnitude of Impact table • Changes to Significance of Effect table as a result of the introduction of the above • Amendments to section regarding application of NPF4 and integrity of setting Potential settings impacts An assessment of potential impacts upon the assets agreed to be carried forward at the scoping stage can be found in Section 5.10: Operation.



Consultation Details	Consultee Comments	Applicant Response
	inclusion of visualisations for this asset. Category A Listed Buildings and GDLs HES is content with the assets proposed for inclusion in the assessment and the approach to visualisations, including Dumfries House, Sorn Castle, The Temple, Avenue Bridge and the Dovecote at Dumfries House. Guidance and policy HES advises that the EIA Report should align with the New EIA Report Guidance and EIA Handbook, and consider the Historic Environment Policy for Scotland and relevant Managing Change guidance, particularly in relation to setting.	
Historic Environment Scotland – Pre-application Consultation Response from Cailee Mellon 17 April 2026	HES responded on the 17 April 2026, maintaining their concerns regarding the inclusion of the ‘very low’ level of magnitude in the Magnitude of Impact table and the changes to the Significance of Effect Matrix, as well as the discussion of integrity of setting and the treatment of asset preservation and condition in relation to significance.	A further round of consultation was therefore undertaken on 22 June 2026, with a revised methodology appended, including amendments made as follows: • Removal of ‘very low adverse’ category from the Magnitude of Impact table • Updates to Significance of Effect table due to removal of the above • Amendments to section regarding application of NPF4 and integrity of setting and preservation In addition, ongoing construction at Dumfries House GDL means location proposed for visualisation is inaccessible. HES was contacted by email on 26 May 2026 to confirm whether a wireline from the original location would be suitable or whether a specific alternative viewpoint (VP) was preferred.
Historic Environment Scotland - Pre-application Consultation Email response from Cailee Mellon 15 June 2026	HES responded – content for consultant to identify an alternative VP location.	An alternate location for Dumfries House GDL was proposed, located at NS 54815 20189 communicated to HES within the consultation letter dated the 22 June 2026



Consultation Details	Consultee Comments	Applicant Response
Historic Environment Scotland – Pre-application Consultation Response from Cailee Mellon 04 August 2026	HES responded on 4 August 2026, welcoming the removal of references to ‘preservation’ and confirming acceptance of the revised Dumfries House GDL viewpoint location. HES maintained its position that the assessment methodology should use the magnitude of impact definitions and significance of effect matrix contained within the EIA Handbook or provide robust justification for any deviations. HES also advised that the forthcoming assessment should accord with the Streamlining EIA for Onshore Wind Farms Guidelines and relevant HEPS and Managing Change in the Historic Environment: Setting guidance.	The method statement was updated to closer reflect the EIA method and deviations justified.
Historic Environment Scotland – Response to Gatecheck Report 19 August 2026	HES is broadly content that the Gatecheck Report reflects its involvement in the EIA process. HES confirmed that the proposed viewpoint for Dumfries House GDL is acceptable and welcomed amendments to the assessment methodology addressing previous concerns regarding the treatment of asset preservation and condition. However, HES maintains that the magnitude of impact table and significance of effect matrix remain inconsistent with the EIA Handbook and continues to disagree with this aspect of the methodology. HES recommends that the assessment accords with the EIA Handbook, HEPS and relevant Managing Change guidance.	The method statement was updated to more closely reflect the EIA method and deviations justified.
East Ayrshire Council		
East Ayrshire Council	Non-inventory Garden and Designed Landscapes (NIDLs) are also heritage assets and should be considered within the assessment of potential effects. While the assessment may ultimately be limited to GDLs within 5 km of the site, the Council considers that it is not currently possible to define an appropriate study area without first undertaking a heritage assessment exercise comparable to	A high-level review of potential impacts on the setting of NIDLs within 10km was undertaken. As a result of this review, it was determined no NIDLs outwith 5km had the potential for an impact on their setting. NIDLs within a 5km Study Area have been assessed for potential impacts upon their setting. These assessments can be found in Technical Appendix 5.2 .



Consultation Details	Consultee Comments	Applicant Response
	that submitted with the Scoping Report. Such an exercise should initially consider non-inventory GDLs within a 10km radius before any reduction in scope is justified. Subject to agreement from relevant consultees, including HES where within their remit, the Council generally agrees with the list of heritage assets included in the Appendix to the Scoping Report. This position is without prejudice to the determination of any future application, including the final layout of the development, and the Council reserves the right to require further assessment of individual assets where considered necessary. The Council also advises that flexibility should be retained in the selection of viewpoints, as visualisations may be required for certain heritage assets to support the assessment of effects on setting. They note that the Applicant should engage with HES and the West of Scotland Archaeology Service (WoSAS) regarding the proposed methodology and approach to the assessment of heritage assets within the EIA Report.	

5.3 Assessment Methodology and Significance Criteria

- 5.3.1 In September 2025, guidance on the information required to be presented in EIA reports for onshore wind farms was released. To ensure that the methodology is in line with comments received at Scoping and further post-scoping consultation (outlined in **Table 5-1**) and the updated guidance, the method shown in **Section 5.3** of this report and used throughout the assessments has been updated from that submitted with the Scoping Report.
- 5.3.2 The Proposed Development has the potential to result in effects upon the cultural significance of heritage assets where it changes their baseline condition and/or their setting.
- 5.3.3 Impacts on cultural heritage assets have been identified and assessed with reference to the guidance set out in the EIA Handbook¹ and the Historic Environment Policy for Scotland (HEPS), specifically HEP3 and HEP4².
- 5.3.4 In accordance with the EIA Regulations and the EIA Handbook, this assessment has identified any development impacts as direct (physical) impacts, indirect

¹ Scottish Natural Heritage and HES (2018). EIA Handbook

² HES (2019). Historic Environment Policy for Scotland (HEPS), Page 14



(physical) impacts, direct (settings) impacts, and cumulative impacts³. With regard to the EIA Handbook, consideration has also been given to whether the impacts are adverse or beneficial, and short-term, long-term, or permanent⁴.

5.3.5 Direct impacts upon the cultural significance of heritage assets have considered the level of their cultural significance (where known) and the magnitude (extent) of the identified impacts.

5.3.6 Where direct impacts on an asset's setting are concerned, the sensitivity of an asset's setting to change is also considered and will be carried out following the three-stage approach outlined in *Managing Change in the Historic Environment: Setting*⁵. The three-step approach is as follows:

- *“Stage 1: identify the historic assets that might be affected by the proposed development;*
- *Stage 2: define and analyse the setting by establishing how the surroundings contribute to the ways in which the historic asset or place is understood, appreciated and experienced; and*
- *Stage 3: evaluate the potential impact of the proposed changes on the setting, and the extent to which any negative impacts can be mitigated.”*

Study Areas

Proposed Development

5.3.7 There is no guidance defining what the extent of an appropriate 'study area' should be for the cultural heritage assessment of wind farms. Any given study area will therefore represent an exercise in professional judgement with the use of an appropriately scaled Zone of Theoretical Visibility (ZTV) in relation to setting effects, agreed with the relevant between stakeholders during consultation.

5.3.8 Assets recorded within the Site and 1km of the Site boundary were analysed to inform the archaeological potential of the Site (Shown in **Figure 5.1a-c**).

5.3.9 With regards to the potential impacts on the setting of heritage assets, a ZTV calculation (shown in **Figure 5.2**) has been used to identify assets scoped in for further assessment. After analysis of the ZTV, a study area of 10 km from the Site was identified as the area where significant impacts to setting of affected assets are most likely, with visibility of the Proposed Development significantly reducing beyond this study area. As outlined in the EIA Handbook, visibility does not equate to adverse impact and the ZTV is to be used as a point of reference.

5.3.10 Assets within this study area were subject to an initial appraisal, set out in **Technical Appendix 5.2**, to determine the scope of the assessment. The study area is taken from the wind turbines, as the most visible and potentially impactful elements of the development.

5.3.11 The study areas were applied with a degree of flexibility and assets beyond each study area where long-distance visibility contributes to their cultural significance have been considered. No significant effects were identified outwith the study area of the Proposed Development.

³ Scottish Natural Heritage and HES (2018), EIA Handbook, Appendix 1, Paragraph 44.

⁴ Scottish Natural Heritage and HES (2018), EIA Handbook, Box C.7.Info.1

⁵ HES (2020) Managing Change in the Historic Environment: Setting, Page 8



Assumed Grid Connection Routeing Corridor

- 5.3.12 As discussed in **Chapters 2 and 3**, while not part of the application for Section 36 consent, the potential effects of the construction and operation of an assumed overhead line grid connection within the identified routeing corridor (**Figure 2.13**) have been taken into account as part of this assessment. The study area within which the potential for likely significant effects was assessed included the routeing corridor, a 500m buffer for assessing the potential for unknown archaeological remains within the routing corridor and 1 km buffer area to capture likely significant effects resulting from settings impacts (**Figure 5.4a**).
- 5.3.13 Abnormal Indivisible Load (AIL) Route
- 5.3.14 Similar to the assumed grid connection route, and in line with the approach to assessment set out in **Technical Appendix 1.1**, while not part of the application for Section 36 consent, the potential effects of the construction and use of the eight overrun areas required along the section of the AIL between the A70 and A76 (**Figure 2.14**) have been taken into account as part of this assessment. The study area for each of the eight areas comprised a 500 m radius from the proposed works areas (**Figure 5.3a**). The parameters were chosen to be proportionate to the scale of the areas of proposed works and the level of potential impact.

Information and Data Sources

- 5.3.15 Table 5-2 sets out the main data sources used in this study.

Table 5-2: Main Data Sources Used in the Production of Chapter

Subject	Source	Location
Designated heritage assets (including spatial data for Conservation Areas)	Database of HES, which contains a download portal of all designated heritage assets. This is updated frequently.	HES digital download.
Conservation Area Appraisals	Where available, the Conservation Area Appraisals for each council area provide detailed information about the significance and character of each conservation area.	East Ayrshire Council
Non-designated heritage assets	HER data is held by the West of Scotland Archaeology Service. This contains designated and non-designated heritage assets which have been recorded in the council area, including any information as a result of previous archaeological or heritage investigations, such as excavations, evaluation trial trenching, and walkover surveys.	Digital data was purchased from the West of Scotland Archaeology Service and sent to SLR as a digital download.
	Trove online database which is managed and maintained by HES. Trove replaced Canmore in 2025.	Trove online database.
Historic maps	Publicly available historic maps show how land use has changed in the post-medieval period.	National Library of Scotland website.



Subject	Source	Location
Aerial photography	Historic aerial photography and modern satellite imagery can be used to identify as of yet unknown sites.	HES database; Trove Online Database; and National Collection of Aerial Photography (NCAP) (online).
LiDAR Data	Publicly available remote sensing technology which creates 3D models of terrain and surface features through vegetation and can therefore identify previously unknown archaeological sites.	National Library of Scotland and Scottish Remote Sensing Portal.
Historic Land-Use Assessment (HLA)	Provides a detailed analysis of how the landscape which the Site is within has changed over time.	HES digital download.
Grey Literature	Unpublished reports	Various – Archaeological Data Service Archives, Council Archives
	Published reports and articles	Various – Academic Journals
Walkover Survey Data	Field inspection by SLR Consulting to identify any as of yet unrecorded heritage assets within the Site.	Inspected by cultural heritage specialists from SLR Consulting in June 2026
Setting of heritage assets	Field inspection within study areas and other specified assets from areas of public access.	Inspected by cultural heritage specialists from SLR Consulting in June 2026

Field Surveys

- 5.3.16 A walkover survey of the Site was undertaken on 09 and 10 June 2026 to assess the condition and survival of known heritage assets within the Proposed Development area and identify any previously unrecorded archaeological remains.
- 5.3.17 The survey confirmed that the majority of previously recorded heritage assets within the northern half of the Site have been either removed entirely or severely truncated as a result of extensive modern opencast mining activity. This corroborates evidence gathered during the desk-based assessment and indicates that the archaeological resource within this part of the Site has been significantly affected by modern ground disturbance, as outlined in **Section 5.6**.
- 5.3.18 Despite some areas within the Site being inaccessible during the walkover for health and safety reasons (see Section 5.4), overall, the walkover survey confirmed that much of the archaeological resource within the northern part of the Site has been substantially affected by modern mining activity, whilst a limited number of previously recorded assets remain extant either within or immediately adjacent to the Site. The southern parts of the Site were found to be comparatively less disturbed and therefore retain a greater potential for the survival of archaeological remains.
- 5.3.19 The settings assessment Site visit was undertaken on 29 and 30 June 2026. The weather on both days was dry and clear, with excellent visibility. The assets scoped in for detailed assessment were:



- Cairn Table, two cairns (**SM4631**);
- Dumfries House (**LB14413**);
- Dumfries House (**GDL00149**);
- The Temple, In Policies of Dumfries House (**LB96**);
- Avenue Bridge, Dumfries House Policies (**LB14414**);
- Dovecote Dumfries House (**LB14416**); and
- Sorn Castle (**LB14273**).

5.3.20 For more detail on why these assets were scoped into the settings assessment and why others were scoped out, refer to **Technical Appendix 5.2**.

Zone of Theoretical Visibility

5.3.21 The assessment of impacts on an asset's setting has been assisted by a ZTV calculation, presented on **Figure 5.2**. A ZTV calculation maps the predicted degree of visibility of a proposed development from all points within a proportionate, defined study area around the site, as would be seen from an average observer's eye level (two metres above ground level). The ZTV model presented on **Figure 5.2** is based upon the maximum level of theoretical visibility, i.e. the maximum height of the turbine blade tips. As bare-earth topographical data was used, the ZTV assumes the worst-case scenario, with no screening such as vegetation or buildings. For further information on the ZTV methodology, refer to **Technical Appendix 4.1: Landscape and Visual Impact Assessment Methodology**.

Assessment Methodology

Cultural Significance

5.3.22 For both designated and non-designated heritage assets, cultural significance can be derived from its inherent heritage interests, as outlined in HES's Designation Policy and Selection Guidance annexes⁶. These categories of cultural significance have been outlined in **Table 5-3**.

5.3.23 **Table 5-3** categorises heritage assets based on their designation and presumed value, based on the guidance provided in Appendix 1 Figure 2 of the EIA Handbook⁷. This is referred to as "sensitivity" in the EIA Handbook and will henceforth be referred to as 'cultural significance' throughout this report. **Table 5-3** will act as an aid to consistency in the exercise of professional judgement and provide transparency for others in evaluating the conclusions drawn.

Table 5-3: Cultural Significance

Cultural Significance	Criteria
Highest	Sites of international importance, including: • World Heritage Sites.
High	Sites of National importance, including: • Scheduled Monuments;

⁶ HES (2019) Designation Policy and Selection Guidance, Annexes 1 - 5

⁷ Scottish Natural Heritage and HES (2018), EIA Handbook, Page 185



Cultural Significance	Criteria
	• Category A Listed Buildings; • Gardens and Designed Landscapes included on the national inventory; • Inventoried Battlefields; • Conservation Areas containing nationally important buildings; and • Non-designated assets of equivalent significance as identified by the local heritage officer or professional judgement.
Medium	Sites of Regional/Local importance, including: • Category B and C Listed Buildings; • Conservation Areas containing buildings that contribute significantly to its character; and • Non-designated assets of equivalent significance.
Low	Assets of Local importance. Heritage assets that are compromised by poor preservation and/or poor survival of contextual associations or with little of the asset remaining to justify a higher importance.
Negligible	Assets that are of very little or no heritage interest. Heritage assets where the ability to interpret their archaeological context has been removed/eroded.
Unknown	Further information is required to assess the significance of these assets.

- 5.3.24 The factors contributing to cultural significance extend beyond their designation status and are subject to more individual nuance based on the asset's characteristics such as type, function, and physical and temporal relationships within the archaeological landscape. The assessment considers the factors contributing to an asset's cultural significance as well as the sensitivity of the heritage asset to change. Each element of an asset's setting may make a positive, neutral, or negative contribution to the cultural significance of an asset⁸.
- 5.3.25 An asset's sensitivity of change refers to the capacity of the asset's setting to retain its ability to contribute to the understanding, appreciation, and experience of the asset and its cultural significance despite the introduction of changes caused by the Proposed Development to the asset's baseline environment.
- 5.3.26 The contribution of the asset's setting to its cultural significance, and sensitivity thereof, varies based on the type/function of asset and its current setting. As part of the assessment, the contribution of the asset's setting and relative sensitivity to change will be presented with relevant justification, utilising the results of desk-based research, a field visit, and professional judgement.
- 5.3.27 Due to the unique qualities of each heritage asset, this has been determined on a case-by-case basis for each receptor in line with HES's Managing Change in the Historic Environment: Setting⁹ guidance and the EIA Handbook as per the methodology set out in **Table 5-3**.

⁸ HES (2019) Designation Policy and Selection Guidance, Annexes 1 - 5

⁹ HES (2020) Managing Change in the Historic Environment: Setting



Magnitude of Impact

- 5.3.28 Determining the magnitude of any likely impacts includes consideration of the nature of the activities proposed during the construction, operational and decommissioning phases of the Proposed Development. Changes could potentially include, but are not limited to, ground disturbance due to construction activities and changes to setting. The latter might include visual change, as well as the introduction of noise, vibration, smell, dust, or traffic movements.
- 5.3.29 Where adverse impacts on cultural heritage assets are possible, the magnitude of impact can be reduced through measures to prevent, reduce and/or, where possible, offset these effects.
- 5.3.30 Considering all embedded mitigation measures (**Section 5.7**), the magnitude of any impact has been assessed using professional judgement, with reference to the criteria set out in **Table 5-4**.

Table 5-4: Magnitude of Impact

Magnitude of Impact	Explanatory Criteria
High Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is considerably enhanced.
Medium Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is enhanced to a clearly discernible extent.
Low Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is enhanced to a minor extent.
Neutral/None	The Proposed Development would not impact the cultural significance of the heritage asset, or the ability to understand, appreciate and experience it.
Low Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is eroded to a minor extent.
Medium Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is eroded to a clearly discernible extent.
High Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, would be considerably eroded.

Significance of Effect

- 5.3.31 **Table 5-5** provides a matrix that relates the cultural significance of the asset to the magnitude of impact on its cultural significance, to produce an overall anticipated level of effect (significance of effect). The table outlines a graduated scale, using



the example found within the EIA Handbook. Where two impacts are possible, through application of the matrix, professional judgement with added justification will be used to determine the level of significance.

Table 5-5: Significance of Effect Matrix

		Cultural Significance (Excluding Unknown)				
		Highest	High	Medium	Low	Negligible
Magnitude of Impact	High	Major	Major	Major / Moderate	Moderate / Minor	Minor / Negligible
	Medium	Major	Major / Moderate	Moderate	Moderate/ Minor	Minor / Negligible
	Low	Moderate	Moderate / Minor	Moderate / Minor	Minor	Negligible
	Neutral / None	Nil	Nil	Nil	Nil	Nil

Cumulative Effect

- 5.3.32 Cumulative effects have been assessed in line with the guidance provided in the EIA Handbook¹⁰. A cumulative effect is considered to occur when there is a combination of:
- An impact on an asset or group of assets due to changes resulting from the Proposed Development; and
 - An impact on the same asset or group of assets resulting from other wind farm developments, or other EIA applications of a similar scale (consented, under construction, awaiting decision, but not operational) within the surrounding landscape.
- 5.3.33 In line with guidance presented in Managing Change in the Historic Environment: Setting¹¹, any effect resulting from operational wind farms has been considered as part of the baseline of the asset and will be considered in the construction and operational impacts sections of this chapter.
- 5.3.34 Assets with a minor or higher significance of effect resulting from the Proposed Development in isolation have been considered for cumulative assessment, as these assets are most likely to be susceptible to significant cumulative effects. A study area of 15 km from each asset assessed has been chosen based on professional judgement, allowing the assessment to encompass both the Proposed Development and any other developments within the surrounding landscape deemed to have the potential for cumulative effects.
- 5.3.35 The developments included for cumulative assessment are accurate as of August 2026 and are set out in **Table 5-11**.

¹⁰ Scottish Natural Heritage and HES (2018), EIA Handbook, Box AP1.Info.2, Page 183

¹¹ HES (2020), Managing Change in the Historic Environment: Setting. Page 9



Significance

- 5.3.36 Once the anticipated effects of the Proposed Development upon cultural heritage assets are defined, professional judgement is used to determine whether those effects would be either 'significant' or 'not significant' for the purposes of EIA. As part of this determination process, regard was given to any relevant guidance.
- 5.3.37 With reference to the matrix presented in Table 5-5:
- any effects identified as 'major' would most probably be considered 'significant';
 - any effects identified as 'moderate' might also be considered 'significant,' although professional judgement may determine otherwise on the basis of the associated site-/asset-specific detail; and
 - any effects identified as 'minor' or less are unlikely to be considered 'significant,' though again, professional judgement has been exercised.
- 5.3.38 A clear statement has been made in relation to all affected assets as to whether the identified effects upon them are considered to be 'significant' or 'not significant' for purposes of EIA.

Application of NPF4

- 5.3.39 The following are excerpts from Policy 7: Historic Places in NPF4 in relation to designations and non-designated heritage assets.
- 5.3.40 Policy 7h) states that development proposals affecting Scheduled Monuments will only be supported where *"significant adverse impacts on the integrity of the setting of a scheduled monument are avoided."*
- 5.3.41 Policy 7i) states that development proposals impacting national important Gardens and Designed Landscapes will be supported where they *"protect, preserve, or enhance their cultural significance, character and integrity and where the proposals will not significantly impact on important views to, from and within the site or its setting."*
- 5.3.42 In regard to Scheduled Monuments and Gardens and Designed Landscapes, a significant effect in EIA terms does not necessarily equate to a significant impact upon the integrity of setting. Where significant effects are found, a detailed assessment of adverse impacts upon the integrity of the setting is made. Changes to factors of setting that contribute to cultural significance, such that the understanding, appreciation and experience of an asset are not adequately retained will have a significant adverse impact on the integrity of its setting¹². This is most likely to occur where the sensitivity of setting is deemed to be highly sensitive to change.
- 5.3.43 Policy 7j) states that development proposals affecting Inventory Battlefields will only be supported where *"they protect and, where appropriate, enhance their cultural significance, key landscape characteristics, physical remains, and special qualities."*
- 5.3.44 Policy 7c) states that development proposals affecting the setting of Listed Buildings should *"preserve its character, and its special architectural or historic interest."*
- 5.3.45 Policy 7e) states that development proposals in Conservation Areas will, *"ensure that existing natural and built features which contribute to the character of the*

¹² As defined and agreed in the Hill of Fare Wind Farm Cultural Heritage Statement of Agreed Matters (July 2025). DPEA Reference: WIN-110-4



conservation area and its setting, including structures, boundary walls, railings, trees and hedges, are retained.”

5.3.46 Policy 7o) states:

“Non-designated historic environment assets, places and their setting should be protected and preserved in situ wherever feasible. Where there is potential for non-designated buried archaeological remains to exist below a site, developers will provide an evaluation of the archaeological resource at an early stage so that planning authorities can assess impacts.

Historic buildings may also have archaeological significance which is not understood and may require assessment. Where impacts cannot be avoided they should be minimised.

Where it has been demonstrated that avoidance or retention is not possible, excavation, recording, analysis, archiving, publication and activities to provide public benefit may be required through the use of conditions or legal/planning obligations.

When new archaeological discoveries are made during the course of development works, they must be reported to the planning authority to enable agreement on appropriate inspection, recording and mitigation measures”.

Mitigation

5.3.47 The main approach to mitigating both direct and indirect impacts has been through design. A statement of the embedded mitigation measures proposed to address identified cultural heritage impacts is provided in **Section 5.7**, with a description of the design evolution and alternatives set out in **Chapter 3**. The impact predictions presented in this assessment take these measures into account. Avoidance of direct impacts on heritage assets has been a consideration throughout the design process.

5.3.48 Suitable measures for minimising effects through ground disturbance might include:

- the micro-siting of Proposed Development infrastructure away from sensitive locations;
- the fencing off or marking out of heritage assets or features in proximity to construction activity in order to avoid disturbance where possible;
- a programme of archaeological work where required, such as an archaeological watching brief during construction activities in or in proximity to areas of archaeological sensitivity, or excavation and recording where impact is unavoidable; and/or
- a working protocol to be implemented should unrecorded archaeological features be discovered.

5.3.49 Suitable measures for mitigating any setting effects might include:

- alteration of the proposed turbine layout; and/or
- reduction of proposed turbine heights.

5.3.50 Where avoidance has not been possible, further mitigation has been proposed as a condition of consent (**Section 5.11**).



Enhancement

- 5.3.51 It is proposed that a heritage trail, as well as relevant heritage interpretation boards, be developed in conjunction with the outdoor access management plan at the Proposed Development to enable recreational visitors to understand and gain an appreciation of the history of the Site¹³.

Residual Effects

- 5.3.52 Residual effects are the resulting effects after consideration of all proposed mitigation measures. A statement of the residual effects of the Proposed Development has been provided (**Section 5.12**), and considers any site-specific mitigation measures which could be implemented as a condition to consent.

5.4 Difficulties and Uncertainties

Difficulties

- 5.4.1 Access restrictions were encountered during the walkover survey in the vicinity of T11, T13, the proposed substation, construction compounds and BESS area due to the presence of cattle. There were also some former mining-related areas that were either fenced off or unsafe to traverse (e.g. opencast void) for safety reasons. Consequently, these areas could not be safely accessed or surveyed and were not subject to detailed walkover inspection. However, these areas were observed from the closest safe viewpoint.

Limitations of Assessment

- 5.4.2 The assessment is based on the sources outlined in both **Table 5-2** and **Section 5.15: References**, and, therefore, shares the same range of limitations in terms of comprehensiveness and completeness of those sources.

Uncertainties

- 5.4.3 The potential effects of the assumed grid connection route have been assessed using publicly available information along a route that has been assumed – the level of certainty as to the route and parameters of the grid connection is relatively high. However, the assessment of likely effects of the assumed OHL has been conducted in light of the circumstances of the proposed grid connection and is in line with the requirements of the EIA Regulations. See also **Technical Appendix 1.1** for a discussion of the approach to assessment.

5.5 Scope of Assessment

Scoped into the Assessment

Assets within the Site

- 5.5.1 Cultural heritage assets within the Site, the areas of overrun within the Abnormal Indivisible Load (AIL) route and the assumed grid connection route were assessed in order to determine any likely direct and indirect impacts.

¹³ Mann, B. (2023) Delivery of Public Benefit and Social Value Guidance for Archaeology in the Planning Process. Available at: <https://www.algao.org.uk/news/tue-14022023-0904-delivery-public-benefit-and-social-value-archaeology-planning-process>



- 5.5.2 The heritage assets within the overrun areas associated with the potential road widening and improvement activities are assessed and discussed in full within **Technical Appendix 5.3**.
- 5.5.3 The heritage assets within the assumed grid connection corridor are assessed and discussed in full within **Technical Appendix 5.4**.

Assets outwith the Site

- 5.5.4 All nationally significant designated assets within 10km of the proposed turbines were considered during the scoping phase for potential impacts on their setting and were subjected to a Cultural Heritage Appraisal (**Technical Appendix 5.2**). The scope of assessment of cultural heritage assets is set out in **Table 5.1** in line with the advice received from HES and East Ayrshire Council. A full list of assets scoped in for assessment can be found in **Table 5-9**.

Scoped Out of the Assessment

- 5.5.5 With the exception of designated heritage assets scoped in for detailed assessment for the potential for significant effects on their setting (**Table 5-9**), designated heritage assets within 10 km of the proposed turbines that do not fall within the ZTV and designated heritage assets that are beyond the 10 km study area have been scoped out of further assessment due to having no potential for impacts upon their setting. This has been agreed upon in line with consultation undertaken with HES and East Ayrshire Council (**Table 5-1**).

5.6 Baseline Conditions

Introduction

- 5.6.1 All heritage assets within the 1 km study area are shown on **Figure 5.1**. Designated assets within the 10 km of the proposed turbine locations are shown in relation to the ZTV on **Figure 5.2**.
- 5.6.2 All recorded designated and non-designated heritage assets within 1 km of the Site are listed in the gazetteer that is contained within **Technical Appendix 5.1: Gazetteer of Heritage Assets**. Where designated assets are tabulated in this chapter, they are identified by the reference number under which they are registered by HES. Non-designated assets are referred to by their SLR number, with their correlating HER reference outlined in **Technical Appendix 5.1**.
- 5.6.3 The archaeological baseline of the overrun areas associated with the potential road widening and improvement activities for the movement of turbine blades beyond the primary Site and the assumed grid connection corridor are described in full in **Technical Appendix 5.3: AIL Overrun Appraisal** and **Technical Appendix 5.4: Assumed Grid Connection Corridor Appraisal**, respectively.

Designated Heritage Assets

- 5.6.4 There are no designated heritage assets within the Site boundary.
- 5.6.5 Within 10 km of the proposed turbines, there are eight Scheduled Monuments, nine Category A Listed Buildings, 65 Category B Listed Buildings, 82 Category C Listed Buildings, one Inventoried Garden and Designed Landscape and five Conservation Areas (**Figure 5.2**). There are no Inventoried Battlefields within 10 km of the turbines.



Topography, Geology, and Soils

- 5.6.6 The Site is situated on relatively flat ground, with slightly elevated terrain and low hills to the north and east. The highest point within the Site reaches approximately 285 m AOD, from which the land gradually slopes down towards the Glenmuir Water in the southwest, at c.192 m AOD. The Site is underlain by sandstone and sedimentary formations of the Clackmannan Group in the north, and by mixed sedimentary rocks and lava flows of the Strathclyde Group in the south, all of which are overlain by Devensian glacial till. This till is typically dense, compact and poorly drained, which can obscure archaeological remains at the surface while also offering protection to buried deposits sealed beneath it. Preservation conditions for organic material may be variable due to limited drainage. Overall, the ground conditions are more likely to support pasture or rough grazing rather than intensive cultivation. This may have contributed to the survival of archaeological features through reduced agricultural disturbance, although it may have reduced their visibility in the present landscape. However, given the intensity of mining and quarrying activity within the northern part of the Site since the post-medieval period, any archaeological remains that may once have been preserved are likely to have been removed, truncated or poorly preserved as a result of ground disturbance and associated changes in hydrology.
- 5.6.7 There is also a limited amount of peat present within the Site, and while the infrastructure has been sited to avoid areas of deeper peat (**Chapter 3**), there are deep pockets of peat in isolated areas across the site such as near T5, T7 and T12 (see **Figure 8.6**). As per Association of Local Government Archaeological Officers (ALGAO's) Guidance for Peatland Restoration and the Historic Environment in Scotland¹⁴, peat is classed as a cultural heritage resource due to its unique ability to preserve organic and inorganic archaeological remains. Formed after the ice-age, the peatlands provide a waterlogged and anaerobic environment which leads to a much slower rate of decay for archaeological and palaeoenvironmental remains compared to other soil types¹⁵.
- 5.6.8 Whilst there is limited presence of peat across site, as detailed in **Chapter 8: Geology, Hydrology, Hydrogeology and Peat**, there is a potential for environmental or organic deposits to survive in these areas.

Archaeological Baseline

- 5.6.9 Archaeological assets recorded within the Site are discussed below due to their inclusion in the HER and their potential to inform understanding of wider land use patterns and archaeological activity. Within the northern part of the Site, archaeological remains are likely to have been removed or substantially disturbed by extensive modern mining activity. In the southern part of the Site, archaeological assets have either been confirmed to survive, or are considered likely to survive where represented by subsurface remains.

Prehistoric Context

- 5.6.10 There is one heritage asset of prehistoric date (**SLR36**) recorded within the Site boundary. This asset is comprised of a stone cist, which had been placed on a slope of a river terrace overlooking the Glenmuir Water, c.0.6 km to the southwest of T14. The asset comprised a 'coffin built of stone slabs and covered with the same', discovered by a farmer constructing a road in the late 19th century. No remains were

¹⁴ Mann (2022).

¹⁵ Gearey, et al. (2010)



found within the cist, and it was not covered by a mound at the time of discovery. Later surveys were unable to confirm its presence, and it is likely to have been removed by farming activity.

- 5.6.11 There is one further heritage asset of prehistoric date located within the study area. **SLR43** is a potential burial mound located c.0.6 km to the southeast of T2, outwith the Site boundary.
- 5.6.12 The limited evidence for prehistoric activity within and around the Site suggests either a lack of occupation and land use during this period, or the subsequent loss of archaeological remains resulting from mining activity, particularly in the northern section of the Site. The two known prehistoric assets are recorded along the course of the Glenmuir Water which suggests that access to fresh water would have influenced patterns of prehistoric activity. Accordingly, any potentially unrecorded activity of this date is likely to be similarly focused along the watercourse where the conditions would have been favourable for settlement.

Romano-British Context

- 5.6.13 There are no Roman heritage assets recorded within the Site or within the 1 km Study Area.
- 5.6.14 There is little to no evidence for Roman activity in the form of either permanent or temporary settlement in the wider area around the Proposed Development. However, two Roman roads have been recorded within the wider area; the Loudon Hill – Muirkirk – Sanquhar road (**NHRE ID: 73186**) recorded c.5 km to the northeast of the Site boundary, and the Wiston – Patna road (**NHRE ID: 73247**), located c.3 km to the southwest of the Site. The presence of these routes suggests that Roman activity in the vicinity of the Site was primarily associated with movement through the landscape rather than long-term occupation. Any unrecorded activity of this date is more likely to have comprised small, temporary camps associated with the construction, maintenance or use of the road network. Such activity would be expected to occur in closer proximity to these routes rather than within the Site itself.

Medieval Context

- 5.6.15 There is one asset of medieval date located within the Site boundary. **SLR1** is located c.0.63 km to the west of T12 and comprises a boundary ditch and pit, which contained a pot of 14th century date, recorded during trial trenching undertaken in advance of the Laigh Glenmuir Surface Mine Extension (**Event ID: 4875**). The programme of trial trenching recorded a small quantity of features, primarily comprised of drainage or boundary ditches.
- 5.6.16 There are a further six assets of medieval date recorded within the 1 km study area, all concentrated to the northeast of the Site and all of an agricultural or domestic nature.
- 5.6.17 Three of these assets (**SLR15**, **SLR16** and **SLR17**) are located between c.0.13 km and 0.25 km to the northeast of the Site boundary and are described as two huts (**SLR15** and **SLR16**) and a sheepfold (**SLR17**). Although these assets have not been assigned a definitive date, only **SLR17** appears on historic mapping¹⁶, and it does not appear on subsequent mapping dated to later in the 19th century¹⁷,

¹⁶ Ordnance Survey (1858) *Ayrshire XXX.14* (Auchinleck). 1st ed. 25 inches to 1 mile. Surveyed 1856. Available at: <https://maps.nls.uk/view/74951174>

¹⁷ Ordnance Survey (1897) *Ayrshire Sheet XXX.SW*, revised 1895. 2nd ed. Six-inch to 1 mile. Available at: <https://maps.nls.uk/view/75494758>



- suggesting it had fallen out of use by that time. The absence of **SLR15** and **SLR16** from historic mapping may indicate that they pre-dated the surveyed landscape or were already ruinous when mapping was undertaken. As such, they may represent the remains of a farmstead of medieval, or possibly early post-medieval date.
- 5.6.18 A further building of medieval date is located 0.81 km to the northeast of the Site boundary, namely **SLR14**. This asset was excavated in advance of opencast mining activity (**Event ID: 168**), with pottery of medieval date being recovered.
- 5.6.19 Both **SLR28** and **SLR23** are located c.0.14 km and c.0.93 km to the east of the Site boundary respectively. **SLR28** concerns the remains of a farmhouse, whilst **SLR23** may represent either a shieling or the remains of a building.
- 5.6.20 Overall, the archaeological baseline indicates that medieval activity within the Site was limited and likely peripheral in character, represented only by an isolated boundary feature and associated deposit of 14th-century date. This evidence suggests the Site lay on the margins of organised land use rather than forming a primary focus of settlement. In contrast, the surrounding 1 km study area, particularly to the northeast and east of the Site, contains a greater concentration of small-scale domestic and agricultural features, including huts, a sheepfold, and farmstead-like buildings. Together, these assets indicate a dispersed rural landscape characterised by farming and smallholdings, with the Site forming part of the wider agricultural hinterland rather than a core habitation zone. As with the prehistoric remains outlined above, there is also the possibility that more extensive remains were removed by later mining activity.

Post-medieval Context

- 5.6.21 There are 14 assets of post-medieval date recorded within the Site boundary.
- 5.6.22 These are primarily comprised of the remains of a post-medieval mining landscape, including coal mines, limekilns, a quarry and a mineral railway. This activity is largely focused towards the centre of the Site, where the Gass Water Branch Junction railway (**SLR55/SLR303**), now dismantled, ran from northwest to southeast through the Site.
- 5.6.23 **SLR8**, **SLR10** and **SLR11** all appear to relate to the remains of the Gass Water Lime Works and are comprised of what may be an early row of workers buildings (**SLR8**) and the remains of lime kilns. These assets are located between c.0.13 km to the southeast and c.0.21 km to the northwest of T4, along the course of the railway (**SLR303**). **SLR6** and **SLR7** are also both associated with Gass Water Lime Works, and are located along the course of the railway, and are located c.0.27 km north and 45 m southeast of T7 respectively, though the HER entry is unclear as to what aspect of the limeworks these assets relate to. No features other than the railway are visible on historic mapping. Dalfad Coal Pit, **SLR4**, was also at one time connected to the mineral railway (**SLR303**) and is located c.0.45 km to the southeast of T6. A further asset, recorded as Dalfad Coal Mine (**SLR63**) is located c.0.4 km to the southeast of T6. Further industrial activity of post-medieval date is located toward the eastern extent of the Site, namely the remains of Glenmuir Limeworks (**SLR66**), comprising areas of quarrying and limekilns located c.0.14 km to the northwest of T10.
- 5.6.24 The high level of industrial remains recorded within the north of the Site shows the Site formed part of a significant post-medieval industrial landscape, characterised by extensive extractive and processing activity associated with coal mining, lime production, quarrying and mineral transport infrastructure, with the coal mining activity dating back to at least the Victorian period. The concentration of industrial remains around the route of the former Gass Water Branch Junction railway



(**SLR303**) demonstrates the importance of the railway in facilitating the movement of raw materials and finished products and reflects the wider industrial development of the area during the 19th century. The presence of multiple limeworks, limekilns and coal extraction sites indicates that these industries would have fundamentally shaped both the physical character and economic function of the Site for a considerable period, with the natural resources continuing to be exploited through to later periods.

- 5.6.25 Three further assets are agricultural in nature, namely **SLR49**, **SLR50** and **SLR59**. Both **SLR49** and **SLR50** are located within the western section of the Site, in relatively close proximity to each other, c.0.34 km southwest and .0.57km west of T12 respectively. Both farmsteads appear on Roy's Military Map of c.1750, though **SLR49** is not present on the 1st Edition OS map. Excavation at Back of the Hill (**SLR49**) (**Event ID: 4738**) identified the remains of at least three structures, including a probable byre, suggesting a multi-building farmstead occupied from the 17th century to c.1800. The evidence indicates a relatively prosperous rural settlement that was likely abandoned during late 18th-century agricultural improvement and farm amalgamation. Survey and excavation at Hillhead farmstead (**SLR50**) (**Event ID: 4738**) identified phased expansion of the 19th-century farmhouse and buried remains of earlier buildings shown on historic maps. 17th to 18th -century finds, boundary features and cultivation remains indicate an earlier pre-Improvement farmstead likely survives beneath the later settlement, suggesting this part of the Site was under agricultural usage from at least the early post-medieval period.
- 5.6.26 A third farmstead (**SLR59**) is located within the northern section of the Site, c.0.61 km to the northwest of T1. Only the footing of a building visible 10 m to the northwest of the asset, and a small earthwork enclosure remains of this asset, observed during the walkover survey.





Photograph 1: Photograph of wall footings associated with SLR59.

- 5.6.27 A school house (**SLR68**) is recorded within the western section of the Site, c.0.98 km to the southwest of T12. This asset has been wholly removed as a result of modern mining activity.
- 5.6.28 The final asset of post-medieval date (**SLR2**) is a racecourse depicted on the 1st Edition 'Old Series' map and is not depicted on the 1888 edition of OS mapping. A 1995 field inspection (**Event ID: 177**) recorded only the remains of associated stables (**SLR3**), located beyond the Site boundary, c.0.1 km to the northeast of T5. Analysis of LiDAR data and aerial imagery confirms that the northernmost section of the track survives and remains visible, though no remains could be seen at ground level when the asset was visited during the walkover survey.
- 5.6.29 There are a further 16 heritage assets of post-medieval date within the 1 km study area. These assets are all of a similar nature to those within the Site, comprising a mixture of industrial and agricultural activity.
- 5.6.30 A cluster of agricultural activity is located to the east of the northern section of the Site, comprising of a cluster of shielings (**SLR18**, **SLR20**, **SLR21** and **SLR22**). These assets are located along the Boghead Burn, approximately 0.8km to the northeast of T1. **SLR19**, also situated within this cluster, may represent a bell pit, suggesting early industrial activity in this area. Further evidence of agricultural activity is located to the northwest of the Site boundary, with **SLR13** and **SLR64** both representing farmstead, located between c.0.72 km and 0.86 km from the Site boundary (northwest of T3).



- 5.6.31 **SLR56**, also located to the northwest of the Site boundary and T3, relates to the former Muirkirk Branch of the Glasgow and SW railway, now disused. This asset is located c.0.57 km to the northwest of the Site. Two areas of mineral railway are recorded outside of the Site, **SLR55**, located 0.7km northwest of T6 and **SLR52**, is recorded c.0.46 km to the northeast of the Site (northeast of T5). These would have connected with sections identified within the Site (**SLR303**).
- 5.6.32 Two further farmsteads and a farm, **SLR69**, **SLR72** and **SLR12** are located to the west of the Site boundary, c.0.59 km, c.0.79 km and c.40 m respectively from the Site boundary (in a westerly and southwesterly direction from T11 and T12). A mill dam (**SLR73**) is also recorded c.0.35 km to the southeast of **SLR73** and is likely to have served the farmstead of Laigh Glenmuir Farm (**SLR12**). The B-Listed Glenmuir Bridge (**LB968**) is also located in the vicinity of these assets, c.0.43 km to the southwest of the Site boundary (also southeast of T14).
- 5.6.33 Several assets are also found in proximity to Dalblair, namely Dalblair Lodge (**SLR70**) and the C-Listed Dalblair Bridge (**LB969**), located c.0.95 km and c.0.98 km to the southeast of the Site boundary respectively. The remains of a clamp kiln (**SLR67**) are located to the west of Dalblair, c.0.61 km to the east of the Site boundary near T14.
- 5.6.34 The post-medieval evidence suggests that the Site was subject to a combination of agricultural and industrial land use, reflecting the wider economic transformation of the area during the 17th to 19th centuries. Early post-medieval activity is represented by several farmsteads (**SLR49**, **SLR50** (west of T12) and **SLR59** (southwest of the Site entrance), while excavation evidence (**Event ID: 4738**) indicates long-term agricultural occupation, cultivation and stock management prior to agricultural improvement and farm amalgamation. From at least the 18th century onwards, parts of the Site became increasingly industrialised, with coal mining, lime production, quarrying and associated transport infrastructure concentrated around the Gass Water Branch mineral railway. The presence of limeworks, coal pits and railway connections demonstrates the extraction and transportation of mineral resources, while a schoolhouse and racecourse indicate a settled and economically active rural community. Overall, the evidence suggests that the Site formed part of a mixed agricultural and industrial landscape, in which traditional farming practices continued alongside increasingly intensive extractive and industrial activity.

Modern Context

- 5.6.35 There are six modern heritage assets recorded within the Site boundary, primarily consisting of industrial assets relating to mineral extraction.
- 5.6.36 Located c.0.16 km to the northeast of T1, **SLR46** concerns the remains of an expansive area of opencast mining, sunk in the early 2000s, which extends to the northeast beyond the Site. Though the mining activity now present in this area took place in the modern period, it has been in use for coal mining since the Victorian period, within what was once an extensive mining area that included Powharnal Colliery, though all traces of this have been removed by the subsequent mining activity.
- 5.6.37 A second area of modern mining (**SLR25**, **SLR26** and **SLR27**) is found around the centre of the Site, between c.0.11 km to the northeast of T3 and c.0.30 km to the southwest of T2, with a further area situated to the southeast of the Site, beyond the study area. The Gass Water Barytes Mine exploited a series of barytes-bearing veins and was developed in 1917 by the Hedworth Barium Co. Ltd, although the mineral was known to occur along the Gass Water from at least the 1870s. Early workings comprised opencast extraction by stoping from a single adit until 1921.



Following its acquisition by Wrenhall Baryta Co. Ltd in 1923, the mine was worked predominantly by overhead stoping and remained in production until 1964, by which time it had become the largest barytes producer in Britain. An aerial ropeway (**SLR71**) associated with the mine extended northwest to southeast through the site, with only a number of concrete footings surviving today, as confirmed during the walkover survey (**Photograph 2**).

- 5.6.38 The final modern asset located within the Site is a further area of coal mining (**SLR47**), known as Cairnhill 1 and 2. This area of mining is located c.0.19 km to the southwest of T3, and the mines were operational between 1952 and 1977.
- 5.6.39 There are a further two assets of modern date located beyond the Site boundary, both located to the north of the Site and consisting of coal mines. Cronberry Moor Coal Mine (**SLR48**), is located c.0.77 km to the northwest of the Site boundary, while Powharnal Coal Mine (**SLR65**) is located 1 km to the northeast of the Site. The Cronberry Moor Coal Mine was developed by Bairds and Dalmellington Limited in 1920, and closed in 1957, while Powharnal mine was short lived, with production commencing in 1954 and abandoned in 1959.
- 5.6.40 During the modern period, the Site and its surrounding landscape were dominated by large-scale mineral extraction, reflecting the area's long-standing industrial character. Coal mining remained a significant activity, with extensive opencast operations established within and adjacent to the Site. The scale of these operations, together with subsequent restoration works, is likely to have removed or significantly disturbed the majority of earlier archaeological remains and historic landscape features within the parts of the Site that have been subjected to opencast coal mining.



Photograph 2: Photograph of concrete footings associated with the aerial ropeway (SLR71)



Undated Heritage Assets

- 5.6.41 There are 11 undated heritage assets located within the Site, largely relating to potential agricultural or domestic remains recorded during surveys in advance of modern mining activity.
- 5.6.42 Of these, three comprise enclosures (**SLR33**, **SLR38** and **SLR39**), which are likely to form the remains of shielings. These assets are located c.0.26 km to the northwest of T1, c.0.63 km to the west of T1, and c.0.23 km to the southeast of T3, respectively. One further sheepfold (**SLR61**) is located c.0.27 km southwest of T2.
- 5.6.43 A building (**SLR60**) which may be of post-medieval or modern date is located c.0.64 km to the northwest of T1, while a further building (**SLR57**), is located to the southwest, c.0.31 km to the northwest of T3. A third building (**SLR63**) is located c.0.21 km to the southwest of T4. A farmstead (**SLR53**) is located 0.79 km to the northwest of T7.
- 5.6.44 One further asset relates to a former mine, almost certainly of post-medieval or modern date. Gass Water coal pit (**SLR51**) is located c.0.3 km to the southwest of T7. The remains of a potential bell pit (**SLR54**) were also recorded, c.0.16 km to the northwest of T4. Bell pits are an early method of mining coal or other minerals near the surface, and most commonly date from the prehistoric period to the medieval period, though later examples do exist.
- 5.6.45 The final undated asset recorded within the Site boundary concerns an earthwork of unknown function (**SLR37**) consisting of a broad, shallow ditch enclosing a low-lying area adjacent to Glenmuir Water, together with an elongated natural mound approximately 50 m wide. Although once interpreted as a possible moat or moated homestead, later investigations suggested that much of the feature is natural in origin and its date and function remain uncertain. The asset is located c.0.48 km to the southeast of T14.
- 5.6.46 There are a further 11 undated assets within 1 km of the Site boundary.
- 5.6.47 Three assets are comprised of the remains of potential bell pits, located to the northeast of the Site boundary. **SLR34** and **SLR35** are located in close proximity to one another c.0.12 km to the northeast of the Site boundary, while **SLR31** is located c.0.86 km to the northeast of the Site, showing further evidence that the area has a long history of mineral extraction.
- 5.6.48 Five assets are recorded as enclosures (**SLR32**, **SLR41**, and **SLR42**) or sheepfolds (**SLR44** and **SLR58**). **SLR32** is described as a possible turf stell (a form of shieling) and is located 96 m to the northeast of the Site's eastern boundary, while **SLR41** is located c.0.97 km to the east of the Site boundary and is described as a potential turf shieling. **SLR42** is described as a potential animal enclosure and is located c.0.25 km to the east of the Site boundary. **SLR44** is located in close proximity to **SLR42**, c.0.31 km to the east of the Site boundary, while **SLR58** is located on the banks of the Gass Water, c.0.82 km to the southeast of the Site boundary.
- 5.6.49 Two further assets are comprised of platforms of unknown function. **SLR40** is located 88 m to the southwest of the Site boundary, on the banks of the Gass Water, and is described as a level platform of 19 m by 11 m, around 1.5 m high. **SLR45** is located c.0.87 km southeast of the Site boundary and is described as a circular structure.



Historic Mapping, Historic Land Use Assessment, Aerial Photographs, and LiDAR

- 5.6.50 Roy's Military Survey (1747–55¹⁸) shows limited settlement within the Site. Potential locations include Hillhead (**SLR50**) and Back of the Hill (**SLR49**), both west of T12, as well as Welltrees (**SLR59**) (south west of the Site entrance) and 'Cowshyte', although the latter is not depicted on later mapping. Glenmuirhall is also shown, corresponding to the later-named farmsteads recorded on subsequent editions. Wider settlement names depicted in the surrounding area include Cronberry, Dalfad (**SLR53**) (southwest of T6), Logan, Darmalloch (**SLR72**, 1.7km southwest of T11), Barnlonachan (**SLR69**, 1.7km west of T12) and Coubs (recorded as Cubs on later mapping), comprising predominantly small settlements and dispersed farmsteads around the Site.
- 5.6.51 The lower-lying areas of the Site appear to have been largely agricultural in character, including land around Hillhead, while woodland was concentrated to the north around Welltrees. The Castle of Kyle (Kyle Castle; **SM3311**) is also depicted on Roy's map.
- 5.6.52 The 1st Edition (Old Series) Ordnance Survey map¹⁹ records a racecourse (**SLR2**) within the footprint of T5. The 1st Edition 6-inch mapping²⁰ also depicts numerous mine shafts and areas of small-scale quarrying and mining across the Site and its environs. Active coal pits are shown at Dalfad (**SLR63**)(southeast of T6), Gass Water (**SLR51**)(southwest of T7) and Welltrees (southwest of the Site entrance), while the Gass Water Limestone Company is recorded, indicating limestone extraction and lime production for agricultural and building purposes. The mapping further shows six coal pits, a sand pit and a gravel pit that were already disused by this period.
- 5.6.53 Woodland cover around Welltrees is illustrated on both the 1st Edition and Ordnance Survey 6-inch, 2nd Edition map (Ayrshire Sheet XXX, 1888), although it has since been substantially reduced. The Glasgow and South Western Railway (Muirkirk Branch) is shown on the earlier mapping c.0.45 km to the northwest of the Site boundary; although largely removed, sections of its former route remain visible on LiDAR imagery to the northwest. Between the two mapping editions, the branch line (**SLR55/SLR303**) extending southeast towards Dalfad farmstead was removed. Glenmuir Limeworks (**SLR66**, 0.23km northeast of T10) is depicted on both editions, appears to have been the only pit still in operation and the associated railway infrastructure is shown as disused.
- 5.6.54 The OS mapping from the 1950's²¹ shows some change to the area within the Site over this period, including the full dismantling of the Gass Water Branch Line within the Site (**SLR303**), and the removal of Glenmuir Limeworks (**SLR66**).
- 5.6.55 Analysis of the Historic Land-use Assessment map shows a similar picture, with a large section of the northern part of the Site being recorded only as a modern opencast site, with small pockets of rectilinear fields and farms, representative of 18th and 19th century agricultural improvements recorded in the east and northeast.

¹⁸ Roy, W. (1747-55) *Military Survey of Scotland, Ayrshire Sheets 39-40 and Lanarkshire Sheet 31*. Available at: <https://maps.nls.uk/roy/>

¹⁹ Ordnance Survey, surveyed 1849-1859. Old Series, Sheet 15: Sanquhar (1 inch to 1 mile). Southampton: Ordnance Survey. Available at: <https://maps.nls.uk/view/101466167>

²⁰ Ordnance Survey, 1856. Ayrshire Sheet XXX, First Edition 6-inch to 1 mile. Southampton: Ordnance Survey. Available at: <https://maps.nls.uk/view/74425817>

²¹ Ordnance Survey (1957) *1:25,000 Map of Great Britain, Sheet NS62*. Revised 1923-1953. Southampton: Ordnance Survey. Available at: <https://maps.nls.uk/view/207346181>



The southern section of the Site is characterised by rectilinear fields and farms, with smaller areas recorded as rough grazing. The area around **SLR66** is recorded as opencast sites, quarries or mines of the type common since the 1800s.

- 5.6.56 A review of the available aerial and satellite photography shows the primary change occurring with the sinking of the Powharnal Opencast Complex Dalfad Open Cast Mine, which was approved in 1996 within the northern section of the Site. Further mining activity is shown in satellite imagery from the early 2000's with the Duncanziemere and Laigh Glenmuir Surface Coal Mine being sunk in 2006 within the east of the Site, east of T11 and T12. By 2011 the Powharnal Opencast Complex and Dalfad Open Cast mining activity had extended further south towards the Gass Water watercourse, and according to the mapping, by 2016 most of the northern half of the Site had been impacted by further expansion.
- 5.6.57 Aerial imagery and LiDAR data also shows the extent of the remains of the former racecourse (**SLR2**), though the aboveground remains of the racecourse have been removed.

Discussion of the Site

- 5.6.58 Evidence for prehistoric activity within the Site is limited to a single cist burial (**SLR36**)(southwest of T14) overlooking the Glenmuir Water, together with a possible burial mound (**SLR43**) located to the southeast of T2. just beyond the Site boundary. The placement of the cist on an elevated river terrace is consistent with broader prehistoric burial practices and suggests that the landscape was utilised, at least intermittently, during prehistory. However, the scarcity of recorded assets makes it difficult to determine the intensity or character of prehistoric activity within the wider area.
- 5.6.59 There remains some potential for previously unrecorded prehistoric remains to survive within the Site, particularly within the southern half where the land remains under rough grazing and has experienced comparatively limited ground disturbance. Such remains could include isolated, lithic scatters or domestic or funerary features that are not readily identifiable through surface survey. In contrast, the extensive modern opencast mining and restoration works that have affected the northern half of the Site are likely to have removed any prehistoric archaeological deposits that may once have been present in that area, resulting in a negligible archaeological potential.
- 5.6.60 No Roman heritage assets have been identified within the Site or the surrounding 1 km study area. Although two Roman roads are recorded within the wider region, their distance from the Site suggests that the area lay beyond the principal focus of Roman activity and was likely traversed rather than permanently occupied.
- 5.6.61 Consequently, the potential for previously unknown Roman remains within the Site is considered negligible.
- 5.6.62 The medieval evidence suggests that the Site lay on the periphery of a dispersed rural landscape focused primarily to the northeast. Within the Site itself, activity is represented only by a boundary ditch and pit containing 14th-century pottery (**SLR1**)(west of T12), while the surrounding study area contains a concentration of huts, possible farmstead remains, a sheepfold and other agricultural features. Collectively, these assets indicate a landscape characterised by pastoral farming, small-scale agricultural settlement and seasonal or marginal land use.
- 5.6.63 Given the limited but clear evidence for medieval rural exploitation in the area, there is moderate potential for previously unrecorded medieval remains to survive within the southern half of the Site. Such remains may comprise field boundaries,



cultivation features, drainage systems, stock-management features or ephemeral settlement remains associated with dispersed agricultural activity. The survival of such remains is most likely within areas of rough grazing that have not been subject to deep modern disturbance. Conversely, the northern half of the Site has been extensively impacted by opencast extraction and restoration works, and the potential for the survival of medieval archaeological remains in these areas is considered very low.

- 5.6.64 The post-medieval period represents the most well recorded phase of activity identified within the Site. Evidence indicates a mixed agricultural and industrial landscape, with established farmsteads at Back of the Hill (**SLR49**), Hillhead (**SLR50**)(both west of T12) and Welltrees (**SLR59**)(southwest of Site entrance) existing alongside increasingly intensive industrial exploitation. From the 18th and 19th centuries onwards, coal mining, lime production, quarrying and associated transport infrastructure developed across much of the Site, centred on the Gass Water Branch mineral railway. The presence of limeworks, coal pits, railways, a schoolhouse and a racecourse demonstrates the emergence of a settled rural-industrial community linked to mineral extraction and agricultural improvement.
- 5.6.65 The potential for previously unknown post-medieval remains varies considerably across the Site. Within the southern half, where rough grazing predominates and disturbance has generally been less intensive, there is moderate potential for further agricultural remains, former field systems, trackways, drainage features and surviving elements of the post-medieval rural landscape. In contrast, survival within the northern half is expected to be poor owing to extensive modern mining, which is likely to have removed or severely truncated earlier post-medieval remains, including former farmsteads and industrial infrastructure.
- 5.6.66 The modern character of the Site is dominated by extensive mineral extraction, including opencast coal mining and the Gass Water Barytes Mine. These activities continued the area's long industrial tradition but also fundamentally altered the surviving archaeological resource. Large areas of the northern and central parts of the Site were subject to excavation, spoil movement, regrading and restoration, resulting in substantial landscape modification and the destruction of earlier archaeological deposits.
- 5.6.67 As a result, the archaeological potential across most of the northern half of the Site is considered negligible across all periods. Any surviving remains are likely to be restricted to deeply buried deposits that escaped extraction or to isolated remnants preserved along the margins of former workings. By contrast, the southern half of the Site retains greater archaeological potential due to its continued use as rough grazing land and the lower levels of modern ground disturbance. In these areas, there remains some potential for previously unidentified archaeological remains of prehistoric, medieval and post-medieval date to survive below the present ground surface, particularly where associated with former agricultural activity and settlement. Overall, archaeological survival within the Site is therefore expected to be highly variable, with the greatest potential concentrated within the comparatively undisturbed southern portion of the development area.

Future Baseline

- 5.6.68 If the Proposed Development was not to proceed, there would be no change to the baseline condition of the site beyond natural processes, and it would continue to be an area of disused mineral extraction in the north and a mixture of commercial forestry and rough grazing to the south, although this is subject to the continuation of the current land uses by the landowners.



- 5.6.69 Climate change could affect naturally formed peat deposits, located in the northeastern section of the Site, leading to the potential destruction of paleoenvironmental evidence, should it be present. This may result in the loss of previously unrecorded cultural heritage assets.
- 5.6.70 Other impacts of climate change on buried remains might result from increased rainfall and fluctuating temperatures, with the sequence and frequency of natural soil saturation and desiccation changing the preservative conditions. This might result in damage or loss of organic artefacts. For upstanding remains, such change has the potential to result in increased water penetration, which may then cause or accelerate erosion and/or decay of the historic fabric.

5.7 Embedded Mitigation

- 5.7.1 The design of the Proposed Development has undergone a number of revisions and has considered the location of recorded heritage assets within the Site to avoid direct physical impacts where possible (refer also to **Chapter 3**).
- 5.7.2 The potential effects on the setting of sensitive heritage assets through operational impacts were carefully considered throughout the design process. The southern part of the Site was excluded from turbine siting due to its proximity to key elements of the setting of Kyle Castle (**SM3311**, shown on **Figure 5.2**), thereby reducing adverse effects on those aspects of its setting which contribute to its cultural significance.

5.8 Summary of Assessment Scope

Assets within the Site

- 5.8.1 Cultural heritage assets within the Site boundary were assessed in order to determine any direct and indirect impacts.

Assets outwith the Site

- 5.8.2 All nationally significant designated assets within 10 km of the proposed turbines were considered during the scoping phase for potential impacts on their setting and were subjected to a Cultural Heritage Appraisal (**Technical Appendix 5.2**). Also included within **Technical Appendix 5.2** is an assessment of potential impacts upon the setting of Non-Inventory Designed Landscapes (NIDLs). A high-level assessment was undertaken for NIDLs located between 5 km and 10 km from the Proposed Development. This assessment identified no NIDLs beyond 5 km with the potential to experience effects from changes within their setting. As such NIDLs within a 5 km study area were assessed for their potential to experience effects from changes within their setting. The scope of assessment of cultural heritage assets is set out in **Table 5-1**, in line with the advice received from HES and East Ayrshire Council. A full list of assets scoped in for assessment can be found in **Table 5-9**.

Scoped Out of the Assessment

- 5.8.3 With the exception of designated heritage assets scoped in for detailed assessment for the potential for significant effects on their setting (**Table 5-9**), designated heritage assets within 10 km of the proposed turbines that do not fall within the ZTV and designated heritage assets that are beyond the 10 km study area have been scoped out of further assessment due to having no potential for impacts which would have an effect from changes within their setting. This has been agreed upon in line with consultation undertaken with HES and East Ayrshire Council (**Table 5-1**).



5.8.4 **Table 5-7** provides a summary of which receptors and impacts have been scoped in or out of the assessment.

Table 5-7: Summary of Assessment Scope

Receptor/Impact	Scoped In?		Comments
	Construction	Operation	
Direct (physical) Impacts	Yes	No	Ground-breaking works (excavation, piling, landscaping, access routes, compounds) have the potential to physically damage or destroy archaeological remains and impact the fabric of historic structures. All construction groundworks are assessed for their potential to disturb known and potential buried archaeology, and for impacts on the structural integrity of adjacent historic buildings. Assessment methodology and results are presented in Section 5.11. No operational activities involve ground disturbance or physical contact with heritage assets. All direct physical impacts will occur during the construction phase only. Ongoing maintenance activities will be confined to existing hard surfaces and previously disturbed ground.
Indirect Impacts	Yes	Yes	Indirect impacts during construction include potential ground dewatering or waterlogging affecting buried archaeological remains, vibration impacts on historic structures, changes to access or use of heritage assets, and dust deposition on sensitive fabric. These are particularly relevant where archaeological resources are sensitive to hydrological change or where historic buildings lie within 50m of construction activities. Long-term indirect impacts include potential changes to groundwater regimes affecting waterlogged archaeological deposits, altered noise/light/air quality environments affecting appreciation of heritage assets, and changes to access or community use of heritage sites. These are assessed where the operational development has the potential to affect environmental conditions critical to asset preservation or appreciation, as discussed in - Section 5.9.
Setting Impacts on designated and non-designated heritage assets	No	Yes	Construction activities, which have the potential to cause effects within the setting of assets, are temporary and reversible in nature. While temporary structures (site compounds, cranes, scaffolding) may be visible, their short-term presence does not constitute a significant effect on the setting of non-designated heritage assets. The operational development has the potential to introduce permanent changes to the settings of heritage assets where setting contributes to their cultural significance, including changes to views,



Receptor/Impact	Scoped In?		Comments
	Construction	Operation	
			landscape character, and the ability to understand and appreciate these assets in their historic context. These effects are assessed in Section 5.10 .

Decommissioning

- 5.8.5 As described in **Chapter 2**, the effects associated with the construction phase are considered representative of the reasonable worst-case effects arising during decommissioning. Therefore no separate assessment of the decommissioning phase is presented in this chapter.

5.9 Assessment of Potentially Significant Construction Effects

- 5.9.1 Direct (physical) impacts would arise from any groundworks and/or other ground disturbance undertaken during construction of the Proposed Development. Within the main wind farm Site, activities with the potential to affect heritage assets include excavation of wind turbine foundations, substation compounds, crane hardstands, cable trenches, and any areas of cut and fill. Construction and maintenance of access tracks, laydown areas and working compounds also have the potential for direct physical impacts.
- 5.9.2 Along the Abnormal Indivisible Load (AIL) route potential impacts may arise from works required within over-run areas where modifications to existing infrastructure are necessary to facilitate turbine component delivery. These over-run areas are locations where groundbreaking works may be required. A description of the proposed works is outlined in **Technical Appendix 5.3**.
- 5.9.3 Specific activities which have the potential to cause impacts along the assumed Grid Connection Corridor include groundbreaking works associated with the constructions of wood pole foundations, as well as arising from plant movements. A description of the proposed works is outlined in **Technical Appendix 5.4**.
- 5.9.4 Where ground disturbance takes place, these activities would remove, truncate or change any heritage assets located within the area of ground disturbance. Damage to heritage assets caused in this way would be permanent and irreversible.
- 5.9.5 Direct impacts on the setting of designated heritage assets as a result of construction activity are considered to be minimal at most and temporary in nature. The worst-case scenario for settings impacts, comprising the completed Proposed Development, are considered under **Section 5.10**.

Known Remains

- 5.9.6 There are four assets recorded within the Site boundary which may be directly (physically) impacted by the Proposed Development; a post-medieval racecourse (**SLR2**), a section of the Gass Water Limeworks (**SLR7**), an aerial ropeway associated with the Gass Water baryte mine (**SLR71**), and the remains of the Gass Water Junction mineral railway (**SLR303**).

Gass Water (SLR2)

- 5.9.7 **SLR2** comprises the remains of a post-medieval racecourse depicted on the 1st Edition Ordnance Survey mapping. Unlike the assets discussed above, analysis of LiDAR data and aerial imagery confirms that the racecourse survives and remains



visible within the Site. Although associated stables (**SLR3**) recorded during a 1995 field inspection are located outwith the Site boundary, the surviving section of the racecourse within the Site retains legibility as a historic landscape feature and contributes to an understanding of post-medieval recreational activity in the area. As an asset of local importance, it has been assigned as being of low cultural significance.

- 5.9.8 Turbines 4 and 5 and their associated hardstandings and tracks, overlap part of the footprint of the racecourse. Construction of these elements would impact part of the surviving fabric of the asset. However, as only a small portion of the asset would be removed, and the majority of the asset remaining intact, it is anticipated that this would result in a low adverse magnitude of impact. On an asset of low cultural significance, this would result in a **Minor** significance of effect. This is **not significant** in EIA terms.

Gass Water (SLR7)

- 5.9.9 **SLR7**, associated with Gass Water Lime Works, is recorded 45m northwest of T7 along the route of the former railway. The HER entry is unclear regarding the specific element of the lime works to which the record relates, detailing a linear quarry, four buildings which represent a workers' row, stores or used for industrial process. Any surviving remains have been heavily affected by later opencast mining activity. As a consequence, the asset has either been removed entirely or survives in a highly degraded state, substantially diminishing its evidential and interpretive value. As such it is of negligible heritage significance.
- 5.9.10 The hardstanding for proposed T7 overlaps the recorded location of the asset, which has the potential to directly impact any subsurface remains which may still be present. Given that the asset, at best, survives in a highly degraded state and has largely lost its contextual elements, this would comprise a low adverse magnitude of impact on an asset of negligible cultural significance. As such this would result in a **Nil** significance of effect. This is **not significant** in EIA terms.

Gass Water / Gass Water Barytes Mine (SLR71)

- 5.9.11 **SLR71**, comprises the remains of an aerial ropeway associated with former baryte mining activity (**SLR25**), which originally extended northwest to southeast through the Site. However, only a small number of concrete footings now survive, with the majority of the asset having been removed as a result of later mining operations. As such, the asset has already undergone substantial disturbance and loss of fabric, with only singular concrete footings remaining, significantly reducing its ability to contribute to an understanding of the historic mining landscape. As such, it is deemed to be of negligible heritage significance.
- 5.9.12 Based on observations from the walkover survey there are no footings present within the area of the proposed new track which bisects the former route of the aerial ropeway. Additionally, due to the nature of the asset, it is not anticipated that subsurface remains would be present in the area of the proposed track. Given that the asset, at best, survives in a highly truncated state, this would comprise a neutral magnitude of impact on an asset of negligible cultural significance. As such this would result in a **Nil** significance of effect. This is **not significant** in EIA terms.

Gass Water Branch Junction (SLR303)

- 5.9.13 **SLR303** represents the dismantled Gass Water Branch Junction railway, which formerly extended northwest to southeast through the Site. The asset has been extensively truncated and removed through subsequent mining activity.



Observations made during the walkover survey indicate that the embankment remains largely intact to the northwest of the Site, where it is recorded within the HER as **SLR55**. However, it has largely been removed within the Site itself. As it is of local importance and the section within the Site is compromised by poor preservation, the asset is considered to be of low heritage significance.

- 5.9.14 There remains the potential for subsurface remains to exist within the footprint of the compound and its associated track, the upgraded track leading south from Turbine 4, and Turbine 7 and its hardstanding. Given that the asset, at best, survives in a highly degraded state, this would comprise a low adverse magnitude of impact on an asset of low cultural significance. As such this would result in a **Minor** significance of effect. This is **not significant** in EIA terms.

AIL

- 5.9.15 As described in **Technical Appendix 5.3**, there is the potential for direct physical impacts on known archaeological remains within the proposed AIL route corridor. These comprise the surviving remains of an unrecorded building (**SLR305**) in Area 2 and the remains of Blackfauld Farm (**SLR152**) in Area 7. The affected assets are considered to be of low heritage importance, representing assets of local importance of which numerous comparable examples survive within the wider landscape. The proposed works would result in a high adverse magnitude of impact as a worst case-scenario, resulting in a likely **Minor** significance of effect, dependent on the extent of the impact. This is considered **not significant** in EIA terms. The full extent of the impact will be assessed in detail as part of a future planning application.

Grid Connection

- 5.9.16 As described in **Technical Appendix 5.4**, there is the potential for direct impacts on 19 non-designated heritage assets located within the grid route corridor. Through careful micro-siting and mitigation, the risk of physical impacts would be reduced. Consequently, effects are anticipated to be **not significant** in EIA terms, subject to detailed assessment.

Unknown Remains

- 5.9.17 The potential for unknown archaeological remains to survive within the northern areas of the Site which were formerly used for mining during the modern period is low for all time periods. The processes involved with commercial mining, removing large areas of soil to reach deposits, would have removed the assets or eroded the archaeological context of any sub-surface archaeological deposits. Any surviving archaeological deposits would be of negligible cultural significance as the ability to understand them in their archaeological context would be removed. The subsequent removal of these deposits, should they be present, would be a high adverse magnitude of change, resulting in a **Minor** significance of effect. This is **not significant** in EIA terms.
- 5.9.18 The southern half of the Site has not been subject to the same intensity of modern development and ground disturbance as areas affected by mining activity and, as a result, retains a greater potential for the survival of previously unrecorded archaeological remains. The land has largely remained in use as rough grazing and there is potential, albeit very low, for below-ground archaeological remains of medieval or post-medieval date to survive. Such remains, if present, would most likely relate to agricultural activity, small-scale settlement, land management or



resource exploitation. These would inform us of land use on a local scale and as such would be of low cultural significance.

- 5.9.19 Should currently unknown archaeological remains be present, there is potential for direct physical impacts during construction works, including excavation for turbine foundations, hardstandings, access tracks and associated infrastructure. Such works could result in the partial or complete removal of archaeological deposits, leading to a permanent loss of archaeological information. Any previously unrecorded remains are likely to be of local importance and therefore of low cultural significance. In a worst-case scenario, the magnitude of impact on these remains would be high adverse due to their complete removal. Given the above, this would result in a **Minor** significance of effect. This is **not significant** in EIA terms.

AIL

- 5.9.20 As described in **Technical Appendix 5.3**, there is also potential for direct physical impacts on currently unrecorded sub-surface archaeological remains across Areas 1 to 7, which are likely to be post-medieval in date. Any such remains are anticipated to be of negligible cultural significance of local importance. In a worst-case scenario, complete removal of these assets would result in a high adverse magnitude of impact. Given that assets of these types are highly represented within the archaeological record, their removal would in a **Minor** significance of effect. As such, these effects are considered **not significant** in EIA terms.

Grid Connection

- 5.9.21 As described in **Technical Appendix 5.4**, there is also potential for direct impacts on currently unrecorded archaeological remains within the grid route corridor, particularly remains of prehistoric and post-medieval date. If present, these remains are unlikely to be of greater than medium cultural significance and are therefore unlikely to give rise to significant effects. With appropriate micro-siting and mitigation measures, any effects on unknown remains are anticipated to be **not significant** in EIA terms.

Table 5-8: Potential Direct Construction Impacts

Asset	Infrastructure	Cultural significance	Magnitude of Impact	Significance of Effect	Is the Effect Significant In EIA Terms?
Primary Site					
Race Course (SLR2)	Track, Hardstanding, T5	Low	Low Adverse	Minor	No
Building; Lime Kilns; Railway; Coal Mine (SLR7)	Hardstanding, T7	Negligible	Low Adverse	Nil	No
Aerial Ropeway (SLR71)	Track	Negligible	Neutral	Nil	No
Mineral Railway (SLR303)	Track, Compounds	Low	Low Adverse	Minor	No



Asset	Infrastructure	Cultural significance	Magnitude of Impact	Significance of Effect	Is the Effect Significant In EIA Terms?
Unknown remains	Infrastructure in areas unaffected by modern mining activity	Low	High Adverse	Minor	No
AIL Over-run Areas					
Blackfauld Farm (SLR152)	Over-run Area 1	Low	High Adverse	Minor	No
Building (SLR305)	Over-run Area 6	Low	High Adverse	Minor	No
Unknown remains	All over-run areas	Low	High Adverse	Minor	No
Grid Connection Corridor					
Known remains	Any areas of construction within the proposed corridor	Medium/Low	High Adverse	Moderate/Minor	No
Unknown remains	Any areas of construction within the proposed corridor	Low	High Adverse	Minor	No

5.10 Assessment of Potentially Significant Operational Effects

5.10.1 Impacts during the operation of the Proposed Development will relate to changes within the setting of cultural heritage assets. In agreement with HES, the assets listed in **Table 5-9** have been scoped in for assessments on their setting. The justification for assets scoped out of detailed assessment is provided in **Technical Appendix 5.2**.

Table 5-9: Assets Scoped in for Further Assessment

Designation Reference	Designation Title	Type of Asset
SM3311	Kyle Castle, 200m E of Dalblair	Scheduled Monument
SM4631	Cairn Tables, two cairns	Scheduled Monument
GDL00149	Dumfries House	Inventory Garden and Designed Landscape
LB14413	Dumfries House	Category A Listed Building
LB14416	Dovecote Dumfries House	Category A Listed Building
LB14414	Avenue Bridge Dumfries House	Category A Listed Building



Designation Reference	Designation Title	Type of Asset
LB96	The Temple Dumfries House	Category A Listed Building
LB14273	Sorn Castle	Category A Listed Building

Kyle Castle, 200m E of Dalblair (SM3311)

- 5.10.2 Kyle Castle comprises the ruins of a towerhouse. The asset was first recorded in written sources in 1445, when the lands and castle, then held by the monks of Melrose Abbey, were granted to John Farquhar of Gilmilnscroft. The castle developed as a tower house with a courtyard, functioning as the residence of the Farquhar family in late medieval Ayrshire. Over time, ownership passed from the Farquhars to the Cunninghams, and later to the Stewarts of Bute, but little detailed documentary history survives. By the later 18th century the castle had fallen into ruin, its masonry extensively robbed for nearby farm buildings and dykes, leaving only fragmentary remains of the keep and courtyard walls visible today.

The asset derives part of its cultural significance from its intrinsic characteristics. Although the upstanding remains are limited, the surviving masonry, structural remains and architectural features provide direct evidence of medieval building techniques and allow an understanding of the castle's layout, defensive character and occupation. The remains also retain archaeological potential, contributing to the monument's evidential value and enabling the site to demonstrate its historical development. There is also a strong likelihood that subsurface features survive. While no definitive evidence has yet been identified for an earlier castle or fortified residence, the site's strategic location and visual prominence suggest that it may have been occupied prior to the construction of the existing tower. Targeted archaeological investigation has the potential to provide valuable insight into the origins and development of the site, including the nature, extent, and function of any earlier phases of activity. Such evidence could contribute to a broader understanding of medieval domestic and defensive architecture, patterns of landscape reuse, and the status of those who occupied the site, as reflected in the form and character of any surviving remains. The castle is of national importance because it has an inherent potential to make a significant contribution to our understanding of medieval castles, defensive architecture, and elite occupation in Scotland. The surviving remains, together with the high potential for preserved archaeological deposits, can provide important information about the castle's development, function, and relationship with the surrounding landscape. Accordingly, the asset is considered to be of high cultural significance.

- 5.10.3 The castle occupies a strategically chosen setting on a peninsular site, between the Glenmuir Water which flows east to west directly north of the castle, and the Guelt water, which flows in the same direction directly to the south. The confluence of the Guelt Water and the Glenmuir Water, lies 30m to the west of the castle, resulting in steep slopes on three sides provided strong natural defence. The asset's positioning at the intersection of these watercourses would have allowed its inhabitants to monitor and control access to and along the rivers to the northeast, northwest and south. This location also marks the historic boundary between the old districts of Kyle Regis and Kyle Stewart, suggesting an administrative as well as military significance behind its placement. Kyle Castle's siting combines defensive advantage, a prominent positioning in the landscape. Highly elevated in comparison to the surrounding river valleys, as seen **Photograph 4**, and access to water, characteristic of later medieval castles in southwest Scotland, where the focus would have been on defence, status and access to resources.



- 5.10.4 Approach to the castle is possible from the Glenmuir Water from the west, where the confluence of the two watercourses form a natural pathway through the landscape. At the westernmost escarpment a path curves up the northwestern side of the tongue of land upon which the asset is situated, as seen in **Photograph 3**, entering what is suggested to have once formed the courtyard of the castle. When approaching from this direction, the landform atop which the castle is situated would have formed a dominating presence in the landscape, showing ownership and control of the inhabitants over the surrounding landscape and the routeway in particular, as seen in **Photograph 4**. The asset may also be approached from the southeast, though is much less commanding in visual presence, with the slope upwards towards the asset being far more gradual. The approach from the east, over what is now farmland, would have been the easiest approach, and the least defensible. As such, it is likely that the castle is situated to defend from approaches from the west, while approaches from other directions may represent more peaceful approach, perhaps from within territory owned by the inhabitants.





Photograph 3: Entrance to SM3311 from the west



Photograph 4: Approach to SM3311 from the west

- 5.10.5 The aspects of Kyle Castle's setting that contribute to its cultural significance are primarily linked to its defensive role. Its proximity to key routes through the surrounding landscape would have enabled the monitoring and control of movement along the valley, providing both strategic oversight and protection of the adjacent



lands. The castle's elevated position overlooking these routeways, particularly along the confluence of the two watercourses into the Glenmuir Water with extensive views to the northwest (**Photograph 5**), northeast (**Figure 5.6b CH VP1**) and southeast (**Figure 5.6c CH VP1**), and therefore represents the principal component of its setting from which its cultural significance is derived.

- 5.10.6 Views of the castle upon the primary approach from the west also form an important part of the asset's setting which contributes to its significance, as the landform atop which the castle is situated would have dominated the landscape, displaying the ownership, power, and control of the surrounding territory and routeways.
- 5.10.7 Views over the immediate surrounding landscape also contribute to the setting of the asset from which it derives its significance, albeit to a lesser extent, given that the castle's inhabitants likely owned and utilised the fertile land within the river valleys for agricultural purposes.
- 5.10.8 Up to 12 turbines of the Proposed Development are predicted to be visible to the northwest of the asset under a bare-earth scenario, as illustrated in **Figure 5.2**. The proposed turbines would be visible in the periphery of views looking northwest along the Glenmuir Water valley. Whilst this aspect of the asset's setting is primarily focused on the watercourse and its enclosed, tree-lined valley, as depicted in **Figure 5.7b**, the turbines would appear above the northern banks of the water course. The introduction of large modern infrastructure in a relatively undisturbed landscape would form a minor distraction to the ability to appreciate, understand and experience this aspect of the setting of the asset. The turbines would not be located in direct views along the watercourse, nor would they obstruct views along the watercourse, they would draw the eye away from the key view to a minor extent.





Photograph 5: View from SM3311 towards confluence of Glenmuir Water and Guelt Water to west

- 5.10.9 The ZTV (**Figure 5.2**) demonstrates that up to 10 turbines would be intermittently visible when approaching Kyle Castle along the Glenmuir Water from the west. However, visibility of the Proposed Development along this approach would not detract from the ability to understand, experience or appreciate views of the castle, as the turbines would be located behind the viewer once the castle was visible, and so would not compete with the asset for dominance in the skyline.
- 5.10.10 Similarly, the Proposed Development would not adversely affect approaches along the Guelt Water and Glenmuir Water from the northeast and southeast respectively, where up to nine and seven turbines may be visible. Along these routes, the enclosing landform of the valleys would largely restrict visibility of the turbines, which would, where visible, appear in the extreme periphery of views and would not distract from appreciation of the asset. Given that the castle would be the primary focus of views when approaching, any visibility of turbines in the backdrop of these views would not compete for dominance in these views, with the castle remaining the focal point. The Proposed Development would not be visible in views from the asset along the Guelt Water or Glenmuir Water to the northeast and southeast, as seen on **Figure 5.2**.
- 5.10.11 As such, the Proposed Development would have a low adverse magnitude of impact on an asset of high cultural significance. Given that the attributes of setting that contribute most strongly to an understanding and appreciation of the castle would remain legible and largely unaltered following the introduction of the Proposed Development this would result in a **Minor** significance of effect. This is considered **not significant** in EIA terms.



Assumed Grid Connection Corridor

- 5.10.12 There is also potential for visibility of upstanding elements of the assumed grid connection corridor to be visible from the asset, which will take the form of a 132 kV overhead line of wooden pole construction, reaching no higher than 20m above ground level. In a worst-case scenario, at its closest, wooden poles relating to the overhead line would be c.1.7 km to the northwest of Kyle Castle. The impact on views which contribute to the cultural significance of the asset would be minimal due to the nature of its construction and the distance from the asset. As such it would form a very minor modern intrusion at most in views in this direction. The overhead line would therefore not cause a distraction to the ability to appreciate, understand and experience the setting of the asset. The impact of the introduction of the overhead line in views from Kyle Castle to the northwest would therefore be unlikely to increase the minor significance of effect from the primary Proposed Development, as outlined above. Any potential effects on the setting of Kyle Castle resulting from the overhead line in combination with the Proposed Development would be subject to detailed assessment within a future application.

Cairn Tables, two cairns (SM4631)

- 5.10.13 The monuments comprise two burial cairns dating to the Late Neolithic or Early Bronze Age, situated on the summit of the hill known as Cairn Table. The eastern cairn (Cairn A) measures approximately 16m in diameter and 3.5m high, while the western cairn (Cairn B), located around 30m to the southwest, measures approximately 12m in diameter and stands up to 1m high. The western cairn has been heavily robbed, largely to provide material for a memorial cairn constructed in 1920, commemorating those who served in WWI, and has also been disturbed by the construction of an Ordnance Survey triangulation pillar. The modern memorial cairn is located 16m to the southwest of Cairn B, outwith the scheduled area. In contrast, the eastern cairn appears to remain largely undisturbed. Both cairns are likely to cover one or more burials, either cremated or unburnt, likely contained within cists, and may also incorporate secondary burials. They may also preserve contemporary land surfaces sealed beneath their construction.
- 5.10.14 The cairns are of national importance as representatives of Late Neolithic and Early Bronze Age funerary and ceremonial practices and are considered to be of high cultural significance. In addition, the preservation and study of the buried land surfaces beneath the cairns would be of national importance for understanding land use during this period. The intrinsic characteristics of the cairns contribute to their cultural significance through the survival of their form, construction, and archaeological deposits, including the potential for human remains, cists, artefacts, and environmental evidence. These characteristics provide important evidence for prehistoric burial practices, monument construction, and the communities that built and used the cairns.
- 5.10.15 The cairns are prominently positioned on the summit of Cairn Table, a distinctive landmark that commands extensive views across Upper Ayrshire, Nithsdale and the Southern Uplands. Cairns were commonly constructed on hilltops, ridges and other visually prominent locations during the Late Neolithic and Early Bronze Age, where they could serve funerary, commemorative, territorial and ceremonial functions. The elevated position of the monuments would have enhanced their visibility within the surrounding landscape and reinforced their role as enduring markers of ancestral presence and memory.
- 5.10.16 The setting of the cairns contributes significantly to their cultural significance. Their location on one of the highest and most prominent summits in the surrounding area, at around 563m AOD, suggests a deliberate choice of landscape setting, intended



to maximise intervisibility both with communities occupying the lower-lying valleys and with other prominent hills on the opposite sides of the valleys outlined above, which may have contained similar monuments. The cairns may have formed part of a wider network of prehistoric monuments distributed across the surrounding uplands. In particular, the visual relationship with Cairn Kinney (**SM4275**), located c.7km to the east-southeast and forming a subsidiary summit within the same upland massif, raises the possibility that these monuments were components of a broader funerary, ceremonial and communication landscape. While direct archaeological evidence for a functional connection is lacking, the repeated use of prominent hilltops for cairn construction across this landscape is consistent with wider prehistoric patterns of monument placement²².

- 5.10.17 The relationship between the two cairns also contributes to their cultural significance, and intervisibility between the two forms a key aspect of their setting which contributes to this significance. Their proximity indicates they form part of the same funerary, ceremonial, and communication landscape, and were deliberately placed during their construction to maintain visual connection. Views from east to west from Cairn A, and views from west to east from Cairn B therefore form an important element of the cairns' setting which contributes to their cultural significance.
- 5.10.18 The cairns are also highly visible on approach. While they may be approached from numerous directions, their prominence in views from surrounding routeways, including the valley of the River Ayr c.3.8km to the north, the valley of the Douglas Water c.0.94km to the northeast, and the valley of the Duncanton Water c.2km to the southeast, suggests that these corridors may have formed important approaches to the monuments. Prominent views of the cairns from the valley of the River Ayr looking southwest, south and southeast, from the Douglas Water to the southwest and from the Duncanton Water to the northwest while travelling through the valleys therefore form an aspect of the cairns' setting which contributes to their cultural significance.
- 5.10.19 Modern features, including the 1920 war memorial cairn and Ordnance Survey triangulation pillar, have altered parts of the summit and form part of the cairns' modern setting; however, the fundamental characteristics of the wider landscape setting remain legible, as seen in **Photograph 6** and **Photograph 7**. The modern memorial cairn introduces a degree of visual distraction within the summit group and partially interrupts views between the two prehistoric cairns. There have also been other modern intrusions in more distant views from the monument, including from operational wind farms. The most prominent of these is Kennoxhead wind farm, comprised of 19 turbines, which is visible from the cairns when looking to the northeast, east and southeast, the closest turbine being located c.2.4km to the east. Further existing developments can be seen in distant views to the north, west and east, forming minor distractions to the ability to appreciate the long-distance views of the surrounding landscape in all direction.

²² RCAHMS (Royal Commission on the Ancient and Historical Monuments of Scotland) 1997. Eastern Dumfriesshire: An Archaeological Landscape, pp. 104. Edinburgh: The Stationery Office





Photograph 6: View from Cairn B, facing west towards Proposed Development with modern cairn visible



Photograph 7: View from base of Cairn A towards Cairn B, facing west

- 5.10.20 The bare earth ZTV (**Figure 5.2**) indicates that up to nine turbines would be visible from Cairn B and six turbines from Cairn A. The proposed turbines are therefore primarily seen within views to the west and southwest from the cairns. The turbines would not be present in views from Cairn B towards Cairn A to the west, nor compete for prominence upon approaches along the valley of the River Ayr, where they would be experienced in peripheral views at most in views towards the southwest, or the Douglas Water and the Duncanton Water, where intervening topography would screen the turbines from views. In views from Cairn A to Cairn B to the west, visibility of the Proposed Development would be screened by the presence of the modern memorial cairn, as outlined above. The relationship between the prehistoric cairns remains can still be understood, appreciated and experienced, while key outward views to the north, northeast and northwest across the valley routeways, together with views towards Cairn Kinney (**SM4275**) in the east-southeast, are also retained.
- 5.10.21 The visualisations, as seen in **Figure 5.7a**, **Figure 5.7f** and **Figure 5.7g CH VP2**, show that the presence of both Cairn B and the modern marker cairn would largely screen the Proposed Development from views to the west from the eastern cairn and from the area between the cairns. As such the presence of the Proposed Development in key views to the west would be minimal and would not form a distraction to the ability to appreciate, understand and experience the relationship between the cairns and its contribution to their cultural significance.



- 5.10.22 Though the Proposed Development would be wholly visible when standing on the western side of the Scheduled Monument, as seen in **Figure 5.1h LVIA VP 15**, the presence of Cairn Hill, Wood Hill and Wardlaw Hill in the foreground of views towards the west draws the eye downwards to the north, to the valley of the River Ayr. As such, despite the turbines being fully visible from this point, they would form only a minor distraction in views which form only a minor contribution to an aspect of the cairns' setting from which they derive their cultural significance, with long distance views in all other directions remaining intact.
- 5.10.23 The turbines visible from the cairns would be perceived within the wider panoramic landscape and would only affect views from Cairn B to the hills to the west and southwest, with views which form a primary aspect of the cairn's setting, namely their intervisibility with one another and Cairn Kinney, and their prominence in the landscape upon approaches from the surrounding watercourses and their valleys remaining unaffected. As a result, they would not substantially alter the key aspects of the asset's setting that contribute to its significance, namely, the relationship between the two cairns, their prominence within the landscape, its relationship with the valleys below, and its visual connection with other prominent upland locations, including Cairn Kinney. Consequently, while the proposed development would introduce a modern element into part of the wider setting, the effect on the asset's ability to express and communicate its archaeological, funerary and landscape significance would be limited.
- 5.10.24 The result would therefore be a low adverse magnitude of impact on an asset of high cultural significance. Given the introduction of turbines would be limited to a small component of its extensive setting, the resulting effect is assessed as **Minor**. Such an effect would not materially diminish the ability to understand, appreciate or experience the monument and is therefore considered **not significant** in EIA terms.

Dumfries House (GDL00149)

- 5.10.25 The Dumfries House Inventory Garden and Designed Landscape (GDL) encompasses the estate surrounding the Category A listed Dumfries House (**LB14413**). The estate was originally owned by the Craufords of Loudon and was known as Lochnorris by 1440. In 1635 it was acquired by the 2nd Earl of Dumfries, and between 1754 and 1759 the 4th Earl of Dumfries, William Dalrymple, commissioned John, Robert and James Adam to design and construct the present house. Ownership passed to the Stuart family in 1814 when the 7th Earl of Dumfries inherited the Bute estates and titles. The estate remained under Bute ownership until 2007, when it was purchased by a consortium led by the then Prince of Wales (now King Charles III). Since that time the estate has undergone substantial restoration and enhancement and now operates as a major visitor attraction, supporting a range of educational, environmental and social initiatives.
- 5.10.26 The estate contains a rich assemblage of architectural and landscape features that contribute to its cultural significance and high heritage value as a nationally inventoried GDL. At its centre stands Dumfries House (**LB14413**), which forms the architectural and compositional focus of the designed landscape. The Category A Listed Avenue Bridge (**LB14414**), designed by John Adam in 1760, forms part of the principal northern approach and carries the driveway across the Lugar Water, reinforcing the designed movement through the landscape. Approximately 1km north of the house stands the Category A-Listed The Temple (**LB96**), which was intended as a gatehouse structure and visual termination to the historic northern approach. Although the modern Duchess of Rothesay Avenue now extends south-west from The Temple, creating a formal avenue through the landscape, views between The Temple and Dumfries House are no longer possible due to intervening



woodland planting and the presence of agricultural buildings associated with the Pierburg Education Farm.

- 5.10.27 Earlier elements within the estate contribute to the legibility of pre-18th-century phases of occupation and landscape development. These include the 1671 doocot (Category A Listed Building **LB14416**) and the remains of Terringzean Castle (Category B Listed Building **LB14423**), located within the western part of the estate. Other features that contribute to the significance of the designed landscape include the West Gate (**LB14421**), Stockiehill Lodges (**LB14422**), Lady's Bridge (**LB14417**), the coach house (**LB14420**), a lectern-style sundial (**LB14415**), and the non-designated Dumfries House Mains. Collectively these elements reinforce the planned and hierarchical arrangement of the estate and illustrate successive phases of development.
- 5.10.28 The setting of Dumfries House is fundamental to its cultural significance and is defined by its location within the broad valley of the Lugar Water. The house occupies a carefully chosen position on the southern side of the river and is integrated within a designed landscape of parkland, woodland, formal gardens and designed approaches. The valley landform, characterised by gently sloping hills to the north and south, allows extensive views across the estate and forms an important component of its designed character.
- 5.10.29 The estate comprises extensive parkland on both sides of the Lugar Water, historically managed as grazing land interspersed with mature trees and woodland. The parkland provides the principal setting for the house and its associated structures and contains a rich assemblage of mature specimen trees, some associated with early phases of designed planting. Formal gardens lie immediately south and west of the house, while ornamental gardens occupy the north bank of the Lugar Water between the Avenue Bridge and the restored Queen Elizabeth Walled Garden.
- 5.10.30 Woodland forms a defining element of the designed landscape and contributes substantially to its scenic, aesthetic and experiential qualities. The estate contains ornamental plantations, woodland belts, avenues and areas of denser forestry. Roundel plantations south of the A70, some of which pre-date Dumfries House itself, act as distinctive visual markers within longer-distance views. Woodland areas including Shaw Wood, Hinnieston Wood and Terringzean Wood contribute to the enclosure and structure of the landscape, while designed rides, avenues and pathways guide movement through the estate. Shaw Wood, located immediately west of the house, formerly contained a tree-lined avenue and bowling green but has since been redesigned into an area of mature woodland traversed by pathways.
- 5.10.31 Avenues form an important component of the designed landscape. The historic northern approach from Auchinleck passed through parkland and crossed the Lugar Water via the Avenue Bridge before arriving at the house. Woodland planting along this route creates a deliberate sequence of screening and revelation, limiting views of the house until visitors approach the core of the estate. This gradual transition enhances the sense of arrival and contributes to the designed experience of the landscape. The historic primary routeway through the estate can be seen on General Roy's Military Map of Scotland (1750), as a tree-lined avenue running east to west from Cumnock (**Figure 5.12a** and **Photograph 8**). Modern additions include a tree-lined avenue extending south-eastward from the house towards the historic roundels south of the A70, creating a strong visual axis through the estate, and the Duchess of Rothesay Avenue, established during the 2010s.





Photograph 8: View from historic avenue facing east

- 5.10.32 Designed views are an important contributor to the cultural significance of the designed landscape. The house commands an expansive vista northward across the parkland and Lugar Water and south-eastward along the modern avenue towards the historic roundels. Equally important are inward views towards the house from the northern parkland and historic approaches, where the building acts as a focal point within the wider composition. The interplay between outward views from the house and inward views towards it forms a key aspect of the design intent.
- 5.10.33 The wider setting of the designed landscape also contributes to its cultural significance. The strategic placement of woodland belts, plantations and hedgerows limits outward visibility from surrounding roads, particularly the A70, while simultaneously restricting views into the estate. As a result, the estate retains a strongly rural and secluded character despite the large scale of the designed landscape and the extensive views available from within it. This carefully managed balance between enclosure and openness is a defining characteristic of the estate and contributes significantly to its aesthetic and cultural value.
- 5.10.34 Historic mapping (1st Edition OS maps, sheets Ayrshire XXXV.6 and Ayrshire XXXV.10, both published 1896) demonstrates the evolution of the designed landscape from earlier formal layouts associated with Lochnorris Castle, through mid-18th-century improvements focused on Dumfries House, to subsequent phases of planting and enhancement. While some historic features, including former avenue alignments, have been lost, the overall spatial structure, designed



- composition and visual relationships that define the character and significance of the Inventory Garden and Designed Landscape remain readily appreciable today.
- 5.10.35 The bare earth ZTV (**Figure 5.2**) indicates that theoretical visibility of the Proposed Development varies across the designed landscape, with between zero and 12 turbines potentially visible from different locations within the GDL. The closest turbine would be T12, located approximately 6.2km to the northeast.
- 5.10.36 Visibility is greatest from more elevated and less wooded parts of the estate such as the parkland areas within the north of the GDL while woodland belts, policy planting, landform and designed landscape features substantially restrict visibility across much of the GDL, created a sense of enclosure which is key to the character of the gardens. Importantly, the turbines would not form a notable distraction within the key designed views that contribute most strongly to the significance of the asset. The principal designed views associated with Dumfries House, including views northwards across the Lugar Water and parkland, views along the historic and modern avenue alignments, including the original routeway through the gardens (**Figure 5.12b CH VP 7**) and views within the core designed landscape, would not contain any visibility of turbines.
- 5.10.37 Whilst the Proposed Development would introduce views of the proposed turbines into parts of the wider setting, these would be experienced primarily within peripheral views beyond the principal designed landscape composition. The historic relationships between the house, parkland, woodland structure, river valley, avenues, architectural features and designed approaches would remain readily legible and appreciable. The scenic, aesthetic and experiential qualities of the Inventory Garden and Designed Landscape would therefore remain largely unchanged.
- 5.10.38 Given the high cultural significance of the Dumfries House Inventory Garden and Designed Landscape and the limited extent to which the Proposed Development would affect those aspects of setting that contribute to its significance, the magnitude of impact is assessed as neutral. As a consequence, the overall significance of effect would be **Nil**. The proposals would not materially alter the ability to understand, appreciate or experience the key aspects of the setting of the Inventory Garden and Designed Landscape which contribute to its cultural significance and the effect is therefore considered **not significant** in EIA terms.

Dumfries House (LB14413)

- 5.10.39 Dumfries House is situated within an extensive Garden and Designed Landscape, as described in **Paragraph 5.10.25-38**, which contains a number of associated Listed Buildings.
- 5.10.40 Although the estate has earlier origins, the present house dates from 1754 and was constructed for the 5th Earl of Dumfries, with James, Robert and John Adam acting as architects and contractors. Subsequent alterations were undertaken during the nineteenth century following its acquisition by the Marquess of Bute in 1814. The property is now under the ownership of a charitable organisation, and significant investment has been made in its conservation and restoration. Dumfries House is a Category A listed building of exceptional cultural significance. Its heritage value derives principally from its status as one of Scotland's finest and most complete Adam country houses, its high degree of architectural integrity, its nationally important collection of original eighteenth-century interiors and furnishings, and its relationship with the surrounding designed landscape, which forms an integral component of its cultural significance. Accordingly it is considered to be an asset of high cultural significance.



- 5.10.41 The house occupies a central position within the Inventory Garden and Designed Landscape (**GDL00149**), parts of which, such as the roundels to the south, are of considerable antiquity. The landscape also contains a number of other Listed Buildings, which are assessed separately within **Paragraphs 5.10.46-65**. Historically, the principal approaches to the House were from the east and north; however, the primary public access is now obtained from the south via the A70, affording views of the principal elevation. A longer approach from the north, via the B7036, follows a tree-lined avenue passing the Listed Temple. Along these routes, the House is partially screened by plantation planting and vegetation associated with the River Lugar to the north.
- 5.10.42 The key elements of setting that contribute to the significance of Dumfries House comprise its relationship with the surrounding designed landscape, including the formal gardens, terraces, parkland, woodland structure, designed approaches, the Lugar Water and associated estate buildings. The principal elevation remains focused on the formal gardens and rising ground to the south, whilst views northwards continue to be centred on the river corridor and parkland. The setting of Dumfries House is defined principally by the surrounding estate, particularly those elements encompassed within the Garden and Designed Landscape, together with the Lugar Water to the north. The spatial and visual relationships between the House, the designed landscape features, and the associated structures form key components of its setting. The principal elevation of the House faces south, overlooking a formal terrace and gardens towards rising ground extending to and beyond the A70, as seen in **Figure 5.8b CH VP3**. Points of appreciation also form an aspect of the house's setting which contributes to its cultural significance. Key points within the GDL from which the house is appreciated include the principal historic approach from Auchinleck to the northwest, where the house is gradually revealed once crossing the Avenue Bridge (**LB14414**), as well as the modern approach from the southwest through the West Gates.
- 5.10.43 Dumfries House lies approximately 8.1km southwest of the nearest proposed turbine (T12). **Figure 5.2** indicates that up to 14 turbines may theoretically be visible from the vicinity of the House. However, visibility is substantially filtered and screened by the mature woodland of the Garden and Designed Landscape, including policy woodland, plantations and avenue planting that form an integral component of the designed setting, being specifically planted to focus views along avenues and create a sense of enclosure within the GDL. As a result, turbine visibility from the House itself and its immediate surroundings would be limited and intermittent, with long distance views in many directions being intentionally limited, as demonstrated in **Figure 5.8a CH VP3**. Though vegetation is generally not considered to be effective screening due to their potential for removal, the plantations within Dumfries House GDL (**GDL00149**) are intentionally designed to create the character of the estate, and should they be removed, would likely be replaced to retain said character.
- 5.10.44 Although turbines would be theoretically visible to the northeast of the house, they would not form a notable feature within the principal designed views to or from the house. The extensive woodland framework surrounding the house limits the influence of distant views and ensures that appreciation of the asset remains focused on the designed landscape and associated architectural features. The historic and designed spatial relationships between the house and the wider estate would remain intact and readily appreciable. Consequently, the Proposed Development would not materially alter the character of the House's immediate setting, nor would it affect the ability to understand and appreciate its architectural, historical or designed landscape significance.



- 5.10.45 Given the high heritage significance of Dumfries House as a Category A Listed Building and the limited influence of the Proposed Development on those aspects of setting that contribute to that significance, the magnitude of impact is assessed as neutral. The resulting effect is therefore assessed as **Nil** significance of effect. The Proposed Development would not diminish the cultural significance of the asset and the effect is therefore considered **not significant** in EIA terms.

Dovecote Dumfries House (LB14416)

- 5.10.46 The dovecote is the oldest surviving structure within the Dumfries House estate, dating to 1671. Its significance derives principally from its architectural interest as a well-preserved example of a seventeenth-century estate doocot and from its historic association with the early development of the estate prior to the construction of Dumfries House. As the earliest surviving building within the estate, it provides important evidence for the seventeenth-century origins of the property and contributes to an understanding of the continuity of occupation and management of the landscape before the major eighteenth-century improvements undertaken by the Earls of Dumfries. The dovecote therefore contributes significantly to the historical development of the estate and forms an important element within the wider group of historic estate buildings that collectively illustrate successive phases of estate development. As a result, it is considered to be an asset of high cultural significance.
- 5.10.47 The setting of the dovecote is historically connected to the wider estate prior to its current iteration and would have formed a working agricultural element of the early estate, in which its immediate setting likely would have formed open fields. As a functional asset outward and long distance views beyond the fields from the asset would not form a contribution to its cultural significance. Given the development of the estate into a grander designed landscape over time, its immediate setting is now strongly enclosed by intentionally planted mature woodland and vegetation, which substantially restrict both outward and inward views, as seen in **Photograph 9** and **Photograph 10**. As outlined in **Paragraph 5.10.29** to **5.10.31**, this plantation is intentional and if it were to be removed it would be replaced. As a result, the dovecote is experienced primarily for its architectural appreciation and historical value within its immediate surroundings rather than in relation to the broader landscape.





Photograph 9: View of LB14416 facing north upon approach



Photograph 10: View from LB14416 facing south along approach

5.10.48 **Figure 5.2** demonstrates that up to 13 turbines would be visible from the vicinity of the asset. However, intervening vegetation and local screening mean that the



Proposed Development would not be visible from the doocot itself. The key relationships that contribute to the asset's significance are its association with the historic estate, its functional role as an agricultural building, its evidential value as the earliest surviving estate structure, and its architectural character. Visibility of turbines in intermittent views through the surrounding vegetation would not form a distraction to the ability to appreciate, understand or experience the dovecotes entirely localised setting.

- 5.10.49 Consequently, the Proposed Development would not affect the ability to understand, appreciate or experience the heritage significance of the doocot. Its contribution to the time-depth, historic development and legibility of the Dumfries House Dovecote within the wider estate would remain fully intact.
- 5.10.50 Given the high heritage significance of Dumfries House Dovecot and the neutral magnitude of impact to its setting, the resulting significance of effect is assessed as **Nil**. This would be considered **not significant** in EIA terms.

Avenue Bridge, Dumfries House (LB14414)

- 5.10.51 The Avenue Bridge is a stone-built, three-arched structure spanning the Lugar Water to the north-west of Dumfries House. Contemporary with the construction of the house, it formed an integral component of the eighteenth-century designed landscape and the principal northern approach to the estate. Its significance derives from both its architectural quality as a work associated with the Adam family and its historic role within the designed movement and composition of the estate landscape. The Avenue Bridge is an asset of high cultural significance, deriving value from its architectural quality, its role within the eighteenth-century designed landscape of Dumfries House, and its function as a key component of the historic approach to the house. The bridge has strong group value through its association with the Category A listed Dumfries House and the nationally important Inventory Garden and Designed Landscape, contributing to the understanding and appreciation of the estate's historic design and development. As such, the bridge is considered to be an asset of high cultural significance.
- 5.10.52 The setting of the bridge is closely associated with the Lugar Water corridor, its function as a crossing point, and its relationship with Dumfries House and the wider designed landscape. The bridge was designed to be experienced as part of the approach sequence to the house, contributing to the controlled progression through the estate. The view from the bridge toward Dumfries House can be seen in **Photograph 12**. The approach to the bridge from the north can be seen in **Photograph 11**. Mature woodland and vegetation along the riverbanks now create a relatively enclosed setting, restricting long-distance outward views and reinforcing the bridge's visual and functional relationship with the river landscape. The principal experiential and architectural views associated with the asset are focused on movement across the river crossing and on the relationship between the bridge, the watercourse and the designed estate, and as such form the primary aspect of the bridge's setting which contributes to its cultural significance.





Photograph 11: View of LB14414 on approach from north



Photograph 12: View from LB14144, facing north



- 5.10.53 The ZTV, as seen on **Figure 5.2**, indicates that between 12 and 13 turbines would be visible from the vicinity of the bridge in a bare earth scenario. Visibility is primarily concentrated within views to the east and northeast and the turbines would be offset from key views due to their distance. In a bare-earth scenario, turbines may be experienced within the extreme periphery of views when crossing the bridge from north to south and in limited views looking northeast along the Lugar Water corridor, as seen in **Figure 5.9a CH VP4**.
- 5.10.54 Views when travelling from north to south, which emphasise the bridge's historic role within the approach to Dumfries House and contribute to its setting and cultural significance, would therefore not include visibility of the Proposed Development. The turbines would not form a notable component of the asset's key setting relationships and would not be experienced alongside the bridge in a manner that would affect the ability to appreciate, understand or experience of its function, design or historic context.
- 5.10.55 As such, the contribution of setting to the significance of the Avenue Bridge would remain unchanged. The relationship between the bridge, the Lugar Water and the wider designed landscape would remain readily appreciable, and the asset would continue to be understood as an important component of the eighteenth-century estate design.
- 5.10.56 Given the high heritage significance of the bridge and the neutral magnitude of impact arising from limited and peripheral turbine visibility, the resulting effect is assessed as **Nil**. This is considered **not significant** in EIA terms.

The Temple, Dumfries House (LB96)

- 5.10.57 The Temple comprises the intended gatehouse for the Dumfries House estate (**GDL00149**) and was designed as the northern entrance to the designed landscape. Constructed circa 1760, probably to designs by John Adam, the building originally comprised a central arched entrance flanked by accommodation, screening walls and enclosed yards. The structure formed part of the wider programme of estate improvement associated with the construction of Dumfries House (**LB14413**) and was intended to act as the northern terminus of the principal approach to the house. Subsequent alterations, including the construction of dwellings in the nineteenth century, adaptations during military occupation in the twentieth century, the dismantling of the central arch in the 1960s and extensive restoration works during the 2010s, illustrate the evolving use and management of the estate over time.
- 5.10.58 The asset is of high cultural significance as a Category A Listed Building, deriving its cultural significance principally from its architectural quality, historic interest and group value. It is an outstanding example of Gothic Revival estate architecture and has strong associations with John Adam and the Earls of Dumfries. The recent restoration works have ensured the retention of its architectural character and authenticity while allowing its original function and relationship with the wider estate to remain legible.
- 5.10.59 The setting of The Temple is defined by its relationship with the northern part of the Dumfries House estate and the designed routes which converge upon it. The building is orientated southwards towards Dumfries House (**LB14413**), reflecting its intended role as the gateway to the estate. Although the proposed main driveway extending north-eastwards towards Auchinleck was never completed due to a disagreement with the neighbouring landowner, the intended route remains understandable through the orientation of the structure and the surviving avenue alignments. The approach from the north-east appears to represent the principal



designed route of arrival and provides the key opportunity to appreciate the building's architecture and landmark role within the estate.

- 5.10.60 The asset also derives cultural significance from its functional and symbolic role as an entrance structure. As a gatehouse, it would have been intended to control access to the estate while simultaneously projecting status and architectural refinement. Although the intended approach was never fully realised, the restoration of the north-eastern avenue and the creation of the Duchess of Rothesay Avenue to the south-west provide an appreciation of the intended movement through the landscape and reinforce an understanding of the building's historic role within the designed estate.



Photograph 13: View from LB96 along Duchess of Rothesay Avenue to the southwest

- 5.10.61 The south-facing orientation of The Temple indicates that views southwards towards Dumfries House were intended to form an important element of its setting, as well as opposing views when departing the estate. However, this designed relationship can no longer be fully appreciated, as views towards the house are obscured by farm buildings associated with the Pierburg Education Farm and woodland planting along the Lugar Water corridor. While the orientation of the structure still allows the intended connection to be understood, direct intervisibility between the two assets has been lost. By contrast, the tree-lined Duchess of Rothesay Avenue (**Photograph 13**) provides an important view south-westwards through the estate and towards the surrounding rural landscape. Although this



avenue is a modern addition, it provides an approximation of the intended historic approach and contributes positively to understanding, appreciating and experiencing the gatehouse within its wider estate context.

- 5.10.62 The nearest proposed turbine would be located well beyond the immediate setting of the asset. ZTV analysis indicates that up to 12 turbines may be theoretically visible to the east of the Listed Building. The turbines would therefore not be visible directly along the principal south-west-facing axis of the avenue, which represents one of the most important designed views associated with the asset, seen in **Figure 5.10c CH VP5**. Visibility would instead be confined largely to oblique views across the Lugar Valley to the south and east, as seen in **Figure 5.10a CH VP5**.
- 5.10.63 From the northern side of the building, turbine visibility would be limited, with much of the development screened by the building itself. From the southern side of the asset, the turbines would be more readily visible above the skyline to the east and in a bare-earth scenario would form a noticeable modern element within the wider landscape. However, the bare earth model does not consider screening from intervening vegetation and topography including Dumfries House itself and other key estate buildings.. Consequently, the turbines would not affect the understanding of the historic relationship between The Temple and the core of the designed landscape, which comprises Dumfries House itself.
- 5.10.64 The key aspects of setting that contribute to the significance of the asset, namely its role as a gatehouse, its relationship with the surviving avenue alignments, its architectural prominence within the northern part of the estate, and its contribution to understanding the intended organisation of the designed landscape, would remain clearly legible and appreciable. While the Proposed Development would introduce modern elements into part of the wider landscape setting, these would not materially alter the architectural, historic or functional relationships that underpin the significance of the asset.
- 5.10.65 Given the high heritage significance of The Temple and the neutral magnitude of change arising from limited visibility of turbines within parts of the wider setting, the resulting effect is assessed as **Nil**. The Proposed Development would not materially diminish the ability to understand, appreciate or experience the significance of The Temple or its role within the Dumfries House estate. The effect is therefore considered **not significant** in EIA terms.

Sorn Castle (LB14273)

- 5.10.66 Sorn Castle, comprised of a Category A-Listed Building, occupies a prominent and historically strategic location within the River Ayr valley, immediately adjacent to the village of Sorn in East Ayrshire, which lies 0.2km to the southeast. Originating as a fortified tower, probably dating from the late 14th or 15th century, with the south-west portion of the present structure representing the earliest surviving fabric. Subsequent expansion in the 16th century created a larger fortified residence, including the addition of a great hall, while ornamental corbelling, bartizans, and a parapeted roofline. The building was significantly enlarged in the late eighteenth century through the addition of castellated elements, reflecting the growing fashion for picturesque and romantic interpretations of Scotland's medieval past. However, much of its present appearance derives from the major remodelling undertaken by the eminent Scottish architect David Bryce in the 1860s. Bryce transformed the castle into a distinguished Scots Baronial mansion, incorporating crow-stepped gables, turrets, battlements, varied rooflines, and asymmetrical massing, while retaining and celebrating the earlier medieval fabric. Further additions and internal remodelling by H. E. Clifford in the early twentieth century enhanced the



- composition of the castle without diminishing its historic character. It is considered to be an asset of high cultural significance.
- 5.10.67 The castle is positioned on the crest of a cliff above the River Ayr, a location originally selected for defensive purposes, but which now contributes significantly to its aesthetic, experiential and historical significance. The elevated position allows the castle to dominate the surrounding landscape and reinforces its legibility as a fortified structure within the valley.
- 5.10.68 The cultural significance of Sorn Castle derives from its architectural, historic and aesthetic interest, together with its longstanding association with the surrounding landscape. The survival and legibility of its medieval, eighteenth-century and Victorian phases of construction contribute significantly to an understanding of Sorn Castle's historical development, demonstrating changing architectural fashions, residential requirements, and expressions of status over several centuries
- 5.10.69 The River Ayr forms the principal landscape component of the castle's setting. Flowing immediately below the cliff to the southeast, it creates a strong natural boundary and foreground feature that emphasises the elevated position of the castle. The easily defensible cliff-top location above the River Ayr forms a key component of its setting and contributes substantially to an understanding and appreciation of the asset's strategic origins and subsequent development. The contrast between the contained, wooded river corridor and the raised promontory occupied by the castle enhances its visual prominence and contributes to an appreciation of its defensive function. The valley at this location is relatively narrow and enclosed, characterised by steep valley sides and mature woodland, creating a strong sense of place focused upon the river corridor.
- 5.10.70 Beyond the immediate gorge, the surrounding landscape comprises rolling agricultural land dissected by the River Ayr valley, which run from southeast to northwest, before turning southwest at Sorn village. This topography allows the castle to command extensive views across the surrounding countryside whilst also enabling views towards the asset from neighbouring valley sides, transport routes and approaches into Sorn. Historically, these views would have facilitated surveillance and control of the surrounding area; today they contribute to its scenic quality and visual dominance within the landscape.
- 5.10.71 Vegetation plays an important role in shaping the setting of the castle. Mature woodland and riparian planting along the valley sides filter and frame views when approaching the asset from the north, creating a sequence of partial and intermittent glimpses of the castle rather than continuous visibility. Trees within the grounds and surrounding landscape soften the relationship between the built form and adjacent farmland, while reinforcing the character of the asset as a country house that evolved from a medieval defensive stronghold. Woodland contributes to a sense of enclosure around the asset's designed landscape.





Photograph 14: View from dining room to the southeast



Photograph 15: View from bar room to the southeast along River Ayr





Photograph 16: View from grounds directly southeast of Sorn Castle to southwest along River Ayr

- 5.10.72 The asset's relationship to the village of Sorn forms an important component of the immediate setting. Located at c.220m aOD on the banks of the River Ayr, the settlement no longer has direct visibility of the castle, due to the mature woodland, but prior to these plantations the castle would have formed a dominant historic landmark within the locality. Views from bridges, roads and routes through the village from the southeast frame the castle above the river and tree canopy, contributing to its picturesque and landmark qualities.
- 5.10.73 The wider setting is predominantly rural and pastoral in character, comprising farmland divided by hedgerows, woodland blocks and estate planting. This relatively undeveloped landscape context contributes positively to the appreciation of the castle's historic character and architectural form. The absence of substantial modern development within the immediate valley enables the asset to retain its visual prominence and historic legibility within the landscape.
- 5.10.74 Views to the south are substantially screened by mature designed woodland associated with the estate, creating an enclosed sense of place and limiting the influence of the wider landscape in this direction, as seen in **Photograph 14**. Consequently, appreciation of the castle remains focused on views from the River Ayr valley, the immediate cliff-top setting and the relationship between the castle, woodland and settlement.



- 5.10.75 The ZTV (**Figure 5.2**) indicates that up to six turbines would be visible from the vicinity of the castle, principally within views towards the southeast. Due to the screening effect of mature woodland and the enclosed character of the valley, turbine visibility would be confined to a limited sector of the wider landscape and would not affect the principal views that contribute most strongly to the significance of the asset. The proposed turbines would not appear within the key framed views from the northern approach, with Sorn Castle itself screening the Proposed Development from views towards the south and southeast. There would also be no visibility of the Proposed Development from the castle along the valley of the River Ayr to the southwest. Though turbines would be present in views from the castle to the southeast, visibility would be focused above key intended views in this direction towards Sorn village and the valley of the River Ayr, which would be focused downwards along the watercourse. As such, any visibility of the turbines would appear in the backdrop of views to the southeast, and would not alter the relationship between the castle, the River Ayr and the steep valley sides, forming a minor distraction at most to the ability to appreciate, understand and experience this aspect of the asset's setting.
- 5.10.76 Whilst the Proposed Development would introduce modern infrastructure into part of the wider setting, these would be experienced at considerable distance and would not cause a distraction from the key characteristics that contribute to the significance of Sorn Castle, as seen in **Figures 5.13a-f**. The asset would continue to be understood and appreciated as a dominant historic landmark occupying a strategically important cliff-top position above the River Ayr. Its visual prominence, defensive character, relationship with the village of Sorn and strong association with the surrounding valley landscape would remain readily appreciable.
- 5.10.77 As such there would be a low adverse magnitude of impact on an asset of high heritage significance. Due to limited visibility of turbines within the wider setting, the key attributes that contribute to an understanding and appreciation of Sorn Castle would remain largely unchanged and the resulting effect is therefore assessed as **Minor**. The Proposed Development would not materially diminish the ability to understand, appreciate or experience the architectural, historic, aesthetic or landscape significance of Sorn Castle. The significance of effect is therefore considered **not significant** in EIA terms.

5.11 Additional Mitigation and Enhancement

Construction

- 5.11.1 Where direct impacts on heritage assets have not been able to be avoided by design, further mitigation is suggested. These suggestions are in line with NPF4 Policy 7 and East Ayrshire Council Local Development Plan 2: Policy HE3. With reference to the identified construction impacts highlighted in **Table 5-8**, **Table 5-10** outlines the proposed mitigation for the assets that have potential for direct physical impacts as a result of the construction phase of the Proposed Development. A full assessment of potential construction impacts as a result of the AIL over-run areas and the indicative grid connection corridor, as well as any required mitigation, will be assessed in full as part of a future planning application. All proposed mitigation would be subject to approval by WoSAS with the scope and methodology outlined in a Written Scheme of Investigation (WSI).



Table 5-10: Proposed Mitigation for Potential Construction Impacts

Asset	Infrastructure	Proposed Mitigation
Primary Site		
Aerial Ropeway (SLR71)	Track	No mitigation proposed as asset has been removed by modern mining activity and no subsurface remains are anticipated to be present within development footprint.
Race Course (SLR2)	Track, Hardstanding, T5	Limited watching brief to determine the fabric of the asset and to inform how it was constructed.
Mineral Railway (SLR303)	Track, Compounds	Watching brief to record the fabric of any remaining elements of the railway which may be able to inform how it was constructed
Building; Lime Kilns; Railway; Coal Mine (SLR7)	Hardstanding, T7	None required due to the anticipated level of disturbance from mining activity.
Unknown remains	Infrastructure in areas unaffected by modern mining activity	Working protocol to be implemented should unrecorded archaeological features be discovered.

Operation

- 5.11.2 Embedded mitigation measures are outlined in **Chapter 3: Design Evolution and Alternatives** and those related to Cultural Heritage are summarised in **Section 5.7**. No further mitigation measures are proposed for potential Operational Impacts on Cultural Heritage Assets.

Enhancement

- 5.11.3 It is proposed that a heritage trail, as well as relevant heritage interpretation boards, be developed in conjunction with the outdoor access management plan at the Proposed Development to enable recreational visitors to understand and gain an appreciation of the history of the Site²³

5.12 Residual Effects

Construction

- 5.12.1 A summary of the residual effects of the Proposed Development, following implementation of the mitigation measures detailed above (**Table 5-10**) is presented in **Table 5-15** below.
- 5.12.2 Adverse direct impacts on archaeological remains would be offset to some degree by the positive effect that archaeological recording would have in respect to our understanding of the archaeological record, which will be of wider benefit to the archaeological and local community. Whilst the proposed mitigation would be a benefit of the Proposed Development, it would not offset the impact caused by the

²³ Mann, B. (2023) Delivery of Public Benefit and Social Value Guidance for Archaeology in the Planning Process. Available at: <https://www.algao.org.uk/news/tue-14022023-0904-delivery-public-benefit-and-social-value-archaeology-planning-process>



removal of assets due to proposed construction works. As such, after the implementation of the proposed mitigation, the residual effect upon the impacted assets would remain the same. As noted previously, all mitigation would be agreed with WoSAS and set out in an approved WSI.

Operation

- 5.12.3 Residual operational impacts are summarised in **Table 5-15**.
- 5.12.4 The residual effects during operation are the same as assessed in **Section 5.10**. All impacts to the setting of heritage assets during the operational phase of the Proposed Development are long-term but reversible upon decommissioning.

Public Benefit

- 5.12.5 The proposed heritage trail and signage boards would be of benefit as they would further the understanding of the local community regarding the heritage of the area. However, any impacts caused by the Proposed Development would not be offset by these enhancement proposals. As such, they would cause no change to the impacts outlined within this Chapter.

5.13 Cumulative Assessment

- 5.13.1 There are no anticipated cumulative effects resulting from construction impacts from the Proposed Development. As such, the following assessment is based on the potential for cumulative effects on the setting of cultural heritage assets arising from the operational stage of the Proposed Development.
- 5.13.2 Cumulative effects have been assessed in line with the guidance provided in the EIA Handbook²⁴. A cumulative effect is considered to occur when there is a combination of:
- An impact on an asset or group of assets due to changes resulting from the Proposed Development; and
 - An impact on the same asset or group of assets resulting from other wind farm developments (consented, under construction, or in application, but not operational) within the surrounding landscape.

Table 5-11: Developments considered for Cumulative Assessment on Cultural Heritage Assets

Wind Farm Development	Status	Number of Turbines
Appin	Planning	9
Bankend Rig II	Consented	3
Bankend Rig III	Consented	10
Bodinglee	Planning	37
Breezy Hill	Planning	20
Cloud Hill	Consented	11
Enoch Hill 2	Consented	2
Euchanhead	Planning	19

²⁴ Scottish Natural Heritage and HES (2018), EIA Handbook, Box AP1.Info.2, Page 183



Wind Farm Development	Status	Number of Turbines
Glen Water	Planning	6
Glenmuckloch ²⁵	Planning	8
Greenburn ²⁶	Planning	14
Hagshaw Western Expansion	Planning	18
Hare Craig	Consented	8
Hare Hill Repowering	Planning	23
Hawkwood	Planning	5
Herds Hill	Planning	3
Kennoxhead Extension	Consented	8
Knockkippen	Consented	12
Lethans	Consented	27
Lethans Extension	Consented	10
Lorg	Consented	10
Low Drumclog	Consented	3
Mill Rig	Consented	6
Mossmulloch	Planning	4
Over Hill	Consented	11
Kennoxhead Extension II	Consented	8
Pencloe Extension	Planning	5
Rowancraig	Planning	6
Sandy Knowe Extension	Consented	6
Sanquhar II	Consented	50
South Kyle 2	Planning	11
The Drum	Planning	8
Windy Standard 1 Repower	Consented	8
Windy Standard III	Consented	20

Kyle Castle (SM3311)

- 5.13.3 The asset and its setting, and the potential impact as a result of the Proposed Development is discussed in **Section 5.10**. A photograph from the asset can be found in **Photo 5.1-5.4** and the relevant visualisations can be found in **Figure 5.6 (CH VP1)**. Within 15km of **SM3311**, there are 19 developments considered for cumulative assessment. These developments are outlined in **Table 5-12**.

²⁵ The original application for Glenmuckloch Wind farm is for 8 turbines and has been consented

²⁶ The original application for Greenburn Wind Farm is for 16 turbines and is consented



Table 5-12: Developments Considered for Cumulative Assessment on SM3311

Wind Farm Development	Status	Number of Turbines	Direction from Asset	Distance from Asset
Lethans Wind Farm	Consented	27	Southeast	3.9km
Lethans Extension	Consented	10	Southeast	6.3km
Glenmuckloch	Consented	8	Southeast	6.0km
Sandy Knowe Extension	Consented	6	Southeast	8.7km
Sanquhar II Wind Farm	Consented	44	Southeast	13km
Greenburn Wind Farm	Consented	16	Southwest	9.2km
Enoch Hill 2	Consented	2	Southwest	14km
Over Hill Wind Farm	Consented	10	Southwest	14km
Kennoxhead Extension II	Consented	8	Northeast	9.2km
Kennoxhead Extension	Consented	8	Northeast	10km
Hare Craig	Consented	3	Northeast	14km
Bankend Rig II	Consented	3	Northeast	14km
Bankend Rig III	Consented	11	Northeast	14km
Drum	Application	8	Northwest	2.2km
Glen Water	Application	6	Southwest	1.6km
Pencloe Extension	Application	5	Southwest	12km
Hare Hill Repowering	Application	23	South	8.7km
Herds Hill	Application	3	Southeast	13km
Euchanhead	Application	19	Southeast	13km
Rowancraig	Application	7	Southeast	14km

5.13.4 In a bare earth scenario, of the developments outlined in **Table 5-** the following are visible from Kyle Castle:

- To the northwest: eight hubs of The Drum (**Figure 5.6a CH VP1**)
- To the northeast: five turbines tips of Kennoxhead Extension II and two turbine tips of Lethans Extension are visible in distant **Figure 5.6b CH VP1**)
- To the south and southwest: six hubs of Glen Water (**Figure 5.6d CH VP1**)
- To the southeast two hubs and eight tips of Lethans Extension, 24 tips of Lethans, five tips of Glenmuckloch and two hubs and seven tips of Hare Hill Repowering (**Figure 5.6c CH VP1**).

5.13.5 All other developments in the study area are screened by intervening topography.

5.13.6 The outlined developments would primarily be visible in views from the asset towards the east and southeast, appearing in the backdrop of views along the Glenmuir Water to the northeast and the Guelt Water to the southeast (**Figure 5.6c CH VP1**). As outlined in **Section 5.10**, the asset is strategically positioned to monitor



- and control access along the watercourses and their valleys, and this defensive position forms the primary aspect of its setting that contributes to its significance.
- 5.13.7 The Drum and Glen Water are visible in views over the Glenmuir Water to the northwest (**Figure 5.6a CH VP1**). Though the developments would be visible in views from the asset when looking northwest over the confluence of the watercourses and the valley of the Glenmuir Water, they would appear in peripheral views rather than in the backdrop of views in this direction, retaining the ability to appreciate, understand and experience the relationship between the asset and Glenmuir Water and its valley.
- 5.13.8 The turbines of Kennoxhead Extension II, Lethans Extension, Lethans and Glenmuckloch Wind Farms would be present in views along Guelt Water to the southeast, but, as shown in **Figures 5.6b-c**, they would not backdrop the watercourse and instead would be peripheral in views. The turbines have the potential to cause a minor distraction in views to the southeast, as a modern industrial addition to a largely rural landscape, however, given that turbines would only be visible in long distance peripheral views it would not be to such an extent that would impact the ability to appreciate, understand and experience the relationship between the asset and the watercourses.
- 5.13.9 Collectively, the outlined developments therefore have the potential to introduce a substantial degree of modern intrusion into the currently undeveloped setting of the asset within the surrounding landscape and across multiple directions of view.
- 5.13.10 The addition of the turbines of the Proposed Development in views to the northwest along the Glenmuir Water, would be viewed as a visually coherent extension of the visible turbines of The Drum (**Figure 5.6a CH VP1**). Whilst the addition of the proposed development would result in a perceptible change in the asset's setting, the Proposed Development would be a relatively minimal change to the cumulative change resulting from the developments outlined. The visual coherence of the Proposed Development with The Drum would ensure that the cumulative impact is no greater than that of the Proposed Development in isolation. As such, no increase to the assessed magnitude of impact is anticipated that what has been assessed for the Proposed Development in isolation. As such the setting of **SM3311** would not experience change from the Proposed Development to the point that it would increase the overall significance of effect beyond what is assessed in **Section 5.10**.
- 5.13.11 The magnitude of impact would remain low adverse which would result in a **Minor** significance of effect as outlined in **Section 5.10**. This is considered **not significant** in EIA terms.

Cairn Tables, two cairns (SM4631)

- 5.13.12 The asset and its setting, and the potential impact as a result of the Proposed Development is discussed in **Section 5.10**. A photograph from the asset can be found in **Photo 5.4-5.5** and the relevant visualisations can be found in **Figure 5.7 (CH VP2)**.
- 5.13.13 Within 15km of **SM4631**, there are a total of 17 developments considered for cumulative assessment. These developments are outlined in **Table 5-13**.



Table 5-13: Developments considered for Cumulative Assessment on SM4631

Wind Farm Development	Status	Number of Turbines	Direction from Asset	Distance from Asset
Kennoxhead Extension	Consented	8	Southeast / Northeast	2.2km / 4.4km
Kennoxhead Extension II	Consented	8	Southeast	2.4km
Lethans Extension	Consented	10	South	5.4km
Lethans Wind Farm	Consented	27	Southwest	6.7km
Glenmuckloch Wind Farm	Consented	8	Southwest	7.7km
Sandy Knowe Extension	Consented	6	Southwest	13km
Hare Craig Wind Farm	Consented	8	Northeast	6.5km
Bankend Rig III	Consented	10	Northwest	9.3km
Bankend II	Consented	3	Northwest	12km
Mill Rig	Consented	6	Northwest	14km
The Drum Wind Farm	Application	8	Southwest	8.4km
Glen Water Wind Farm	Application	6	Southwest	11km
Bodinglee Wind Farm	Application	35	Northeast	11km
Hagshaw Western Expansion	Application	18	Northwest	10km
Hawkwood Wind Farm	Application	5	Northwest	14km
Hare Hill Repowering	Application	26	Southwest	15km

5.13.14 In a bare earth scenario, of the developments outlined above, the following are visible:

- To the east and southeast, two turbines of Kennoxhead, and all eight turbines of Kennoxhead Extension II (**Figure 5.7c-d CH VP2**).
- To the south and southwest, all turbines of Lethans Extension, Lethans, Glenmuckloch, Sandy Knowe Extension, Glen Water and Hare Hill Repowering, together with four turbines of The Drum (**Figure 5.7d-e**).
- To the northeast, all turbines of Hare Craig, alongside 17 turbines of Bodinglee (**Figure 5.7c**).
- To the west and northwest, all turbines of Bankend Rig II, Bankend Rig III, Mill Rig, Hagshaw Western Expansion and Hawkwood (**Figure 5.7a-b**).

5.13.15 When considered cumulatively, the cairns would be affected by the presence of modern development across all directions, as seen in **Figures 5.7a-e**. As long-distance views in all direction contribute to the setting as the asset, as outlined in **Section 5.10**, this has the potential to cause a cumulative impact on the setting of the cairns. However, the principal contributing views from the asset northwards towards the Ayr River valley would remain largely unchanged (**Figure 5.7c**), and the prominence of the asset within the landscape on approaches through the surrounding valleys, as outlined in **Section 5.10**, would be maintained. As such, the key aspects of setting that contribute to an understanding and appreciation of the



asset's significance would continue to be appreciable despite the presence of additional wind energy development within the wider landscape context.

- 5.13.16 The addition of the turbines of the Proposed Development within westward views towards Cairn Hill and Wardlaw Hill, which form a minimal contribution to the setting of the asset, would be experienced in combination with the consented Drum Wind Farm. The Proposed Development would appear as a logical and visually coherent extension to the existing concentration of turbines, thereby reinforcing an established pattern of wind energy development rather than introducing a separate or competing focus within the view.
- 5.13.17 As such, the cumulative influence of the Proposed Development on the setting of **SM4631** would not materially differ from that identified for the Proposed Development in isolation and would not alter the conclusions presented in **Section 5.10**. The magnitude of impact would remain low adverse which would result in a **Minor** significance of effect, as outlined in **Section 5.10**. This is considered **not significant** in EIA terms.

Sorn Castle

- 5.13.18 The asset and its setting, and the potential impact as a result of the Proposed Development is discussed in **Section 5.10**. A visualisation from the asset can be found in **Figure 5.13**.
- 5.13.19 There are nine developments within 15km of **LB14273** that have been considered for cumulative assessment. These developments are outlined in **Table 5-14**.

Table 5-14: Development considered for Cumulative Assessment on LB14273

Wind Farm Development	Status	Number of Turbines	Direction from Asset	Distance from Asset
Bankend Rig II	Consented	3	Northeast	11km
Bankend Rig III	Consented	10	Northeast	13km
Breezy Hill	Planning	20	Southwest	15km
Glen Water	Planning	6	Southeast	12km
Greenburn	Consented	16	South	11km
Hagshaw Western Expansion	Planning	18	Northeast	15km
Mill Rig	Consented	6	Northeast	11km
Over Hill	Consented	11	Southwest	14km
The Drum	Planning	8	Southeast	9.9km

- 5.13.20 In a bare-earth scenario, visibility of the developments outlined above is primarily focused to the southeast, where six hubs and one turbine tip of The Drum is visible (**Figure 5.13a CH VP8**) and the southwest, where nine hubs and 10 turbines tips of Breezy Hill are visible (**Figure 5.13b CH VP8**). The remain developments within the study area are screened by intervening geography.
- 5.13.21 The visible turbines of The Drum would therefore be present in the backdrop of views along the River Ayr and its valley, as well as toward Sorn village, with Breezy Hill appearing in similar long-distance views along the valley to the southwest. These views contribute to the defensive aspects of the asset's setting and to its



significance as a defensive asset, as outlined in **Section 5.10**. Given the limited visibility of the developments, their distance from the castle, and the intervening vegetation, which forms part of the Sorn Castle Estate and therefore also contributes to its setting, the introduction of turbines in these views would form a minor distraction at most to the ability to appreciate, experience and understand Sorn Castle and its setting.

- 5.13.22 The Proposed Development would be visible to the southeast, where in a bare-earth scenario, it would be viewed in conjunction with the consented Drum Wind Farm. In cumulative views, the Proposed Development would be perceived as a continuation of this cluster rather than as a distinct new modern intrusion, thereby limiting the extent to which it would alter the setting of Sorn Castle. Consequently, the cumulative scenario would not materially change the conclusions reached for the Proposed Development in isolation, as set out in **Section 5.10**.
- 5.13.23 The cumulative magnitude of impact is therefore assessed as low adverse, giving rise to a **Minor** adverse significance of effect. This level of effect is considered **not significant** in EIA terms.

5.14 Summary and Statement of Significance

- 5.14.1 This assessment has considered information derived from desk-based assessment, consultation responses, field survey, ZTV analysis and detailed appraisal of heritage assets in order to identify archaeological remains and cultural heritage assets that may be affected by the Proposed Development. The assessment has considered the potential direct, indirect, setting and cumulative effects of the Proposed Development, together with appropriate mitigation measures and the resulting residual effects. Potential impacts associated with the AIL over-run areas and indicative grid connection corridor, both in isolation and in combination with the proposed development, are considered separately within **Technical Appendix 5.3** and **Technical Appendix 5.4**.
- 5.14.2 The assessment has considered the potential for direct and indirect physical impacts on known and unknown archaeological remains within the Site, in addition to impacts on the settings of designated heritage assets. Detailed setting assessments were undertaken for Kyle Castle (**SM3311**), Cairn Tables (**SM4631**), Dumfries House Inventory Garden and Designed Landscape (**GDL00149**), Dumfries House (**LB14413**), Dovecote at Dumfries House (**LB14416**), Avenue Bridge (**LB14414**), The Temple (**LB96**) and Sorn Castle (**LB14273**).
- 5.14.3 Mitigation through design has been embedded throughout the evolution of the Proposed Development, with turbine layout design seeking to avoid direct setting impacts on Kyle Castle (**SM3311**). Mitigation of direct impacts has been identified where appropriate, including archaeological mitigation secured through a Written Scheme of Investigation, should this be necessary for assets impacted by the proposed AIL over-run areas, and a protocol for unexpected archaeological discoveries during construction.
- 5.14.4 With regard to construction effects, no significant direct impacts on known heritage assets have been identified within the primary Site. Potential impacts on known and unknown archaeological remains within the AIL over-run areas and indicative grid connection corridor have been identified; however, these impacts and any mitigation required as a result will be assessed in full detail as part of a separate application.
- 5.14.5 With regard to operational effects, the assessment identified a minor significance of effect on the setting of Kyle Castle (**SM3311**), Cairn Tables (**SM4631**) and Sorn Castle (**LB14273**). This is considered **not significant** in EIA terms.



- 5.14.6 A nil significance of effect has been identified for Dumfries House Inventory Garden and Designed Landscape (**GDL00149**), Dumfries House (**LB14413**), The Temple (**LB96**), the Dovecote (**LB14416**) and Avenue Bridge (**LB14414**). In all cases, the key aspects of setting that contribute to the understanding, appreciation and experience of these assets would remain unimpacted and the resulting effects are considered **not significant** in EIA terms.
- 5.14.7 The cumulative assessment considered the Proposed Development in combination with other consented and in application wind energy developments within the surrounding landscape. Whilst cumulative development has the potential to increase the influence of modern wind energy infrastructure within the wider settings of assessed assets, the Proposed Development would generally be experienced as a coherent extension to existing or proposed turbine groupings. Consequently, the significance of effect identified for the Proposed Development in isolation would not increase for any assessed asset. All cumulative effects are therefore considered **not significant** in EIA terms.
- 5.14.8 Overall, the assessment has identified no significant residual effects on archaeology and cultural heritage during construction, operation or cumulatively. The Proposed Development is therefore considered to be compliant relevant legislation, policy and guidance, including NPF4, HEPS and the cultural heritage policies of East Ayrshire Council in relation to the protection of archaeological remains and the cultural significance of heritage assets.



Table 5-15: Summary of Significance of Effects

Description of Effect	Mitigation/Enhancement Measure(s)	Significance of Residual Effect	
		Level and Significance	Beneficial/ Adverse
During Construction & Decommissioning			
Direct physical impacts on the post-medieval racecourse (SLR2) during construction.	Archaeological watching brief.	Minor (Not Significant)	Adverse
Direct physical impacts on remains associated with Gass Water Lime Works (SLR7) during construction.	No mitigation proposed due to the anticipated level of disturbance from mining activity.	Nil (Not Significant)	Adverse
Direct physical impacts on remains of the aerial ropeway (SLR71) during construction.	No mitigation proposed as surviving remains have largely been removed by modern mining activity and no direct impacts are anticipated.	Nil (Not Significant)	Adverse
Direct physical impacts on dismantled mineral railway (SLR303) during construction.	Archaeological watching brief.	Minor (Not Significant)	Adverse
Direct physical impacts on Blackfauld Farm (SLR152) within the AIL over-run area.	Full impact assessment and mitigation recommendations to be carried out as part of future application	Minor (Not Significant)	Adverse
Direct physical impacts on the unrecorded building (SLR305) within the AIL over-run area.	Full impact assessment and mitigation recommendations to be carried out as part of future application	Minor (Not Significant)	Adverse
Direct physical impacts on previously unrecorded archaeological remains within the Site.	Full impact assessment and mitigation recommendations to be carried out as part of future application	Negligible (Not Significant)	Adverse
Direct physical impacts on previously unrecorded archaeological remains within the AIL over-run areas.	Full impact assessment and mitigation recommendations to be carried out as part of future application	Minor (Not Significant)	Adverse



Description of Effect	Mitigation/Enhancement Measure(s)	Significance of Residual Effect	
		Level and Significance	Beneficial/ Adverse
Direct physical impacts on known and unknown archaeological remains within the indicative Grid Connection Corridor.	Full impact assessment and mitigation recommendations to be carried out as part of future application	Moderate to Minor (Not Significant)	Adverse
During Operation			
Effects on the setting of Kyle Castle (SM3311).	N/A	Minor (Not Significant)	Adverse
Effects on the setting of Cairn Tables, two cairns (SM4631)	N/A	Minor (Not Significant)	Adverse
Effects on the setting of Dumfries House Inventory Garden and Designed Landscape (GDL00149)	N/A	Nil (Not Significant)	Adverse
Effects on the setting of Dumfries House (LB14413)	N/A	Nil (Not Significant)	Adverse
Effects on the setting of Dovecote, Dumfries House (LB14416)	N/A	Nil (Not Significant)	Adverse
Effects on the setting of Avenue Bridge, Dumfries House (LB14414)	N/A	Nil (Not Significant)	Adverse
Effects on the setting of The Temple, Dumfries House (LB96)	N/A	Nil (Not Significant)	Adverse
Effects on the setting of Sorn Castle (LB14273)	N/A	Minor (Not Significant)	Adverse
Cumulative Effects			
Cumulative effects on the setting of Kyle Castle (SM3311).	N/A	Minor (Not Significant)	Adverse
Cumulative effects on the setting of Cairn Tables, two cairns (SM4631)	N/A	Minor (Not Significant)	Adverse



Description of Effect	Mitigation/Enhancement Measure(s)	Significance of Residual Effect	
		Level and Significance	Beneficial/ Adverse
Cumulative effects on the setting of Sorn Castle (LB14273)	N/A	Minor (Not Significant)	Adverse



5.15 References

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