atmos CONSULTING

36405 R2

Environmental Impact Assessment

Sandy Knowe Wind Farm Extension

Chapter 10: Cultural Heritage

ERG UK Holding Ltd

ERG

July 2022

Chapter Contents

Chapter Contents

Tables

Figures

Chapter Contents

List of Technical Appendices

Glossary of Terms

Term	Definition
The Applicant	ERG UK Holding Limited
The Agent	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development
Environmental Impact Assessment Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
The Proposed Development	The Sandy Knowe Wind Farm Extension
The Proposed Development Footprint	The area within which the Proposed Development will be located
The Proposed Development Site	The full application boundary including Sandy Knowe Wind Farm and Sandy Knowe Wind Farm Extension

List of Abbreviations

Abbreviation	Description
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ECU	Energy Consents Unit
HEPS	Historic Environment Policy for Scotland
HES	Historic Environment Scotland
NRHE	National Record of the Historic Environment
HER	Historic Environment Record
DGHER	Dumfries and Galloway Historic Environment Record
NSA	New Statistical Account of Scotland
OS	Ordnance Survey
NCAP	National Collection of Aerial Photography

10 Cultural Heritage

10.1 Introduction

This chapter provides an assessment of the potential effects of the Proposed Development on cultural heritage and archaeology which could arise as a result of its construction, operation and decommissioning. The effects associated with the construction phase of the Proposed Development on cultural heritage and archaeology can be considered to be representative of reasonable worst-case decommissioning effects, therefore a separate assessment of the decommissioning phase has not been undertaken as part of this assessment.

The specific objectives of the Chapter are to:

- Describe the cultural heritage and archaeology baseline;
- Describe the assessment methodology used;
- Describe the potential effects, including construction, operational and cumulative effects;
- Describe the mitigation measures proposed to address likely significant effects; and
- Assess the residual effects remaining following the implementation of mitigation.

This Chapter has been produced by AOC Archaeology Group which is a Registered Organisation of the Chartered Institute to Archaeologists (CIfA). The assessment has been carried out by Anne-Aymonne Marot and overseen by Victoria Oleksy. Victoria Oleksy is an Associate Director with over 17 years of experience specialising in EIAs, Archaeological Impact Assessment and Conservation Management Plans and has appeared as an expert witness for planning appeals and called-in planning applications. Anne-Aymonne Marot is a Consultancy Project Supervisor with seven years of archaeological experience including working on EIAs, heritage impact assessments, desk-based assessment and walkover survey projects.

This assessment has been carried out in accordance with the standards of professional conduct outlined in the CIfA Code of Conduct (2014, Updated October 2021), as well as the CIfA Standard and Guidance for Commissioning Work or Providing Consultancy Advice on Archaeology and the Historic Environment (2014, updated 2020), the CIfA Standards and Guidance for Historic Environment Desk Based Assessments (2014, updated 2020), Field Evaluations (2014, updated 2020) and other relevant guidance.

10.2 Methodology and Approach

10.2.1 Legislation, Planning Policy and Guidance

This assessment considers the potential for direct physical effects upon archaeological remains as well as the potential for operational and cumulative setting effects upon designated heritage assets. Where appropriate and if necessary, measures to mitigate or offset such effects are identified, and an assessment of the significance of residual effects, following the implementation of any mitigation, is also made.

The Chapter assesses cumulative effects as arising from the addition of the Proposed Development to other cumulative developments. Operational, under construction,

consented developments and those which are the subject of a valid planning application are considered in the cumulative assessment.

The assessment is based on the Proposed Development as described in Chapter 3: Description of Development (EIAR Volume 1). Overarching policies which pertain to the Proposed Development are detailed in Chapter 4: Planning and Energy Policy. The scope of this assessment has been informed by consultation responses summarised in Table 10-1 and the following legislation, policy and guidance:

Legislation

The statutory framework for cultural heritage in Scotland is outlined in:

- Ancient Monuments and Archaeological Areas Act (1979) as modified by the Historic Environment (Amendment) (Scotland) Act 2011;
- Town and Country Planning (Scotland) Act, as amended in the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997) and as modified by the Historic Environment (Amendment) (Scotland) Act (2011); and
- Historic Environment Scotland Act (2014).

Planning Policy

Planning policy relevant to this Chapter is contained within:

- The National Planning Framework for Scotland (NPF3) (2014);
- Scottish Planning Policy (SPP) (2014);
- Historic Environment Policy for Scotland (HEPS) (2019) and supporting policy and guidance (HES, 2019 b & c); and
- Planning Advice Note 2/2011 (PAN 2) (2011).

SPP expresses the following policy principles:

"*The planning system should:*

- *promote the care and protection of the designated and non-designated historic environment (including individual assets, related settings and the wider cultural landscape) and its contribution to sense of place, cultural identity, social well-being, economic growth, civic participation and lifelong learning; and*
- *enable positive change in the historic environment which is informed by a clear understanding of the importance of the heritage assets affected and ensure their future use. Change should be sensitively managed to avoid or minimise adverse impacts on the fabric and setting of the asset, and ensure that its special characteristics are protected, conserved or enhanced*" (Scottish Government 2014, para 137).

HEPS (HES 2019a) sets out the Scottish Government's policy for decision making that affects the historic environment. It contains six policies for managing the historic environment, all of which favour protection, understanding and promotion of the historic environment as well as the preservation of the benefits of the historic environment for future generations. Historic Environment Policies (HEP) 3 and 4 both state "*if detrimental impact on the historic environment is unavoidable, it should be minimised. Steps should be taken to demonstrate that alternatives have been explored, and mitigation measures should be in place*" (HES 2019a, 9). The following historic environment policies are relevant to this assessment:

- *HEP 1: Decisions affecting any part of the historic environment should be informed by an inclusive understanding of its breadth and cultural significance.*
- *HEP 2: Decisions affecting the historic environment should ensure that its understanding and enjoyment as well as its benefits are secured for present and future generations.*
- *HEP 3: Plans, programmes, policies and strategies, and the allocation of resources should be approached in a way that protects and promotes the historic environment.*

  If detrimental impact on the historic environment is unavoidable, it should be minimised. Steps should be taken to demonstrate that alternatives have been explored and mitigation measures should be put in place.
- *HEP 4: Changes to specific assets and their context should be managed in a way that protects the historic environment. Opportunities for enhancement should be identified where appropriate.*

  If detrimental impact on the historic environment is unavoidable, it should be minimised. Steps should be taken to demonstrate that alternatives have been explored, and mitigation measures should be put in place.

Dumfries and Galloway Council's (DGC) approach to proposals that affect the historic environment is set out in 'Historic Environment' chapter of the Local Development Plan 2 (LDP2) (Dumfries and Galloway Council, 2019). With regards to Listed Buildings, the LDP2 states that:

> *"Development within the setting or vicinity of a listed building should avoid harm to the special interest and character of the listed building and should not compromise its future use through the unacceptable loss of amenity space"* (2019, p.39).

The following policies within the LDP2 are of relevance to this assessment:

- *Policy HE1: Listed Buildings*; and
- *Policy HE3: Archaeology*.

Guidance

The following best practice guidelines/guidance have been used in preparing this assessment:

- Chartered Institute for Archaeologists (CIfA) Code of Conduct (2019 – Updated 2021); Professional Conduct (2021); Standards and Guidance for commissioning work and providing consultancy advice on archaeology and the historic environment (2014- Updated 2020); and Standards and Guidance for historic environment desk-based assessment (2017 – Updated 2020); and
- Environmental Impact Assessment Handbook v5 (SNH & HES, 2018).

10.2.2 Consultation

The assessment process has been informed by consultation with the ECU including the Scoping Opinion (October 2021). A summary of the key consultation responses is described in Table 10-1.

Table 10-1: Summary of Key Consultation Responses

Consultee	Summary of Response	Addressed in the EIA
Scoping Opinion from Historic Environment Scotland dated 26th July 2021	Confirmed that the proposed scope and methodology of the cultural heritage assessment is acceptable.	Settings assessment contained in Section 10.4
	Requested wireframes produced for Kyle Castle, Kemps Castle, Crichton Peel & Sanquhar Castle and Ryehill motte.	Wireframe visualisations have been produced and are included in Figures 10-8 to 10-12 (See Volume 4). They are discussed as appropriate in Section 10.4. Consideration was given to a view point for Kyle Castle but it falls outwith the ZTV and no visibility is expected (see Figure 10-7) and as such no visualisation is included here.
Scoping Opinion from ECU dated October 2021	Request that any additional viewpoints, wireframes, ZTV and photomontages as requested by Historic Environment Scotland and NatureScot are considered in full.	Visualisation have been produced and are included in Figures 10-8 to 10-12 (See Volume 4). They are discussed as appropriate in Section 10.4.
Consultation response from East Ayrshire Council (EAC) dated 20th January 2022	EAC requested that consideration of impacts upon the setting of Blackside Hill Cairn Monument on the summit of Blackside (Auchenlongord) outside Sorn be included in the assessment.	A wireline visualisation from Blackside Hill Cairn has been included at Volume 4: Figure 10-12 and is discussed in Section 10-4
Dumfries and Galloway council	Potential effects on cultural heritage assets to 10km to be assessed Assessment of impact on St Connel's Church Contact is made with the Council's archaeology service to agree on final assets and proposed scope	Settings assessment contained in Section 10.4 Setting assessment of St Connel's Church contained in Section 10.4.12 Request for scope to be approved made as part of the Scoping Report. Request made to the DGC Archaeologist for NRS assets within 10km as part of the HER request. These were included in the assessment.
Dumfries and Galloway Council Archaeologist	A response from the DGC Archaeologist was not received by DGC.	N/A

10.2.3 Assessment Methodology

Method of Baseline Characterisation

Three study areas were identified for this assessment:

- A 1km study area around the Proposed Development Footprint identifying all previously recorded designated and non-designated assets and previous archaeological investigations (events) to allow for assessment of the potential for direct impacts on known heritage assets and to assess the potential for hitherto unknown buried assets to survive on-site and thus potentially be impacted upon (Figure 10-2);

- A 5km study area around the Proposed Development Footprint for assessment of potential impacts on the settings of all designated and regionally significant heritage assets (Figure 10-1); and
- A 10km study area around the Proposed Development Footprint for the assessment of potential impacts on the settings of all designated heritage assets which are considered to be nationally important including Scheduled Monuments; Category A Listed Buildings; Inventoried Gardens and Designed Landscapes, Inventoried Battlefields and World Heritage Sites, and non-designated assets considered to be potentially nationally significant by DGC (Figure 10-1).

Each heritage asset referred to in the text is listed in the Gazetteer in Technical Appendix 10-2. Each has been assigned an 'Asset No.' unique to this assessment, and the Gazetteer includes information regarding the type, period, grid reference, National Record of the Historic Environment (NRHE) number, the Historic Environment (HER) Number, statutory protective designation, and other descriptive information, as derived from the consulted sources.

The following sources were consulted for the collation of data:

- The Dumfries and Galloway HER extract received on 12th January 2022; For Historic Environment Record Data;
- The National Record for the Historic Environment (NRHE) as held by HES; National Record of the Historic Environment designated and non-designated heritage asset data;
- The National Map Library (National Library of Scotland, Causewayside, Edinburgh); For old Ordnance Survey maps (1st and 2nd edition, small and large scale) and pre-Ordnance Survey historical maps;
- National Collection of Aerial Photography (NCAP) For aerial photography;
- University of Cambridge Air Photos (cambridgeairphotos.com) For publicly available aerial photography; and
- Scottish Remote Sensing Portal For publicly available LiDAR data.

An archaeological walkover survey of the Proposed Development Footprint was undertaken in September 2020 and August 2021 with the aim of identifying any previously unknown archaeological remains. All known and accessible heritage assets were assessed in the field to establish their survival, extent, significance, and relationship to other assets. Weather and any other conditions affecting the visibility during the surveys were also recorded. All features were marked on plans, at a relevant scale, and keyed by means of Grid References to the Ordnance Survey mapping.

Criteria for Assessment of Effects

This assessment distinguishes between the terms 'impact' and 'effect'. An impact is defined as a physical change to a heritage asset or its setting, whereas an effect refers to the significance of this impact. The first stage of the assessment involves establishing the significance and importance of the heritage assets and assessing the sensitivity of those assets to change (impact). Using the proposed design for the Proposed Development, an assessment of the impact magnitude is made and a judgement regarding the level and significance of effect is arrived at.

Significance Criteria

The assessment involves establishing the significance and importance of the heritage assets and assessing the sensitivity of those assets to change.

The definition of cultural significance is readily accepted by heritage professionals both in the UK and internationally and was first fully outlined in the Burra Charter, which states in article one that 'cultural significance' or 'cultural heritage value' means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (ICOMOS 2013, Article 1.2). This definition has since been adopted by heritage organisations around the world, including HES. HEPS notes that to have cultural significance an asset must have a particular "*aesthetic, historic, scientific or social value for past, present and future generations*" (HES 2019a). Heritage assets also have value in the sense that they "*contribute to sense of place, cultural identity, social wellbeing, economic growth, civic participation and lifelong learning*" (Scottish Government 2014, 33).

All heritage assets have significance; however, some heritage assets are judged to be more important than others. The level of that importance is, from a cultural resource management perspective, determined by establishing the asset's capacity to contribute to our understanding or appreciation of the past (HES 2019b). In the case of many heritage assets their importance has already been established through the designation (i.e. Scheduling, Listing and Inventory) processes applied by HES.

The rating of importance of heritage assets is first and foremost made in reference to their designation. For non-designated assets importance is assigned based on professional judgement and guided by the criteria presented in Table 10-2, which itself relates to the criteria for designations as set out in HES's Designation Policy and Selection Guidance (HES 2019b) and Scotland's Listed Buildings (HES 2019c).

Table 10-2: Criteria for Establishing Importance of Heritage Assets

Importance	Criteria
Very High	World Heritage Sites (As protected by SPP, 2014); Other designated or non-designated assets with demonstrable Outstanding Universal Value.
High	Scheduled Monuments (as protected by the Ancient Monuments and Archaeological Areas Act 1979 (the "1979 Act"); Category A Listed Buildings (as protected by the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997) (the "1997 Act"); Inventory Gardens and Designed Landscapes (as protected by the 1979 Act, as amended by the Historic Environment (Amendment) (Scotland) Act 2011); Inventory Battlefields (as protected by the 1979 Act, as amended by the 2011 Act); Outstanding examples of some period, style or type; Non-designated assets considered to meet the criteria for the designations as set out above (as protected by SPP, 2014).
Medium	Category B and C Listed Buildings (as protected by the 1997 Act); Conservation Areas (as protected by the 1997 Act); Major or representative examples of some period, style or type; or Non-designated assets considered to meet the criteria for the designations as set out above (as protected by SPP, 2014);
Low	Locally Listed assets; Examples of any period, style or type which contribute to our understanding of the historic environment at the local level.
Negligible	Relatively numerous types of assets;

Importance	Criteria
	Findspots of artefacts that have no definite archaeological remains known in their context. The above non-designated assets are protected by Paragraph 137 of SPP, 2014.

Determining cultural heritage significance can be made with reference to the intrinsic, contextual and associative characteristics of an asset as set out in HEPS (HES 2019a) and its accompanying Designation Policy and Selection Guidance (HES 2019b). HEPS Designation Policy and Selection Guidance (2019b) indicates that the relationship of an asset to its setting or the landscape makes up part of its contextual characteristics.

While SPP does not differentiate between the importance of the asset itself and the importance of the asset's setting, HES's Managing Change Guidance, in defining what factors need to be considered in assessing the impact of a change on the setting of a historic asset or place, states that the magnitude of the proposed change should be considered "*relative to the sensitivity of the setting of an asset*" (HES 2020, 11); thereby making clear that assets vary in their sensitivity to changes in setting and thus have a relative sensitivity.

The EIA Handbook suggests that cultural significance aligns with sensitivity but also states that "*the relationship between value and sensitivity should be clearly articulated in the assessment*" (HES and SNH 2018, 184). It is therefore recognised (ibid) that the importance of an asset is not the same as its sensitivity to changes to its setting. Elements of setting may make a positive, neutral, or negative contribution to the significance of an asset. Thus, in determining the nature and level of effects upon assets and their settings by a development, the contribution that setting makes to an asset's significance and thus its sensitivity to changes to setting needs to be considered.

This approach recognises the importance of preserving the integrity of the setting of an asset in the context of the contribution that setting makes to the understanding, appreciation and experience of a given asset. It recognises that setting is a key characteristic in understanding and appreciating some, but by no means all, assets.

Assets of High or Very High importance do not necessarily have high sensitivity to changes to their settings (e.g. do not necessarily have a high relative sensitivity). An asset's relative sensitivity to alterations to its setting refers to its capacity to retain its ability to contribute to our understanding and appreciation of the asset in the face of changes to its setting. The ability of an asset's setting to contribute to an understanding, appreciation and experience of it and its significance also has a bearing on the sensitivity of that asset to changes to its setting.

While heritage assets of High or Very High importance are likely to be sensitive to direct impacts, not all will have a similar sensitivity to impacts on their setting; this would be true where setting does not appreciably contribute to their significance. HES's guidance on setting makes clear that the level of effect may relate to "*the ability of the setting [of an asset] to absorb new development without eroding its key characteristics*" (2020, 11).

Assets with Very High or High relative sensitivity to settings impacts may be vulnerable to any changes that affect their settings, and even slight changes may erode their key characteristics or the ability of their settings to contribute to the understanding, appreciation and experience of them.

Assets whose relative sensitivity to changes to their setting is lower, may be able to accommodate greater changes to their settings without having key characteristics eroded.

The criteria used for establishing an asset's relative sensitivity to changes to its setting is detailed in Table 10-3. This table has been developed based on AOC's professional judgement and experience in assessing setting impacts. It has been developed with reference to the policy and guidance noted above including SPP (Scottish Government 2014), HEPS (HES 2019a) and its Designation Policy and Selection Guidance (HES 2019b), the EIA Handbook (SNH & HES 2018) and HES's guidance on the setting of heritage assets (HES 2020).

Table 10-3: Criteria for Establishing Relative Sensitivity of a Heritage Asset to Changes to its Setting

Relative Sensitivity	Criteria
Very High	An asset, the setting of which, is critical to an understanding, appreciation, and experience of it should be thought of as having Very High Sensitivity to changes to its setting. This is particularly relevant for assets whose settings, or elements thereof, make an essential direct contribution to their cultural significance (e.g., form part of their Contextual Characteristics (HES, 2019b, Annex 1)).
High	An asset, the setting, of which, makes a major contribution to an understanding, appreciation, and experience of it should be thought of as having High Sensitivity to changes to its setting. This is particularly relevant for assets whose settings, or elements thereof, contribute directly to their cultural significance (e.g., form part of their Contextual Characteristics (HES, 2019b, Annex 1)).
Medium	An asset, the setting of which, makes a moderate contribution to an understanding, appreciation, and experience of it should be thought of as having Medium Sensitivity to changes to its setting. This could be an asset for which setting makes a contribution to significance but whereby its value is derived mainly from its other characteristics (HES 2019b).
Low	An asset, the setting of which, makes some contribution to an understanding, appreciation, and experience of it should generally be thought of as having Low Sensitivity to changes to its setting. This may be an asset whose significance is predominantly derived from its other characteristics.
Negligible	An asset whose setting makes minimal contribution to an understanding, appreciation, and experience of it should generally be thought of as having Negligible Sensitivity to changes to its setting.

The determination of a heritage asset's relative sensitivity to changes to its setting is first and foremost reliant upon the determination of its setting and the key characteristics of setting which contribute to its cultural significance and an understanding and appreciation of that cultural significance.

This aligns with Stage 2 of the HES guidance on setting (2020, 9). The criteria set out in Table 10-3 are intended as a guide. Assessment of individual heritage assets is informed by knowledge of the asset itself; of the asset type if applicable and by site visits to establish the current setting of the assets. This will allow for the use of professional judgement and each asset is assessed on an individual basis.

Magnitude of Impact

Potential impact is the physical change to known heritage assets, and unknown buried archaeological remains, or changes to assets' settings. In the case of the Proposed Development, potential impacts relate to the possibility of disturbing, removing, or destroying in situ remains and artefacts during the construction phase, or the placement of new features within their setting during the operational phase.

The magnitude of the impacts upon heritage assets caused by the Proposed Development is rated using the classifications and criteria outlined in The Table10-4.

Table 10-4: Criteria for Classifying Magnitude of Impact

Impact Magnitude	Criteria
High	Substantial loss of information content resulting from total or large-scale removal of deposits from an asset. Major alteration of an asset's baseline setting, which materially compromises the ability to understand, appreciate and experience the contribution that setting makes to the significance of the asset and erodes the key characteristics (HES 2020) of the setting.
Medium	Loss of information content resulting from material alteration of the baseline conditions by removal of part of an asset. Alteration of an asset's baseline setting that effects the ability to understand, appreciate and experience the contribution that setting makes to the significance of the asset to a degree but whereby the cultural significance of the monument in its current setting remains legible. The key characteristics of the setting (HES 2020) are not eroded.
Low	Detectable impacts leading to minor loss of information content. Alterations to the asset's baseline setting, which do not affect the ability to understand, appreciate and experience the contribution that setting makes to the asset's overall significance.
Negligible	Loss of a small percentage of the area of an asset's peripheral deposits. A reversible alteration to the fabric of the asset. A marginal alteration to the asset's baseline setting.
None	No effect predicted.

Level of Effect

The predicted level of effect on each heritage asset is then determined by considering the asset's importance and/or relative sensitivity in conjunction with the predicted magnitude of the impact. The method of deriving the level of effect is provided in Table 10-5.

Table 10-5: Level of Effect based on Inter-Relationship between the Importance and/or Relative Sensitivity of a Heritage Asset and/or its setting and the Magnitude of Impact

Magnitude of Impact	Importance and/or Sensitivity				
	Negligible	Low	Medium	High	Very High
High	Minor	Moderate	Moderate	Major	Major
Medium	Negligible/Neutral	Minor	Moderate	Moderate	Major
Low	Negligible/Neutral	Negligible/Neutral	Minor	Minor	Moderate
Negligible	Negligible/Neutral	Negligible/Neutral	Negligible/Neutral	Minor	Minor

The level of effect is judged to be the interaction of the asset's importance and/or relative sensitivity (Tables 10-2 and/or 10-3) and the magnitude of the impact (Table 10-4).

In order to provide a level of consistency, the assessment of importance and relative sensitivity, the magnitude of impact and the assessment of level of effect are guided by pre-defined criteria. However, a qualitative descriptive narrative is also provided for each asset to summarise and explain each of the professional value judgements that have been made in establishing importance and/or sensitivity and magnitude of impact for each individual asset.

Using professional judgment and with reference to the Guidelines for Environmental Impact Assessment (as updated) (IEMA 2017), and the EIA Handbook (SNH & HES 2018), the assessment considers moderate and greater effects to be significant (shaded grey in Table 10-5), while minor and lesser effects are considered not significant.

Integrity of Setting

SPP notes that where there is potential for the Proposed Development to have an adverse effect on a Scheduled Monument or on the integrity of its setting, permission should only be granted where there are 'exceptional circumstances' (Scottish Government 2014, para 145). Adverse effects on integrity of setting are judged here to relate to whether a change would seriously adversely affect the asset's key attributes or elements of setting which contribute to an asset's significance to the extent that that the setting of the asset can no longer be understood or appreciated.

In terms of effects upon the setting of heritage assets, it is considered that only those effects identified as 'significant' in the assessment will have the potential to adversely affect integrity of setting. Where no significant effect is found, it is considered that the integrity of an asset's setting will remain intact. This is because for many assets, setting may make a limited contribution to their significance and as such changes would not affect the integrity of their settings. Additionally, as set out in Table 10-4, lower ratings of magnitude of impact relate to changes that would not obscure or erode key characteristics of setting.

Where significant effects are found, a detailed assessment of adverse effects upon integrity of setting is made. Whilst non-significant effects are unlikely to affect integrity of setting, the reverse is not always true. That is, the assessment of an effect as being 'significant' does not necessarily mean that the adverse effect to the asset's setting will harm its integrity.

The assessment of adverse effect upon the integrity of an asset's setting, where required, will be a qualitative one, and will largely depend upon whether the effect predicted would result in a major impediment to the ability to understand or appreciate the heritage asset and therefore reduce its cultural significance.

Criteria for Assessing Cumulative Effects

It is necessary to consider whether the effects of other schemes in conjunction with the Proposed Development would result in an additional cumulative change upon heritage assets, beyond the levels predicted for the Proposed Development alone. The in-combination effect also needs to be considered. However, only those assets which are judged to have the potential to be subject to significant cumulative effects are included in the detailed cumulative assessment provided.

The cumulative assessment has regard to the guidance on cumulative effects upon heritage assets as set out in Environmental Impact Assessment Handbook V5 (SNH & HES 2018) and uses the criteria used in determining effects from the Proposed Development as outlined in Tables 10-2 to 10-4.

In determining the degree to which a cumulative effect may occur as a result of the addition of the Proposed Development into the cumulative baseline a number of factors are taken into consideration including:

- The distance between wind farms;
- The interrelationship between their Zones of Theoretical Visibility (ZTV);
- The overall character of the asset and its sensitivity to wind farms;
- The siting, scale and design of the wind farms themselves;
- The way in which the asset is experienced;
- The placing of the cumulative wind farm(s) in relation to both the individual proposal being assessed and the heritage asset under consideration; and
- The contribution of the cumulative baseline schemes to the significance of the effect, excluding the individual proposal being assessed, upon the setting of the heritage asset under consideration.

This appraisal is based upon a list of operational, under construction or consented developments along with developments where planning permission has been applied for. Cumulative developments are consistent with those assessed as part of the Landscape and Visual appraisal (Chapter 5). While all have been considered, only those which contribute to, or have the possibility to contribute to cumulative effects on specific heritage assets, are discussed in detail in this Chapter.

Requirements for Mitigations

National and local planning policies and planning guidance outlined in Section 10.2 of this Chapter, require a mitigation response that is designed to take cognisance of the possible impacts upon heritage assets by a proposed development and avoid, minimise, or offset any such impacts as appropriate. The planning policies and guidance express a general presumption in favour of preserving heritage remains in situ wherever possible.

Their 'preservation by record' (i.e. through excavation and recording, followed by analysis and publication by qualified archaeologists) is a less desirable alternative (SPP 2014, paras 137, 150; HES 2019a, 15).

Assessment of Residual Effect Significance

The residual effect is what remains following the application of mitigation and management measures, and construction has been completed and is thus the final level of impact associated with the Proposed Development. The level of residual effect is defined using criteria outlined in Tables 10-2 to 10-4.

No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the same as predicted for the operational phase.

The predicted level of effect on each heritage asset is determined by considering the asset's sensitivity in conjunction with the predicted magnitude of the impact.

Limitations and Assumptions

This assessment is based upon data obtained from publicly accessible archives as described in the under 'Method of Baseline Characterisation' above. HER data was received from DGC HER in January 2022 and NRHE data and HES Designation data was downloaded from HES in November 2021. This assessment does not include any records added or altered after this date.

These limitations are not considered to undermine the validity of the assessment.

10.3 Baseline Conditions

Current Baseline

Desk-based assessment and walkover survey have identified 24 non-designated heritage assets within the Proposed Development Footprint (Assets 20, 31, 34, 36, 38-40, 42, 46, 50-53, 56-63, 79, 82 and 84), which include evidence of agricultural and pastoral activity, quarrying, a bridge and a cairn. The Non-Statutory Register (NSR) Deil's Dyke (Asset 15) crosses the Proposed Development Footprint at its northern extent.

Within a 1km study area, this assessment has identified four Category B Listed Buildings (Assets 6-8 and 10), two Category C Listed Buildings (Assets 11 and 12), six NSR sites which DGC consider to be potentially nationally important (Assets 15, 95-98 and 102), 67 non-designated assets (Assets 19, 21-30, 41, 43, 44, 45, 47, 48, 55, 64-78, 80, 81, 83, 103-133) and three findspots (Assets 37, 49 and 54). Within the 1km study area, the DGHER records two assets as regionally significant (Assets 43 and 72), one regionally/locally significant site (Asset 70) and four locally significant assets (Assets 71, 103, 107 and 113).

Within a 5km study area, this assessment has identified a further two Category B Listed Building (Assets 9 and 33), two Category C Listed Building (Assets 13 and 14) and six NSR sites (Assets 16-18, 87, 99 and 100).

Within a 10km study area, this assessment has identified a further five Scheduled Monuments (Assets 1-4 and 32), a Category A Listed Building (Asset 5), ten NSR sites (Assets 85, 86, 88-94 and 101) and two non-inventory designed landscapes (Assets 135 and 136).

There are no Inventoried Battlefields or Inventoried Garden and Designed Landscapes within the 10km study area.

Prehistoric (8000 BC – AD 43) and Roman (AD 43 – 410)

There is one probable prehistoric cairn (Asset 59 – Plate 5) within the Proposed Development Footprint. Identified during the walkover survey in September 2020, it survives as uneven raised mound measuring approximately 50m by 30m. The potential cairn includes a potential horn-shaped courtyard to the north.

Within the 10km study area, there is one Scheduled fort dated to the prehistoric period (Asset 2), a NSR crannog (Asset 86), three NSR cairns (Assets 88, 90 and 91) and two NSR ring ditches (Assets 92 and 93) which are located to the east and southeast of the Proposed Development Site, evidencing an area of prehistoric activity.

The crannog (Asset 86) which is located 7.9km to the east of the Proposed Development Footprint, is a typical example of an Iron Age crannog which survives as a peat island 15m by 12m and about 0.5m above the water level.

The two cairns (Assets 90 and 91) are located 420m apart and are described as having commanding views to the north and east. The ring ditches (Assets 92 and 93) are located 183m apart and were recorded from aerial photography in 1995.

An early Bronze Age to late Bronze Age flanged adze (Asset 37) was recovered at Librymoor, along the northeastern access track of the Proposed Development Footprint, and an early Neolithic to early Bronze Age stone axe was recovered (Asset 54) at Kirkconnel 980m to the east of the Proposed Development Footprint.

There are no know Roman heritage assets within the Proposed Development Footprint. A temporary Roman camp (Asset 43), which has been identified from aerial photography, is recorded 830m to the north of the Proposed Development Footprint, although no trace survives on the surface. A NSR grass covered cairn previously identified as a temporary Roman camp (Asset 89) survives at Cairn Hill, 6.5km to southeast of the Proposed Development Footprint.

The presence of a probable prehistoric cairn within the Proposed Development Footprint as well as findspots recovered within the 1km study area, suggest the potential for prehistoric activity.

As such there is judged to be a Medium potential for prehistoric remains to survive within the Proposed Development Footprint.

Despite the recorded location of a Roman camp (Asset 43) 830m to the north of the Proposed Development Footprint, the monument's exact dating has not been confirmed through excavation and no further evidence of Roman activity has been identified within the study areas.

As such, there is judged to be a Low potential for Roman remains to survive within the Proposed Development Footprint.

Early Historic and Medieval (AD 410 – 1600)

There is one potential early medieval or medieval period assets within the Proposed Development Footprint. Deil's Dyke which is annotated as 'Celtic or Deil's Dyke' on later historic maps crosses the Proposed Development Footprint from the northwestern corner (Asset 50) continuing eastwards and to the north of the Proposed Development Footprint as sections of the NSR Assets 15, 95, 96, 97, 98 and 102. It is suggested that the bank is of early medieval origin, although previous archaeological works carried out in the early 1980s have identified sections of potential prehistoric origin (CFA, 2016).

The Old Statistical Accounts of Scotland gives an origin for the name of the parish of Kirkconnel to the saint 'Connel' to whom the parish is dedicated (Robertson, 1794, 433). A cross-base (Asset 66) dating to the tenth or eleventh century and currently located at Kirkconnel parish church, was uncovered in a boundary wall of the manse in 1897. Although no longer in its original place, the cross-base could have held a substantial cross-shaft. There are two monuments within the 10km study area which date to the late 12th century.

The NSR St Connel's Church (Asset 16) survives as foundations 2.8km to the north of the Proposed Development Footprint and the Scheduled Ryehill motte (Asset 32) located 8.2km to the southeast of the Proposed Development Footprint. The flat-topped motte was the seat of the Rosses who settled at Ryehill.

Although little of the Scheduled medieval Kyle Castle (Asset 1) remains, its construction shows evidence of a 15th and 16th century date. The monument which is situated on land at the junction of the Gelt and Glenmore Waters, is located 8.1km to the northwest of the Proposed Development Footprint.

There are two Scheduled Monuments within the 10km study area which, although undated in the DGHER, have their probable origin in the early medieval or medieval period. The Scheduled Orchard cross socket stone (Asset 3), located 6.1km to the east, and Crichton Peel and Sanquhar castle (Asset 4), located 7.1km to the east.

The wall and deer park (Asset 94) of Sanquhar Castle, located 6.7km to the east of the Proposed Development Footprint, are recorded as an NSR site. Although now partly covered by modern housing, the park continued in use during the post-medieval period. A single non-designated asset, the farmstead at Hillend (Asset 115), located 970m to south of the Proposed Development Footprint, is recorded in the DGHER as having its origin in the medieval period, although no further information is provided.

Although evidence of early-medieval and medieval activity within the Proposed Development Footprint is limited to Deil's Dyke, activity dating to the early-medieval and medieval period has been identified within the 10km study area. This activity occurs across the study area, although possibly with a focus to the east. In addition, there is the possibility that farmsteads and agricultural activity identified within the 1km study area may have their origin in the medieval period.

As such there is judged to be a Low potential for early-medieval and medieval remains to survive within the Proposed Development Footprint.

Post-medieval (AD 1600 – 1900)

Several assets within the Proposed Development Footprint date to the post-medieval period. These include a number of assets which were recorded during the walkover surveys in 2020 and 2021 (Assets 20, 31, 46, 50, 51, 52, 53, 55, 58, 59, 60, 61, 62, 63) and these are discussed in detail in the walkover survey section.

Early maps tend to be schematic, however they provide an indication of the surrounding landscape. Maps such as that dated to 1590 from an unknown author (Not Illustrated), Mercator's map of 1595 (Not Illustrated), Speed's map of 1610 (Figure 10-3) and Moll's map of 1732 (Not Illustrated) depict the nearby towns such as Sanquhar, Cumnock and 'Dunblanrik' located along the River Nith.

Roy's Military Map of southern Scotland dated 1747-1755 (Not Illustrated) depicts the area of the Proposed Development Footprint, within open moorland to the south of the

'Road from Air to Sanquhar'. Several farmhouses such as 'Crockroy' and 'Rigg' are depicted to the north of the Proposed Development Footprint and the area is crossed by several streams running northwards towards the River Nith. The stream which crosses the Proposed Development Footprint at Libry Moor (eastern extent of the Proposed Development Footprint) is bordered by trees which continue in a narrow band to the east.

Thomson's map of 1832 (Figure 10-4) provides a more detailed view of the area of the Proposed Development Site and the surrounding landscape. Details of the tributaries of the River Nith and the major towns which line it continue to be depicted and include Kirkconnel to the northeast. Some of the farmhouses which border the Proposed Development Footprint are depicted, and include Rig (Asset 48), Nether Cairn (Asset 113) and Crocroy (Asset 114).

The Ordnance Survey map of 1857 (Figure 10-5) provides a more detailed depiction of the Proposed Development Footprint with three sheepfolds (Assets 20, 31 and 42), a sandstone quarry (Asset 39), a well (Asset 40) and a foot bridge (Asset 38) depicted across the Proposed Development Footprint.

Although not depicted, a sheepfold at Asset 82, Hay Knowe, is also recorded by the DGHER and a sheepfold at Asset 58 was recorded during the walkover survey. The DGHER records a further 14 sheepfolds and sheep shelter (Assets 21, 22, 23, 24, 80, 83, 120-126 and 133) within the 1km study area. This concentration of sheepfolds within the Proposed Development Footprint and 1km study area indicates a pastoral use of the land during the post-medieval period.

The NSA describes the farms of the parish as having "*a great quantity of hill pasture as well as arable land. The hills are stocked with sheep of the black-faced breed – these being found more suitable for the climate than any other*" (Richardson, 1845, p.318).

The Ordnance Survey map of 1857 (Figure 10-5) also indicates that the surrounding landscape was quarried from at least the post-medieval period with several old shaft, old gravel pits and quarries (Asset 25, 41, 69 and 104) identified along the A76 and overlapping parts of the access tracks.

Further evidence for local quarrying is provided by the NSR site dated to the late 18th to early 19th century quarry at Craigdullyeart Hill (Asset 18) and the Grieve Hill to Dumfries wagonway (Asset 87), located 4km and 2.9km respectively to the north of the Proposed Development Footprint. The NSA describes the area as abundant with coal "*of the very best description*" (Richardson, 1845, p.315), although by this time the mining had largely moved to Sanquhar.

The 1857 OS map also shows Deil's Dyke (annotated as 'Celtic or Deil's Dyke') crossing into the Proposed Development Footprint from the northwestern corner (Asset 50) continuing eastwards and to the north of the Proposed Development Footprint as sections of the NSR Assets 15, 95, 96, 97, 98 and 102. The Dyke stops being depicted for approximately 2km and continues further to the east towards Sanquhar as sections of the NSR Assets 99,100 and 101. The OS map of 1857 (Figure 10-5) also depicts the area to the west of the Proposed Development Footprint as an open landscape free of the later plantation. A small, wooded area is depicted to the northeast at Polmeur Hill and a narrow line of trees, later Rig Plantation, borders the stream to the east.

Later post-medieval OS maps shows a landscape relatively unchanged. The narrow line of trees which bordered the stream to the east had been, by the time of the surveying

of the OS map of 1888, replaced by Librymoor Plantation, extending from the A76 and across a portion of the northeastern access track in three bands of plantations, Rig Plantation, Libry Plantation and Lowhill Plantation.

Eleven post-medieval assets within the 10km study area have been designated and these include one Category A Listed Building (Asset 5), six Category B Listed Buildings (Assets 6-10 and 33) and four Category C Listed Buildings (Assets 11-14).

The DGHER records a further 20 post-medieval non-designated assets within the 1km study area. These include two village references (Assets 74 and 76), two bridges (Assets 45 and 103), nine buildings and farmsteads (Assets 44, 47, 70, 71, 105, 106, 116, 117 and 127), a leper hospital (Asset 65), recorded approximately 390m to the north of the Proposed Development Footprint, a tramway (Asset 119) and mill (Asset 132), an enclosure (Asset 107) and evidence of agricultural practice (Assets 109, 111 and 112).

Historic mapping depicts and annotates the location of several farmsteads and associated sheepfolds along the River Nith and within the general area of the Proposed Development. Some of these names such as 'Crockroy' and 'Rigg' survive today, suggesting a landscape continuously settled and cultivated since at least the post-medieval period. This evidence suggest that the area of the Proposed Development Footprint was in use as rough pasture, predominantly for grazing.

As such, there is a High potential for post-medieval remains associated with agricultural and pastural practices to survive across the Proposed Development Footprint.

There is also a High potential for remains associated with quarrying to survive within the northern parts of the Proposed Development Footprint, in particular in the area of Librymoor.

There is judged to be a Low potential for other remains of post-medieval date to survive within the Proposed Development Footprint.

Modern (AD 1900 – present)

The early modern OS maps (Not Illustrated) of the Proposed Development Footprint show no great changes within the Site. The OS map of 1955 to 1957 (Figure 10-6) depicts the location of 20th century sheepfolds such as Assets 79, 81 and 84. The plantation which abuts the Proposed Development Footprint to the west does not appear on mid-20th century OS maps and must therefore have been established later than the OS map of 1964 (Not Illustrated).

The DGHER records three modern non-designated assets within Kirkconnel, a community centre (Asset 68), a war memorial (Asset 72) and a street (Asset 73).

Available evidence indicates that the Proposed Development Footprint continued to have a predominantly pastoral use during the modern period. As such, there is judged to be a Low potential for modern remains to survive within the Proposed Development Footprint. If present, these are likely to relate to the pastoral use of the Proposed Development Footprint.

Period Not Assigned

The DGHER records the location of 22 assets within the 10km study area which have not had a period assigned to them. These include a sub-circular mound located within the Proposed Development Footprint (Asset 60), several enclosures (Assets 19, 64, 108 and 110), cairns (Assets 27-30), a track (Asset 67), a mill dam (Asset 26), a well (Asset 34),

several farmhouses and structures (Assets 48, 77, 78, 128 and 131), a hall (Asset 75), a pond (Asset 129) and a quarry (Asset 130).

The DGHER records the location of a NSR earthwork (Asset 85) 6km to the east of the Proposed Development Footprint and a sub-rectangular building (Asset 17) recorded on the NSR 2.6km to the north of the Proposed Development Footprint. The structure was recorded from aerial photography in 2000 although no dates have been provided.

Whilst it is assumed that the farmhouses, mill dam and hall date to the post-medieval period or later, the other assets represent types encountered throughout all periods and as such are more difficult to date.

Previous Archaeological Works

A Cultural Heritage Assessment was carried out in 2016 for Sandy Knowe Wind Farm, which abuts and partially overlaps the Proposed Development Footprint to the east and south. The assessment (CFA, 2016) recorded the location of opencast coal mining carried out in the area of the Librymoor Plantation in the 1980s and 1990s which was later planted with commercial forestry.

Aerial Photography and LiDAR

The National Collection of Aerial Photography (NCAP) was consulted in January 2022, given closures due the Covid-19 pandemic earlier in the project programme. The aerial photography consulted dated from 1946 to 1988.

Photography from NCAP shows that the Proposed Development Footprint largely remained open moorland between 1946 and 1988. The area to the west of the Proposed Development Footprint remained opened moorland in 1946 (106GscotUK0090_4182), however the plantation which forms the western boundary was established by the time the aerial photography of 1975 (Sortie 39/RAF/4731, Frame 085) was taken. To the east, a photograph from 1988 (ASS2188_0161) shows the area of the Librymoor plantation, west of the northeastern access track, in use as an opencast coal mine, extending southwards from the A76.

Cambridge Air Photos was consulted for any photographs they may hold online. Thirteen air photographs were identified which may cover the Proposed Development Footprint, however, none were available online. A single oblique photo (SAW010731, dating to 1947) was available from Britain from Above which showed a general view of the valley of the River Nith.

LiDAR ('light detection and ranging') is a remote sensing technique which describes a method of determining three-dimensional (3D) data points by using a laser. Airborne LiDAR consists of an active laser beam being transmitted in pulses from a fixed-wing or rotary aircraft and the returning reflection being measured. The first returns are considered equivalent to the digital surface model (DSM) and the last being used to help calculate a digital terrain model (DTM).

The DSM is a digital elevation model of the land surface; it records the highest points, including buildings and the woodland canopy. The DTM is a digital elevation model of the bare earth, i.e. the ground beneath any vegetation with other structures such as buildings removed.

For this case study the LiDAR for Scotland Phase III was selected, covering the Site and a 1km study area. The available Lidar data covered only a portion of the Proposed Development Footprint; LiDAR data was not available for the southwestern and central

parts of the Proposed Development Footprint. In general, this assessment found evidence of modern ploughing along the northern boundary of the Proposed Development Footprint and to the southeast.

Several undated features were identified on LiDAR and confirmed during the walkover survey. These include a linear feature (Asset 51), a possible sheepfold (Asset 52) and a stone enclosure abutting a circular feature (Assets 31 and 53). Further to the south and to the east of Polhote Burn, LiDAR data indicated the location of a sub-rectangular feature, possibly a sheepfold (Asset 58) and the location of a potential cairn, visible during the walkover as an uneven raised mound with a potential horn shaped courtyard. Two features, both circular were identified from LiDAR on the eastern side of the Polhote Burn but could not be confirmed during the walkover survey (Assets 56 and 57).

Walkover Survey

A walkover survey of the Proposed Development Footprint was undertaken between the 21st and 22nd of September 2020. Weather conditions were generally clear and sunny to slightly overcast by the afternoon of the 22nd. This survey was focussed on the western portion of the Proposed Development Footprint. A walkover of the eastern portion of the Proposed Development Footprint was undertaken between the 3rd and 4th of August 2021 and included a survey of the proposed Turbines 29 and 30, their access tracks and an updated survey of the consented Sandy Knowe tracks and substation area. Weather conditions on the 3rd of August were partly clear and sunny and partly overcast with occasional showers; the 4th of August was generally clear and sunny. The consented Sandy Knowe Wind Farm was in construction at the time of the survey.

The Proposed Development Footprint was found to be largely covered in hummocky grass and reeds. The western portion of the Proposed Development Footprint was bisected from the northeast to southwest by Polhote Burn and its tributaries. Drainage channels and ditches were visible across much of the western portion of the Proposed Development Footprint, though they were more prominent to the east of Polhote Burn.

The area to the northeast and to the east of Polhote Burn has been ploughed in modern times with cultivation remains (Asset 55) noted across the area (Plate 1). A small portion of the Proposed Development Footprint and access track overlaps with this area. At this location, the Proposed Development Footprint is bound to the west by a relatively well-preserved drystone wall (Asset 63) and by modern forestry to the west and southwest.

The19agnituky nature of the ground and height of the reeds which became more compact and concentrated within the central and southern portion of the western section of the Proposed Development Footprint may have limited the visibility of low-lying archaeology that may have been present. Upstanding archaeological remains and some possible buried remains were identified by raised mounds and variations in vegetation.

The remains of Deil's Dyke (Asset 50/15) (Plate 2) are recorded approximately 420m to the north of Turbine 28, visible as an east-west raised boundary measuring approximately 1m wide and 1m high. This corresponds to the boundary dyke visible on historic OS maps, however its extent was not visible east of Polhote Burn.

Three large circular sheepfolds (Asset 20, 31, 52) were observed to the west of Polhote Burn (Plate 3). Two of these (Asset 20 and 31) have been identified from historic mapping and were preserved as upstanding drystone remains. The southernmost sheepfold (Asset 20) also included a chamber to the west (Plate 4). The third sheepfold (Asset 52) was identified through LiDAR analysis and was observed during the walkover survey as a large circular cropmark.

A subcircular raised mound (Asset 59) measuring 50m by 20m was identified to the east of Polhote Burn along an east-west alignment (Plate 5). The mound was possibly formed by two smaller circular mounds, possibly forming a cairn or chambered cairn. The northern section of the mound curved inwards, possibly forming a courtyard.

A rectangular drystone wall structure (Asset 58) survived to the east of the mound (Asset 59), with only the lower courses visible (Plate 6). The original purpose of the structure did not appear to be as a sheepfold although this may have been its later use.

The consented Sandy Knowe Wind Farm was found to be in construction with established tracks at the time of the 2021 walkover survey. The area directly surrounding the existing Sandy Knowe tracks was surveyed for visible archaeological remains along with areas where previously proposed tracks had been indicated. The wider area was bound to the northeast by late post-medieval forestry, which the northeastern access track crosses. The Proposed Development Site was accessed to the east from the A76, by an established track which crosses the area of the former Librymoor Plantation (Asset 37). Several archaeological features have been identified along this track from historical mapping, including the possible extension to Deil's Dyke (recorded as Asset 36 here), however these were not visible during the survey.

Several features were identified along the western access route, including the stone boundary (Asset 63) identified during the 2020 walkover survey. The stone boundary (Asset 63), visible on the first Ordnance Survey (OS) map, remains upstanding (Plate 8) and was recorded approximately 10m to the west of the tracks in this area. A section of Deil's Dyke (Asset 15) is recorded on the first edition OS map, running east to west in an area currently crossed by the track. No evidence of the Dyke was noted during the walkover. Approximately 140m to the south, an east to west linear feature (Asset 46) extending eastwards from the track was noted as a variation in vegetation (Plate 7).

The area to the north which is expected to accommodate the proposed Turbines 29 and 30 was largely covered in hummocky grass and reeds ranging from 0.5m-1m in height. The hummocky nature of the ground and height of the reeds in this area, may have limited the visibility of low-lying archaeology that may have been present. A single known archaeological feature was identified from historic mapping (Asset 42) but could not be identified during the walkover survey. This may indicate that the feature, a sheepfold, is no longer upstanding or its location was obscured by dense vegetation. No archaeological remains were identified within the footprints of the proposed turbines or associated access tracks. An east-west farm track was noted between the proposed locations of Turbines 29 and 30.

The substation is located within the southeastern corner of the Proposed Development Footprint. A single asset was recorded from historic mapping along the southern boundary of the Proposed Development Site and based on its distance from the substation was not visited. The substation for the consented Sandy Knowe Wind Farm was in construction at the location at the time of the visit, located to the south of an upstanding modern building, both located to the east of the track.

A temporary construction compound was at the time of visit, located to the north and east of the substation, set up over a compacted gravel ground and therefore no archaeological remains could be observed. The area further to the north, east and southeast was covered in thick hummocky grass and reeds, with forestry further to the northeast and southeast. The area between the substation and track to the west, as well as to the south, remained undeveloped, however it had been disturbed from the construction of the track and compound and probably deposited soil. Therefore, it was not possible to assess the survival of unknown archaeological features in the area directly surrounding the substation. With the exception of a section of Deil's Dyke (Asset 15) which is crossed by the consented Sandy Knowe tracks, no archaeological remains were identified within the footprint of the proposed turbines and associated infrastructures

Relevant Designated Assets within the ZTV and within 10km of the Proposed Development Footprint were visited between the 22nd and 23rd of September 2020 and the 4th of August 2021 in order to assess the potential impact of the Proposed Development on their setting. This is detailed in Section 10.4.

10.4 Assessment of Effects

Potential Construction Effects

During construction, direct impacts are likely to occur from vegetation clearance, earth moving operations, track construction and widening of tracks, and construction of all associated infrastructure (turbine bases, compounds, drainage etc). Setting impacts relating to construction would be short term, temporary effects and may occur due to the introduction of construction machinery on-site, additional construction traffic and construction of compounds. Given the nature of such impacts, setting impacts are only likely to occur in close proximity to the proposed works and would not exceed the operational effects upon setting and so, are not discussed further under construction effects.

The Proposed Development has been designed to avoid direct impacts on known heritage assets where possible. Most of the heritage assets identified during this assessment are located away from the proposed turbine and infrastructure footprint and as such, in these cases, no direct impacts are expected.

A number of known assets have been recorded within the footprint of the consented access tracks associated with Sandy Knowe Wind Farm. As the Proposed Development does not propose to widen or alter any of the Sandy Knowe infrastructure, beyond the possible burying of cables within the footprint, no further direct impacts are expected on these assets.

A sheepfold (Asset 42) which was identified from historic mapping but could not be identified during the walkover survey is located approximately 190m to the southwest of Turbine 29 and 160m to the north of the access track, however, based on its distance, it is unlikely to be disturbed during ground-breaking works for the turbine or associated infrastructure and as such, has not been considered in terms of direct impact.

A sheepfold (Asset 20) which measures 10m by 12m has been identified within the western part of the Proposed Development Footprint and located 150m to the east of Turbine 27 and within 20m of the proposed infrastructure. There is the potential for the sheepfold to be affected by construction works due to its proximity. The asset is

considered to be of Low importance. Given the distance from the infrastructure proposed, any impacts are likely to be partial and result from plant movements. As such the magnitude of impact is considered to be Negligible. Given the asset's Low sensitivity this would result in a Negligible level of effect which is not significant.

Direct impacts include the possible disturbance of hitherto unknown heritage assets. It is possible that previously unrecorded buried remains may survive below the current ground level, however the potential is less in areas previously disturbed through the opencast coal mining, forestry plantation and in areas disturbed during the construction of Sandy Knowe Wind Farm.

Outwith these previously disturbed areas, this assessment has established that the Proposed Development Footprint has been used as rough pasture, predominantly for grazing since at least the post-medieval period and the potential for further buried archaeological remains for each period has been outlined in Section 10.3 above.

Potential Operational Effects

Direct impacts upon known heritage assets and any previously unknown archaeological remains which may be present within the Proposed Development Footprint would cease with the completion of the groundworks stage of construction and consequently no direct impacts are predicted during the operational phase of the development.

This assessment considers the potential for impacts upon the setting of all designated heritage assets within 5km of the Site and the settings of all designated heritage assets which are considered to be nationally important including Scheduled Monuments; Category A Listed Buildings; Inventoried Gardens and Designed Landscapes, Inventoried Battlefields and World Heritage Sites, and NSR sites (as defined above) within 10km.

A Zone of Theoretical Visibility (ZTV) has been used to identify areas of theoretical visibility. Designated assets, which the ZTV suggested may have intervisibility with the Proposed Development were subject to site visits (Figure 10-7). Consideration was also given to assets outwith the ZTV but where turbines may be seen with assets in key views. Where no intervisibility between the asset and the Proposed Development was found, or where there was no view of the asset with the turbines from key locations, the assets have been excluded from further assessment.

Table 10-6: Summary of Operational Setting Effects

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
2	Kemps Castle, Fort 320m SW Of Euchan Bridge	Scheduled Monument	7.1km	6	Partially screened by intervening topography and surrounding trees. Proposed Development turbines would be seen as part of consented Sandy Knowe Wind Farm Turbines.	Medium	Low	Minor
4	Crichton Peel & Sanquhar Castle	Scheduled Monument	8.2km	6	Intervening modern forestry but not limiting visibility. Proposed Development turbines would be seen as part of consented Sandy Knowe Wind Farm Turbines.	Medium	Low	Minor
5	High Street, Tolbooth/ Town House	Category A Listed Building	7.7km	6	Located within built environment and screening provided by surrounding	Medium	Negligible	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					buildings.			
6	Kirkconnel Village Kirkconnel Parish Church & Church-yard	Category B Listed Building	2.6km	6	Some screening provide by surrounding buildings and modern forestry	Medium	Low	Minor
7	Kirkconnel Village Queensberry Hotel	Category B Listed Building	2.8km	6	Located within built environment and screening provided by surrounding buildings	Low	Negligible	Negligible
8	The Knowe Farmhouse And Steading	Category B Listed Building	2.1km	6	Proposed Development turbines would be seen as part of consented Sandy Knowe Wind Farm Turbines.	Low	Low	Negligible
10	Kirkconnel Village, Old Church House (Former Manse)	Category B Listed Building	2.4km	6	Screening provided by surrounding trees. Proposed Development turbines would be seen as part of the consented Sandy Knowe	Medium	Negligible	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					Wind Farm Turbines.			
11	Guildhall Bridge (A76 Over River Nith)	Category C Listed Building	2.1km	6	Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm Turbines.	Low	Low	Negligible
12	Kelloside	Category C Listed Building	2.5km	6	Screening provided by surrounding trees. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm Turbines.	Low	Low	Negligible
13	Kirkland Farmhouse	Category C Listed Building	3.8km	6	Screening provided by surrounding trees. Proposed Development turbines would be seen as part of consented Sandy	Low	Low	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					Knowe Wind Farm Turbines.			
15/102	Deil's Dyke Separate sections (Assets 88, 95, 96, 97, 98, 99 and 100)	NSR	365m/Within Proposed Development Site	6		Medium	Low	Minor
16	St Connel's Church	NSR	4.4km	6	Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm Turbines.	Medium	Low	Minor
32	Ryehill, Motte	Scheduled Monument	9.2km	6	Turbines would be located behind consented Sandy Knowe Wind Farm turbines	Medium	Low	Minor
33	Tower Farmhouse	Category B Listed Building	5.2km	6	Screening provided by Kirkconnel and commercial forestry. Proposed Development turbines would be	Low	Low	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					seen as part of the consented Sandy Knowe Wind Farm Turbines.			
85	Sean Caer / Sanquhar	NSR	7.4km	6	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Low	Minor
86	Black Loch / Loch Of Sanquhar	NSR	9.2km	6	Distant Views. Some screening provided by Sanquhar and commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Low	Minor
87	Grieve Hill To	NSR	3.8km	6		Low	Low	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
	Dumfries							
89	Cairn Hill	NSR	7.5km	6	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Low	Minor
90	The Rig	NSR	10km	6	Distant views. Some screening provided by intervening topography and commercial forestry.	Medium	Low	Minor
91	Twenty Shilling Burn	NSR	10.5km	6	Distant views. Some screening provided by intervening topography and commercial forestry.	Medium	Low	Minor
92	Euchan Foot	NSR	7.5km	3	Some screening provided by intervening	Medium	Low	Minor

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.			
93	Euchan Foot	NSR	7.7km	3	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Low	Minor
94	Sanquhar	NSR	7.8km	6	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe	Low	Low	Negligible

Site Number	Site Name	Designation	Distance to nearest turbine	Number of theoretically visible turbines	Other Factors affecting visibility	Relative Sensitivity	Magnitude of Setting Impact	Level of Effect
					Wind Farm.			
134	Blackside Hill Cairn	Scheduled Monument	20.8km	4	Distant views. Screening will be provided by intervening forestry.	High	Low	Minor
135	Craigdarroch	Non-Inventory Designed Landscape	10.4km	6	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Negligible	Negligible
136	Elioch	Non-Inventory Designed Landscape	9.8km	6	Some screening provided by intervening commercial forestry. Proposed Development turbines would be seen as part of the consented Sandy Knowe Wind Farm.	Medium	Negligible	Negligible

10.4.1 Kemps Castle (Asset 2)

Kemps Castle, Fort 320m SW Of Euchan Bridge (Asset 2) is a Scheduled Monument located 7.1km to the south-east of the Proposed Development's nearest turbine. The monument is immediately surrounded by trees and a steep slope with a rampart to the west and the Euchan Water to the south. The monument includes a plateau, a rampart and defensive fort area surviving as earthworks, disturbed by probable post-medieval forestry. In its wider landscape, the monument is surrounded by pastoral land to the north and east and a branch of the River Nith and forestry to the south. The fort is located on a high point within a west-southwest to east-northeast valley with farms, farmlands and a golf course visible to the north and east.

The fort's setting relates to the valley in which it is located. Its setting is within a defensive location which uses the natural defences on three sides and a rampart on the fourth. As such, elements of setting which contribute to an understanding and appreciation of the monument, include its topographical position, its relationship to the adjacent water courses and views over the valley. The monument is judged to be of High sensitivity to change in the valley but of Medium sensitivity to changes within the wider landscape.

The site visit indicated that several turbines were visible to the west, however, these did not affect the ability to appreciate the monument's setting. Wirelines produced for this assessment (Volume 4: Figure 10-9) indicate that a partial turbine and the tip of two turbines will be visible to the west of the monument. The turbines would constitute a slight alteration to the setting of the monument beyond those elements of setting which contribute to an understanding and appreciation of it and its significance.

Given the distance and limited visibility, the Proposed Development would not materially affect the ability to understand or appreciate the asset and its value.

The magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect which is considered Not Significant in EIA terms.

On this basis there would be no adverse effect upon the integrity of the asset's setting.

10.4.2 Crichton Peel and Sanquhar Castle (Asset 4)

Crichton Peel and Sanquhar Castle (Asset 4) is a Scheduled Monument located 8.2km to the southeast of the Proposed Development's nearest turbine. The monument is located to the southeast of Sanquhar, with ribbon development along the road to the north, historic and modern farmhouses and agricultural lands to the east and agricultural land and woodland, both natural and commercial to the south. In its wider setting, the monument is largely surrounded on all four sides by agricultural land and forestry within a roughly east to west aligned valley.

At the time of the setting assessment, existing turbines could be seen to the southwest and west. Set on a mound, the castle would have had open views of the valley with a defensive rampart to the north and steeps slopes to the east, south and west. The town of Sanquhar has developed eastwards with modern buildings noted directly to the west. The castle itself has been through multiple visible repairs and additions. Elements of setting which contribute to an understanding and appreciation of the castle include its topographical location and a strategic and defensive location allowing views over the valley.

Whilst considered to be of High sensitivity to change within its immediate valley setting, it is judged to be of Medium sensitivity to changes in the wider landscape.

Wirelines produced for this assessment (Volume 4: Figure 10-10) indicate that four turbines and the tips of two turbines would be visible to the west-northwest of the monument. The turbines would constitute a slight alteration to the setting of the monument beyond those elements of setting which contribute to an understanding and appreciation of it and its significance.

The magnitude of impact is thus judged to be Low, and the resulting level of effect would be Minor Adverse which is considered Not Significant in EIA terms.

On this basis there would be no adverse effect upon the integrity of the asset's setting.

10.4.3 High Street, Tolbooth/Town House (Asset 5)

High Street, Tolbooth/Town House (Asset 5) is a Category A Listed Building dating to 1735, located 7.7km to the east of the Proposed Development's nearest turbine. The Tolbooth is set at the western edge of Sanquhar and is a well-preserved building currently in use as an archive. The Tolbooth was built re-using stones from Sanquhar Castle (Asset 4) with a principal elevation to the east. It is set along the High Street of Sanquhar and surrounded by a built environment.

The wider setting of the monument and town are within a largely agricultural landscape with uplands, moorlands and forestry. The tolbooth is associated with the road and its purpose was for control of movement and taxation in the historic town of Sanquhar. Elements of setting which contribute to an understanding and appreciation of the tolbooth are primarily related to is location within Sanquhar and its location along the road which it was set to control. On this basis while sensitive to changes which would affect these relationships, it is considered to be of Medium sensitivity to changes beyond these setting elements.

The Proposed Development would be located at a relatively significant distance and would be located well beyond those elements of setting which contribute to the asset's significance. The Proposed Development would be at least partially screened by the surrounding built environment and visible as part of the Proposed Development Site (see Figure 5.2.8a). The Proposed Development would not affect the ability to understand its significance.

The magnitude of impact is judged to be Negligible which would result in a Negligible Adverse level of effect, which is Not Significant in EIA terms.

10.4.4 Kirkconnel Parish Church & Churchyard (Asset 6)

Kirkconnel Parish Church & Churchyard (Asset 6) is a Category B Listed Building located 2.6km to the east of the Proposed Development's nearest turbine. Kirkconnel Parish Church & Churchyard, which was completed in 1731, is set at the western edge of Kirkconnel on a slight rise. The church sits within a gated courtyard facing the Main Road, A76, to the southwest with a tree-lined burn slightly further southwest, the town to the east and a wider landscape which is comprised of agricultural land and modern forestry.

Elements of setting which contribute to an understanding and appreciation of the Church include its location in relation to the town of Kirkconnel to the east. Its topographical location on slight rise also contributes to an understanding and

appreciation of it, as it was likely sited as such to be seen from the town and the wider parish and on approach to the town.

On this basis while sensitive to changes which would affect these relationships, it is considered to be of Medium sensitivity to changes beyond these elements of setting.

Whilst visible, the Proposed Development would be located away from those elements of setting which contribute to the asset's significance, it would not affect the ability to understand its significance.

The magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect which is Not Significant in EIA terms.

10.4.5 Kirkconnel Village Queensberry Hotel (Asset 7)

Kirkconnel Village Queensberry Hotel (Asset 7) is a Category B Listed Building located 2.8km to the east of the Proposed Development's nearest turbine. The Queensberry Hotel is located within the town of Kirkconnel and along its main street. The two storey, 19th century hotel faces the road to the north with its primary view away from the Proposed Development.

Elements of setting which contribute to an understanding and appreciation of the Queensberry Hotel include its relationship to the town it served. On this basis while sensitive to changes which would affect this relationship, it is considered to be of Low sensitivity to changes beyond these elements of setting.

The Proposed Development would be located well beyond those elements of setting which contribute to the asset's significance. Turbines would not feature in views from the asset's principal elevation and the built environment surrounding the hotel would greatly impede views of the proposed turbines. The ability to understand the contribution that setting makes to the significance of the asset would not be affected.

The magnitude of impact is, therefore, judged to be Negligible which would result in a Negligible Adverse level of effect which is Not Significant in EIA terms.

10.4.6 The Knowe Farmhouse and Steading (Asset 8)

The Knowe Farmhouse and Steading (Asset 8) is a Category B Listed early 19th century two-storey farmhouse located 2.1km to the northeast of the Proposed Development's nearest turbine. The farmhouse and steading are set along an east-west aligned valley with the steading facing east and enclosing a courtyard away from the Proposed Development. The farmstead is well preserved and currently in use. The monument is located within a largely pastoral landscape with modern forestry to the north and east and dry-stone walls to the north and west. Its wider setting includes further agricultural lands and Kirckonnel to the east.

Although turbines were noted to the south and west, these did not affect the ability to appreciate the monument's setting. The elements of the setting which contribute to an ability to understand and appreciate the asset's significance, relate to the inter-relationship between the house and the farm buildings and the immediately proximate agricultural fields and communication routes which they would have been sited to exploit. While sensitive to changes which would affect these relationships, the farmhouse is judged to be of Low sensitivity to changes in the wider landscape. The Proposed Development would be located beyond these elements of setting which

contribute to the farmhouse's significance and would not affect the ability to understand or appreciate the asset in its setting.

Given this, the magnitude of impact is judged to be Low which would result in a Negligible Adverse level of effect which is Not Significant in EIA terms.

10.4.7 Old Church House (Former Manse) (Asset 10)

Old Church House (Former Manse) (Asset 10) is a Category B Listed Building located 2.4km to the east of the Proposed Development's nearest turbine. The Church House was built in around 1732, with later 18th and 19th century additions, for the Reverend Peter Rae who was appointed minister. Reverend Peter Rae is best known as an author and early printer. The house is set within a well-defined wooded garden, with limited views from outside. Outside the wooded garden, the house is set within an agricultural landscape with the Main Road, A76, to the north and Kirkconnel to the east. The house's historical setting would be in relation to Kirkconnel Parish Church and the town of Kirkconnel to the east.

The elements of setting which contribute to an understanding and appreciation of the house include its relationship to Kirkconnel Parish Church and the town of Kirkconnel. It derives other significance from its historical association with Reverend Peter Rae. On this basis while sensitive to changes which would affect these setting relationships, it is considered to be of Medium sensitivity to changes beyond these elements.

While there is theoretical visibility towards the Proposed Development from the wooded garden surrounding the house, the vegetation therein would likely greatly limit any views of the Proposed Development. These views may be further limited by interceding commercial plantations. The turbines would constitute a slight alteration to the setting of the asset beyond those elements of setting which contribute to an understanding and appreciation of it and its significance.

Intervening vegetation, both immediately surrounding the manse and in the middle distance would largely prohibit views of the Proposed Development. This coupled with the fact that it would not affect the ability to understand the relationship between the manse and the church or the village would mean that the contribution to significance made by the asset's setting would be largely unaffected.

The magnitude of impact is thus judged to be Negligible, and the resulting level of effect would be Negligible which is Not Significant in EIA terms.

10.4.8 Guildhall Bridge (A76 Over River Nith) (Asset 11)

Guildhall Bridge (A76 Over River Nith) (Asset 11) is a Category C Listed Building located 2.1km to the northeast of the Proposed Development's nearest turbine. The bridge was probably designed by John Smeaton in 1756 and built by William Douglas Mason in 1761. The bridge appears to have been modernised and widened and the original parts of the bridge are visible from the river side.

The bridge owes its location in the landscape to functional considerations associated with making the river crossing and, as such, the elements of setting that contribute to an understanding of it are its relationship to the road, of which it forms part, and the River Nith, over which it carries the road.

On this basis, it is judged to be of Low sensitivity to changes to its wider landscape setting.

The Proposed Development would not impact upon the architectural or historical interest of the bridge, nor would it impact upon the relationship between the bridge and those elements of setting which contribute to its understanding and appreciation.

The magnitude of impact is judged to be Low which would result in a Negligible Adverse level of effect which is Not Significant in EIA terms.

10.4.9 Kelloside (Asset 12)

Kelloside (Asset 12) is a Category C Listed Building dating to 1870 or 1876 and located 2.5km to the east of the Proposed Development's nearest turbine. The farmhouse is set on a north facing slope and surrounded by agricultural land on all sides. Kelloholm is located to the east and a valley and stream to the north. Forestry and rising landscape to the west.

As a farmhouse, the elements of the setting which contribute to an ability to understand and appreciate its significance, relate to the inter-relationship between the house and the farm buildings and the immediately proximate agricultural fields and communication routes which they would have been sited to exploit.

While sensitive to changes which would affect these relationships, the farmhouse is judged to be of Low sensitivity to changes in the wider landscape.

The Proposed Development would be located beyond these elements of setting which contribute to the farmhouse's significance and would not affect the ability to understand or appreciate the asset and its significance.

Given this, the magnitude of impact is judged to be Low which would result in a Negligible Adverse level of effect which is Not Significant in EIA terms.

10.4.10 Kirkland Farmhouse (Asset 13)

Kirkland Farmhouse (Asset 13) is a Category C Listed early to mid-19th century, two-storey farmhouse located 3.8km to the northeast of the Proposed Development's nearest turbine. The farmhouse is accessed from the southeast and is located within its own wooded garden bordered by dry-stone walls. The farmhouse is set on the lower parts of a south facing slope within an agricultural landscape and several modern plantations to the west.

Whilst visibility towards the Proposed Development can be expected due to the farmhouse's panoramic view to the south, the elements of the setting which contribute to an ability to understand and appreciate its significance, relate to the inter-relationship between the house and the farm buildings and the immediately proximate agricultural fields and communication routes which they would have been sited to exploit.

While sensitive to changes which would affect these relationships, the farmhouse is judged to be of Low sensitivity to changes in the wider landscape.

The Proposed Development would be located beyond these elements of setting which contribute to the farmhouse's significance and would not affect the ability to understand or appreciate the asset and its significance.

Given this, the magnitude of impact is judged to be Low which would result in a Negligible Adverse level of effect which is Not Significant in EIA terms.

10.4.11 Deil's Dyke (Asset 15) Separate Sections (Assets 88, 95, 96, 97, 98, 99, 100)

Deil's Dyke (Asset 15) is a HER cited NSR asset located 365m to the north of the nearest turbine at its nearest point. It has already been crossed by both consented and constructed Sandy Knowe Wind Farm's access tracks. The monument is recorded in the HER as extending from east of Afton Water to Burnmouth with some sections visible as slight mounds and others as faint banks barely distinguishable. Several of these surviving sections are recorded as NSR assets along a northwest to southeast alignment, mainly across the north part of the Proposed Development Footprint, with two sections to the east.

The HER cited NSR Twenty Shilling Burn (Asset 88) is located 10.6km to the southeast of the Proposed Development's nearest turbine. A group of 15 to 20 small cairns has been recorded by the RCAHMS on both sides of Deil's Dyke in the area between Twenty Shilling Burn and Merk Burn. The sections of the monument identified as part of this assessment are located to the south of the A76, across the agricultural land, commercial forestry and the consented Sandy Knowe Wind Farm. The monument is located within an east to west valley with a distinct ridge line to the north.

The setting of the sections of the monument which cross the Proposed Development Site, extending to the east, have been altered by historical mining, commercial plantations, the east to west A76 road and the consented Sandy Knowe Wind Farm. Similarly, the two sections (Assets 99 and 100) of the Dyke located to the east of the Proposed Development Site are located to the south of the A76 and to the west of Sanqhuar. These fragmentary sections are not readily understandable as a continuation of Assets 15, 95, 96, 97 and 98 to the west.

The exact function of Deil's Dyke is not necessarily understood and so it is difficult to understand the significance of the relationship it would have had to the surrounding landscape when constructed and in use. This can be further complicated by the dyke's fragmentary survival and low-lying position within agricultural fields.

However, elements of setting which can be seen to most contribute to an understanding and appreciation of it are its linear nature and the relationship of the continuous elements of the dyke to one another.

It is considered to be of Medium sensitivity to changes that would not affect these components.

Given the nature of the monument and its current setting within the study areas, the addition of the Proposed Development would not materially alter the current baseline setting of Deil's Dyke at this point. It would further not affect the ability to understand the significance of the asset.

The magnitude of impact is thus judged to be Low and this would result in a Minor Adverse level of effect which is considered Not Significant in EIA terms.

10.4.12 St Connel's Church (Asset 16)

St Connel's Church (Asset 16) is a HER cited NSR asset located 4.1km to the northeast of the Proposed Development's nearest turbine. The church, which may date to the late 12th century, is visible from only its foundations, and the gravestones to its south. It is set

on a steep south facing slope near the River Nith which runs south and east of the Church with wide views to the south and west.

The immediate landscape is largely pastoral. The church was in use until the late 17th century when it fell into ruins. The revetment walls for the church were reconstructed by local miners during the 1926 strike, with 'excess' stones used to create a cairn at the west end of the church. It can be expected that a hamlet or scatter of buildings may have been in the surrounding area as a pre-cursor to Kirkconnel. In fact, dressed stonework and building ruins have been identified between the church and Kirckonnel (Set in Stone Project). At the time of the setting assessment site visits at least nine wind farms were visible in an arc of view to the southwest of the asset.

A large proportion of the church's significance lies in its intrinsic characteristics which will not be affected by the Proposed Development. The monument was studied as part of the Set in Stone Project with archaeological remains dating to the late 9th century. According to legends, the church is one of three churches thought to have been constructed by St Connel in an east to west alignment.

On this basis while sensitive to changes which would affect these relationships, it is considered to be of Medium sensitivity to changes beyond its own setting.

The turbines would constitute a slight alteration to the current baseline setting of the asset beyond those elements of setting which contribute to an understanding and appreciation of it and its significance. Given the distance to the Proposed Development and the fact that it would be located well beyond those elements of setting which contribute to the asset's significance, it would not affect the ability to understand its value.

The magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect which is Not Significant in EIA terms.

10.4.13 Ryehill Motte (Asset 32)

Ryehill Motte (Asset 32) is a Scheduled motte located near the base of the south-facing slope of the Nith valley with views along the valley to the northwest and southeast; although views are currently slightly limited by trees at ground level, including several located along the sides of the motte.

The immediate landscape is largely pastoral. The motte survives as a flat-topped oval mound with a depression in its northern side, likely the result of quarrying. Ryehill motte originated in the 12th century as the seat of the Rosses. Its setting largely relates to the views across the valley to the east and west and along the north-facing slope on the opposite bank of the River Nith.

The motte is judged to be of High sensitivity to changes in the valley, where it would have been sited for strategic and defensive purposes allowing for surveillance and control of movement along the valley routeway; but is judged to be of Medium sensitivity to changes in the wider landscape.

Ryehill Motte would be located 9.2km to the east of the Proposed Development's nearest turbine wirelines (Volume 4: Figure 10-12) produced for this assessment indicate that four turbines and the tips of two turbines will be visible to the northwest.

Whilst the Proposed Development would be visible, it would be located within a panoramic view which already contains several wind farms. The turbines would

constitute a slight alteration to the setting of the asset beyond those elements of setting which contribute to an understanding and appreciation of it and its significance.

As such the Proposed Development would not materially affect the ability to understand or appreciate the asset and its significance.

The magnitude of impact is judged to be Low and the resulting effect would be Minor Adverse which is Not Significant in EIA terms.

There would be no adverse effect on the integrity of the asset's setting.

10.4.14 Tower Farmhouse (Asset 33)

The Category B Listed Farmhouse (Asset 33) is an early 19th century, two-storey farmhouse located 3.5 km to the east of the Proposed Development's nearest turbine. The farmhouse is located on a south-facing slope with views overlooking the valley to the south and its surrounding fields. The farmhouse appears to be within its own enclosed gardens, sheltered from views into and out by hedges and tress. Several turbines are visible to the southwest of Tower Farmhouse, in the direction of the Proposed Development. The farmhouse survives in a relatively rural and agricultural setting, away from the A76.

As a farmhouse, the elements of the setting which contribute to an ability to understand and appreciate its value relate to the inter-relationship between the house and the immediately proximate agricultural fields and communication routes which they would have been sited to exploit. While sensitive to changes which would affect these relationships, the farmhouse is judged to be of Low sensitivity to changes in the wider landscape.

As noted above the asset is sheltered from views out to the surrounding landscape by the mature hedges and trees within the garden which surrounds it. These would likely limit views of the Proposed Development. The Proposed Development would also be located beyond the agricultural fields and communication routes which are the elements of setting which contribute most to the farmhouse's significance.

As such the Proposed Development would not affect the ability to understand or appreciate the asset and its significance.

Given this, the magnitude of impact is judged to be Low which would result in a Negligible Adverse level of effect, which is Not Significant in EIA terms.

10.4.15 NSR Sean Caer (Asset 85)

The NSR Sean Caer (Asset 85), an HER cited NSR asset, is located 7.4km to the east of the Proposed Development's nearest turbine. The monument is a natural, flat grass-covered hillock on Broomfield farm which measures approximately 60m north to south and 40m east to west and is thought to have been 'Sean Caer', 'the old fort', from which the name Sanquhar is thought to derive. Its defensive location and shape, however, suggests the location of a castle rather than fort. An artificial ditch, 9m wide and 1.5m deep was recorded around the north and northwest side of the hillock, likely positioned to strengthen the weaker north side.

The monument is located along the southeastern side of a hill with views to the south and east. It would have originally been positioned near the confluence of the River Nith with the Crawick Water, though this relationship is now somewhat obscured by the

modern A76. Its position on the hillock would have offered a strategic and defensive position at this point along the Nith.

It is considered to be highly sensitive to changes which would affects its intended views or further affect its relationship with the valley systems. However, it is considered to be of Medium Sensitivity to changes in the wider landscape.

The Proposed Development would appear as a distant element in a landscape which has been altered by interceding later additions, including Sanquhar and the A76. It would be located beyond those elements identified above as contributing to the understanding and appreciation of the asset.

As such the magnitude of impact is judged to be Low. This would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.16 NSR Loch of Sanquhar (Asset 86)

The Black Loch of Sanquhar (Asset 86) is an HER cited NSR asset and a typical example of an Iron Age crannog. The crannog measures approximately 15m by 12m and along with associated structures were discovered when Black Loch was drained in around 1860 or 1863. The isle was connected to the shore by a narrow curving causeway. A dug-out canoe, was recovered in the mud, as well as a small whetstone and a perforated flat stone.

A 2003 investigation identified a group of three oak piles off the eastern edge of the mound, possibly related to the causeway identified when the loch was drained in the 1860s. This may indicate an eastern entrance to the crannog and as such important views may have been to the east and away from the Proposed Development. The location of the monument indicates that it would have been positioned for protection within a loch while taking advantage of its likely elevated position for views across the immediate surrounding landscape.

On this basis while sensitive to changes which would affect these views, it is considered to be of Medium sensitivity to changes beyond its own setting.

The Proposed Development's nearest turbine is located 9.2km to the west of the Black Loch of Sanquhar and would appear as a distant element in views to the southwest which already includes the town Sanquhar and operational turbines.

As such the magnitude of impact is judged to be Low. This would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.17 NSR Grieve Hill to Dumfries (Asset 87)

The HER cited NSR Grieve Hill to Dumfries (Asset 87) relates to the remains of the former Sir Charles Mentieth's wagonway from his coal works at Grieve Hill near New Cumnock. The wagonway seems to have come into operation from around 1820 and fell into disrepair around 1850. The monument is located 3.8km to the northwest of the Proposed Development's nearest turbine in upland moorland. Its immediate setting includes modern mining infrastructure to the southeast and commercial plantation to the north.

Elements of setting which contribute to an understanding and appreciation of the wagonway are primarily related to is relationship to the former coal workings for which it

was created. The position of the coal workings would have been dictated by presence of and access to the coal deposits.

On this basis the monument is judged to be of Low sensitivity to changes in the wider landscape.

Whilst likely visible from the asset, the Proposed Development would not impact upon the architectural or historical interest of the wagonway, nor would it impact upon the relationship between the wagonway and those elements of setting which contribute to its understanding and appreciation, as noted above.

The magnitude of impact is therefore judged to be Low which would result in a Negligible Adverse level of effect, which is Not Significant in EIA terms.

10.4.18 Cairn Hill (Asset 89)

The HER cited NSR Cairn Hill (Asset 89) is located 7.5km to the southeast of the Proposed Development's nearest turbine. The monument was recorded in 1856 as the location of a Roman Camp which was said to have stood on the summit of Cairn Hill. The monument is a partially grass-covered cairn measuring 20m in diameter by 1m high and located atop a hill with view across the landscape, in particular to the north and west, along a tributary of the Euchan Water and towards the valley of the Nith. Originally these views may have extended across the landscape to the east and southeast, however this view has now been altered by the addition of an area of commercial forestry to the east.

Although previously recorded as the possible location of a temporary Roman camp, there is no evidence to support this, and the monument may instead relate to a cairn. Further cairns (Assets 90 and 91) are located 2.5km to the southeast of the monument.

Whilst reasons for the location of such monuments is conjectural, they seem to generally be located in prominent positions with views to and from similar monuments and in this case, this may have been Assets 90 and 91. The cairn's views and its prominent placement within the landscape are elements of setting which contribute to an understanding and appreciation of it and its significance.

While sensitive to changes which would affect the monument's relationship to the key elements of setting as described here, the cairn is judged to be of Medium sensitivity to changes in the wider landscape.

The location of the Proposed Development, 7.5km to the northwest of the monument, would be beyond the setting of the cairn and would not be expected to affect the monument's significant views to the east. The Proposed Development would be located beyond those elements of setting which contribute to the cairn's significance and would not affect the ability to understand or appreciate the asset and its significance.

Given this, the magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.19 Rig Cairn (Asset 90)

The HER cited NSR asset, the Rig cairn (Asset 90), is located 10km to the southeast of the Proposed Development's nearest turbine. The monument is a partially turf-covered cairn situated on the edge of a level terrace with views to the north and east. The cairn

measures approximately 13m in diameter and 1.5m high. The cairn is located within 500m of two other cairns (Assets 88 and 91), although it is possible that Asset 88 relates to clearance cairns.

Whilst reasons for the location of such monuments is conjectural, they seem to generally be located in prominent positions with views to and from similar monuments and, in this case, this may have been Assets 88 and 90. The cairn's views, in particular to the north and east, where it sits above two tributaries to River Nith, and its prominent placement within the landscape are elements of setting which contribute to an understanding and appreciation of it and its significance.

While sensitive to changes which would affect these relationships, the cairn is judged to be of Medium sensitivity to changes in the wider landscape.

The location of the Proposed Development, 10km to the northwest of the monument, would be beyond the important elements of the setting of the cairn, as described above, and would not affect the monument's significant views to the north and east.

Given this, the magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.20 NSR Twenty Shilling Burn (Asset 91)

The HER cited NSR Twenty Shilling Burn (Asset 91) is a turf-covered cairn located 10.5 km to the southeast of the Proposed Development's nearest turbine. The cairn which measures 9m in diameter and 1m high, is located on the northeast facing side of a small hill in undulating open moorland with views to the north and east across the valley. The cairn is located within 500m of two other cairns (Assets 88 and 90), although it is possible that Asset 88 relates to clearance cairns.

Whilst reasons for the location of such monuments is conjectural, they seem to generally be located in prominent positions with views to and from similar monuments and, in this case, this may have been Assets 88 and 90. The cairn's views, in particular to the north and east and its prominent placement within the landscape are elements of setting which contribute to an understanding and appreciation of it and its significance.

While sensitive to changes which would affect these key relationships, the cairn is judged to be of Medium sensitivity to changes in the wider landscape.

The location of the Proposed Development, 10.5km to the northwest of the monument, would be beyond the key elements of the setting of the cairn, as described above, and it would not affect the monument's significant views to the north and east.

Given this, the magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.21 NSR Euchan Foot (Asset 92)

The HER cited NSR Euchan Foot round barrow (Asset 92), previously recorded as a ring ditch, has been identified as cropmark on aerial photographs. The monument is located 7.5km to the east of the Proposed Development's nearest turbine and 180m to the northwest of Asset 93. The round barrow survives with an internal diameter of about 20m and a possible entrance identified as a small gap along the eastern side. A central feature may represent a burial. The monument is located approximately 400m to the

southwest of Sanquhar, within an agricultural landscape which includes various farmsteads.

The monument's setting relates to the River Nith valley in which it is located and possibly to the adjacent roundhouse (Asset 93) to the southeast.

While sensitive to changes which would affect these relationships, the round barrow is judged to be of Medium sensitivity to changes in the wider landscape.

Whilst there is likely to be some visibility of the Proposed Development from the asset, it would be located beyond the elements of setting which contribute to the round barrow's significance, as defined above, and would not affect the ability to understand or appreciate the asset and its significance.

Given this, the magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.22 NSR Euchan Foot (Asset 93)

The HER cited NSR Euchan Foot roundhouse (Asset 93) has been identified as cropmark on aerial photographs. The monument is located 7.7km to the east of the Proposed Development's nearest turbine and 180m to the southeast of Asset 92. The monument has been identified as a circular ditch about 1.84m wide, enclosing an area approximately 11.6m in diameter. Two gaps have been identified within the ditch, which possibly include entrances, one to the north-northwest and one to the south-southeast. The monument is located approximately 400m to the southwest of Sanquhar, within an agricultural landscape which includes various farmsteads.

The monument's setting relates to the Nith River valley in which it is located and possibly the round barrow (Asset 92) to the northwest.

While sensitive to changes which would affect these relationships, the roundhouse is judged to be of Medium sensitivity to changes in the wider landscape.

The Proposed Development would be located beyond these elements of setting which contribute to the roundhouse's significance and would not affect the ability to understand or appreciate the asset and its value.

Given this, the magnitude of impact is judged to be Low which would result in a Minor Adverse level of effect, which is Not Significant in EIA terms.

10.4.23 NSR Sanquhar (Asset 94)

The HER cited NSR Deer Park Wall (Asset 94) at Sanquhar Castle is located 7.8km to the east of the Proposed Development's nearest turbine. The wall surrounded one of the deer parks associated with Sanquhar Castle and would have been in use from at least the early post-medieval period and continued to be in use following the castle's desertion. A large part of the wall survived in ruins in 1938, when it was described as a dry-built course rubble wall. The wall is recorded as surviving in only a fragmented state with some sections having been incorporated in garden walls, although it appears to have been largely removed.

The fragmentary nature of the wall now located within a largely altered and urban landscape, means that it is difficult to appreciate and understand the full extent of the former deer park and as such the relative sensitivity to changes in the wider landscape is judged to be Low.

Although theoretical visibility of the Proposed Development is possible, any views are likely to be restricted to glimpses of turbines beyond the built environment of Sanquhar and intervening trees. The Proposed Development would be viewed at a distance in the landscape and would be located beyond those elements of setting which contribute to an understanding and appreciation of it and its significance.

The Proposed Development would therefore result in a Low magnitude of change to the setting of the deer park wall.

Given the asset's current Low relative sensitivity to changes to its setting, a Low magnitude change would result in a Negligible Adverse level of effect, which is Not Significant.

10.4.24 SM Blackside Hill Cairn (Asset 134)

The Scheduled Blackside Hill Cairn (Asset 134 – see Figure 10-8 for location) is located 20.8km to the northwest of the Proposed Development's nearest turbine. The monument was recorded in 1895 as an oval cairn measuring 30m by 20m with a maximum height of 1.2m and was noted as being composed of small and large stones. The cairn was later despoiled for the building of an Ordnance Survey triangulation station.

The Scheduled Blackside Hill Cairn is located within a landscape containing other prehistoric monuments including the Scheduled Glenn Carr Cairn (SM2469) located 1.7km to the southwest. Both monuments are located atop Blackside Hill with view towards Dungavell Hill Cairn (SM2848), 10.9km to the northeast; the Scheduled Ballochmyle Viaduct, rock carvings 280m NE of (SM4484) located 8.2km to the southwest and the Scheduled Cairn Table, two cairns (SM4631) located 15km to the southwest.

The location of certain prehistoric monuments may have been selected for cultural or religious reasons, although an understanding of reasons for this has been largely lost since. Current understanding of their placement and intended views is often largely conjectural. The location of the cairn would have likely been selected for its prominent position, views across the landscape and views connecting it to other monuments. Given the height of the cairn and is wide panoramic views it is considered to be of High sensitivity to changes to its setting.

The turbines would appear at a distance of 20.8km in the landscape within an area which has changed and developed over time and is currently located between two towns, Kirkconnel and New Cumnock and in a view which already includes operational turbines.

A wireline (Volume4: Figure 10-12) produced for this assessment indicates that three turbines and the tip of a fourth turbine will be visible to the southeast of the monument. Due to the distance, the Proposed Development will have little effect on the ability to appreciate and understand the monument's setting.

As such, the magnitude of impact is judged to be Low, and the resulting level of effect would be Minor Adverse, which is Not Significant in EIA terms. The integrity of the asset's setting would not be harmed.

10.4.25 Craigdarroch non-inventory designed landscape (Asset 135) and Elioch non-inventory designed landscape (Asset 136)

The non-inventory designed landscapes of Craigdarroch and Elioch (Assets 135 and 136) are located 10.4km and 9.8km (centred) respectively, to the east of the Proposed Development's nearest turbine. Both non-inventory designed landscapes are heavily wooded to the north and west, providing a concealed and private environment for the buildings within and likely limiting any visibility towards the Proposed Development.

Elioch non-inventory designed landscape (Asset 136) relates to the surrounding designed landscape of a possible 16th century composite mansion house with tower house nucleus (LB17256) which was partly damaged by fire and partly demolished. It is located along the southern bank of the River Nith and to the south-east of Back Burn. Visibility to the west from the open space at the centre of the designed landscape would be limited by Wester Wood which forms the western part of the designed landscape. Craigdarroch non-inventory designed landscape (Asset 135) relates to the surrounding designed landscape of an early 19th century farmhouse (LB17253). It abuts Elioch non-inventory designed landscape (Asset 136) to the east, which is likely to further limit visibility towards the Proposed Development. Visibility to the west from the designed landscape would be limited by Grapal Wood which forms the south-eastern part of Elioch non-inventory designed landscape (Asset 136).

As such, it can be expected that the Proposed Development may be visible from the western periphery of Elioch non-inventory designed landscape (Asset 136) and from there would be a very minor landscape feature in distant views outwith the designed landscape's immediate valley setting and interrelationship with its associated buildings. Whilst the Proposed Development would be visible, it would be located within a panoramic view which already contains several wind farms. From Craigdarroch non-inventory designed landscape (Asset 135) views to the west towards the Proposed Development are likely to be limited by the wooded areas within Elioch non-inventory designed landscape (Asset 136) and as such if visible may be limited to glimpses in distant views outwith the designed landscape's immediate valley setting and interrelationship with its associated buildings. The turbines would constitute a slight alteration to the setting of both of these assets beyond those elements of setting which contribute to their understanding, appreciation and significance. On this basis while sensitive to changes which would affect these relationships, both assets are considered to be of Medium sensitivity to changes beyond these setting elements. The Proposed Development is located in a direction which is not integral to understanding the cultural value of these non-inventory designed landscapes and associated designed internal and external views and as such the magnitude of impact is judged to be Negligible. The predicted level of effect is considered to be Negligible, which is Not Significant in EIA terms.

10.5 Potential Decommissioning Effects

The decommissioning phase as detailed in Chapter 3 will include the removal of all major equipment and structures, unless required for the continuation of current land practice, and will see the affected areas reinstated.

At the time of the assessment, the future baseline conditions (environment and other developments) could not be predicted and the best practice decommissioning guidance methods would likely change during the lifetime of the Proposed

Development. However, based on the current baseline and proposal for decommissioning, it is anticipated that direct impacts during the decommissioning phase will be limited and will only occur if new ground works are required beyond the areas disturbed during the original construction works.

As such no significant direct effects are expected to arise from the decommissioning phase of the Proposed Development.

All operational effects upon the settings of designated assets would be reversed with the removal of the turbines following decommissioning, leading to a Neutral effect.

10.6 Assessment of Cumulative Effects

10.6.1 Potential Cumulative Construction Effects

Cumulative effects relating to cultural heritage are for the most part limited to operational effects upon the settings of heritage assets. While there can in some rare cases, be cumulative direct effects, non are anticipated to result from the construction, operation or decommissioning of the Proposed Development.

As such this assessment will consider the potential for cumulative effects upon the setting of heritage assets which have the potential to occur during the operational phase.

10.6.2 Potential Cumulative Operational Effects

The assessment of cumulative operational effects will be undertaken in a similar manner to that of the operational effects but will take into consideration other developments, including those which are operational, under construction, consented or proposed within 15km as shown on Figure 5-1-6b.

Ninety wind farms have been identified within 45km for consideration and 28 wind farms have been identified within 15km for an assessment of cumulative impacts. This assessment, however, only considers the 20 wind farms which could contribute to significant cumulative effects upon heritage assets within the 10km study area.

Cumulative operational effects have only been specifically considered for those assets which HES and EAC have identified as being most likely to be subject to significant effects (see Table 10-1).

Consented turbines and those in operation or construction at Sandy Knowe, Sanquhar and Whiteside Hill are visible to the west of Kemps Castle, Fort 320m SW Of Euchan Bridge (Asset 2) with the tips only of Magheughan Rig, Hare Hill and Hare Hill Extension Lethans Tip Increase and Glenmuckloch Farm likely to be visible. In planning or appealed wind farms Euchanhead and Lethans Extension, would also be visible within an arc of view north to south to the west of the monument (Volume 4: Figure 10-9).

When viewed from Kemps Castle, the Proposed Development turbines would not increase the spread of turbines on the horizon, instead appearing behind the consented Sandy Knowe Wind Farm.

As such a Negligible cumulative impact resulting in a Negligible cumulative effect is predicted upon the setting of Kemps Castle. This is a Not Significant cumulative effect and it would not adversely affect the integrity of the asset's setting.

Consented turbines and those in operation or construction at Sandy Knowe, Sanquhar, Whiteside Hill, Magheughan Rig, Hare Hill, Hare Hill Extension and Glenmuckloch Far are visible to the west of Crichton Peel & Sanquhar Castle (Asset 4) with the tips only of Lethans Tip Increase likely to be visible. In planning or appealed wind farms Euchanhead, Lethans Extension and Sanquhar II would also be visible within an arc of view north to south to the west of the monument (Volume 4: Figure 10-10). When viewed from Crichton Peel & Sanquhar Castle, the Proposed Development turbines would result in a slight increase in density of turbines to the west and would appear as a slight extension to the consented Sandy Knowe Wind Farm.

As such a Low cumulative impact resulting in a Minor cumulative effect is predicted upon the setting of Crichton Peel & Sanquhar Castle. This is a Not Significant cumulative effect and would not result in an adverse effect on the integrity of the asset's setting.

Consented turbines and those in operation or construction at Sandy Knowe, Sanquhar, Whiteside Hill, Magheughan Rig, Lethans Tip Increase and Glenmuckloch Farm, Hare Hill and Hare Hill Extension are visible to the west of Ryehill Motte (Asset 32). In planning or appealed wind farms Euchanhead, Lethans Extension and Sanquhar II would also be visible within an arc of view north to south to the west of the monument (Volume 4: Figure 10-11).

When viewed from Ryehill Motte, the Proposed Development turbines would result in a slight increase in density of turbines to the west and the Proposed Development would appear behind the consented Sandy Knowe Wind Farm and thus would not create any material additive cumulative effects.

As such a Low cumulative impact resulting in a Minor cumulative effect is predicted upon the setting of Ryehill Motte. This is a Not Significant cumulative effect and it would not result in an adverse effect upon the integrity of the asset's setting.

Consented turbines and those in operation or construction at Sandy Knowe, Lethans Tip Increase, Glenmuckloch Farm, Sanquhar, Pencloe Variation, Whiteside Hill, Magheughan Rig, Afton and Windy Rig would be visible to the southeast of Blackside Hill Southern Cairn (Asset 134) with the tips only of Hare Hill, Hare Hill Extension, Twentyshilling Hill and Brockloch Rig visible. In planning or appealed wind farms Euchanhead, Lethans Extension, Auchenlongford and Sanquhar II would also be visible within an arc of view northeast to southwest to the southeast of the monument (Figure 10-13).

When viewed from Blackside Hill Southern Cairn, the Proposed Development turbines would result in a marginal increase in density of turbines to the southeast and the Proposed Development would appear alongside the consented Sandy Knowe Wind Farm and thus would not create any material additive cumulative effects.

As such a Low cumulative impact resulting in a Minor cumulative effect is predicted upon the setting of Blackside Hill Southern Cairn. This is a Not Significant cumulative effect and it would not result in an adverse effect upon the integrity of the asset's setting.

10.7 Mitigation Measures

National planning policies and planning guidance as well as the local planning policies require that account be taken of potential impacts upon heritage assets by proposed developments and that, where possible, such impacts are avoided. Where avoidance

is not possible, impacts should be minimised or offset. The Proposed Development has been subject to an evolving design process whereby environmental, planning, technical and commercial constraints have been given due consideration (See Chapter 3 for further details).

Where significant environment effects (i.e. those that are Major or Moderate) are identified in the assessment process, measures to mitigate these effects are put forward in the form of recommendations. It should be noted that no significant effects on known heritage assets are predicted.

However, in line with best practice mitigation measures for non-significant effects are set out below. Mitigation measures proposed also take account of the potential for hitherto unknown buried archaeological remains to survive on Site.

A number of known assets have been recorded within the footprint of the consented access tracks associated with Sandy Knowe Wind Farm. As the Proposed Development does not propose to widen or alter any of the Sandy Knowe infrastructure, beyond the possible burying of cables within the footprint, no further direct impacts are expected on these assets.

A Negligible direct construction effect, which is not significant, is predicted upon a sheepfold (Asset 20). Asset 20 is located 150m to the east of Turbine 27 and within 20m of the proposed infrastructure and has the potential of being affected by construction works due to its proximity. As such it is recommended that a buffer zone of up to 10m with fencing should be put in place in order to mitigate any inadvertent damage which may result from construction movement. In addition, it is recommended that a watching brief should be undertaken on any ground-breaking works required within this buffer zone. This will allow for recording of any features affected by the ground works and the preservation of any remains encountered by record. If significant archaeological remains were encountered consideration should be given to micrositing infrastructure or, where this is not possible, further works such as excavation and post-excavation analyses.

The scope and method of any archaeological mitigation works would require to be agreed with Dumfries and Galloway Council Archaeologist as the archaeological advisors to Dumfries and Galloway Council.

This assessment has judged that there would be no likely significant effect upon the setting of designated assets during the operation of the Proposed Development. The Proposed Development has been designed to reduce the impact on various designated assets and areas and as a result, the setting impacts on designated cultural heritage features have been reduced insofar as possible and practical. The LVIA chapter discusses the measures to reduce the appearance or visual presence of the turbines within the wider landscape.

10.8 Residual Effects

No Significant direct effects have been identified during this assessment and therefore, no residual significant direct impacts are anticipated. Mitigation measures set out in Section 10.7 would ensure that there would be no inadvertent damage to assets located in close proximity to the Proposed Development infrastructure and allows for recording of archaeological remains where non-significant construction effects are predicted.

No cumulative direct effects on known heritage assets are anticipated during construction of the Proposed Development.

The predicted operational residual effects on the settings of the aforementioned heritage assets will be the same as assessed for the potential effects. Predicted residual cumulative operational effects will be the same as assessed for the potential cumulative effects.

No residual effects are anticipated to arise as a consequence of decommissioning.

10.9 Summary and Statement of Significance

This Chapter assesses the potential for direct and setting effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development.

The Proposed Development has the potential to impact upon hitherto unknown buried archaeological remains. A number of known assets have been recorded within the footprint of the consented access tracks associated with Sandy Knowe Wind Farm. As the Proposed Development does not propose to widen or alter any of the Sandy Knowe infrastructure, beyond the possible burying of cables within the footprint, no further direct impacts are expected on these assets. No Significant direct effects have been identified during this assessment and no residual significant direct impact are anticipated. A Negligible direct construction effect, which is not significant in terms of EIA, is predicted upon a sheepfold (Asset 20). Mitigation measures have been outlined in Section 10.7.

Potential operational effects on the settings of designated heritage assets within the 5km and 10km study areas, together with Nationally Significant Non-Designated assets (NSR assets) have been considered. No Significant effect upon the settings of these assets have been identified. Effects upon these assets have been minimised insofar as possible through the design process. Non-Significant setting effects are expected upon 14 designated heritage assets and upon 12 NSR assets.

No Significant cumulative effects are anticipated.

Following implementation of mitigation measures, likely direct effects will be offset. All operational effects upon the settings of designated assets will be as per the conclusions presented under Operational Effects for the life of the Proposed Development, however any such effects would be reversed with the removal of the turbines following decommissioning.

10.10 References

Ancient Monuments and Archaeological Areas Act 1979 (as amended). Available at: http://www.legislation.gov.uk/ukpga/1979/46

CFA Archaeology Ltd, 2016. Sandy Knowe Wind Farm, Dumfries and Galloway. Cultural Heritage Assessment

CIfA 2014b. Standard and guidance for historic environment desk-based assessment. The Chartered Institute for Archaeologists. Published December 2014. Updated October 2020. Accessed January 2022. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf

CIfA 2014c. Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment. The Chartered Institute for Archaeologists. Published December 2014. Updated October 2020. Accessed January 2022. Available at: https://www.archaeologists.net/sites/default/files/CIfAS&GCommissioning_2.pdf

CIfA, 2014a. Code of Conduct: Professional ethics in archaeology. The Chartered Institute for Archaeologists. Published December 2014, Updated October 2021. Accessed January 2022. Available at: https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2021.pdf

CIfA, 2019. Regulations for professional conduct. The Chartered Institute for Archaeologists. Published May 2019, Revised July 2021. Accessed January 2022. Available at: https://www.archaeologists.net/sites/default/files/Regulations%20for%20professional%20conduct.pdf

Dumfries and Galloway 2019. Local Development Plan 2. Available at: https://www.dumgal.gov.uk/media/21885/Adopted-Local-Development-Plan-2/pdf/Adopted_LDP2_OCTOBER_2019_web_version.pdf?m=637771647699370000

Historic Environment (Amendment) (Scotland) Act 2011. Available at: http://www.legislation.gov.uk/asp/2011/3/contents/enacted

Historic Environment (Scotland) Act 2014. Available at: http://www.legislation.gov.uk/asp/2014/19/contents/enacted

Historic Environment Scotland 2016. Managing Change in the Historic Environment (updated 2020). Available at: https://www.historicenvironment.scot/archivesandresearch/publications/publication/?publicationid=b7a05b45-f2a9-4c71-8450-a60b0094c62e

Historic Environment Scotland 2019a. Historic Environment Policy for Scotland. Available at: https://www.historicenvironment.scot/archives-andresearch/publications/publication/?publicationId=1bcfa7b1-28fb-4d4b-b1e6-aa2500f942e7

Historic Environment Scotland 2019b. Designation Policy and Selection Guidance. Available at: https://www.historicenvironment.scot/archives-andresearch/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b

Historic Environment Scotland 2019c. Scotland's Listed Buildings. Available at: https://www.historicenvironment.scot/archives-andresearch/publications/publication/?publicationId=34c90cb9-5ff3-45c3-8bc3a58400fcbc44

Historic Environment Scotland 2020. Managing Change in the Historic Environment: Setting. Available at: https://www.historicenvironment.scot/archives-andresearch/publications/publication/?publicationId=80b7c0a0-584b-4625-1fda60b009c2549

ICOMOS 2005. Xi'an Declaration. Available at: https://www.icomos.org/images/DOCUMENTS/Charters/xian-declaration.pdf

ICOMOS 2013. Burra Charter. Available at: https://australia.icomos.org/wpcontent/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf

Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 (as amended). Available at: http://www.legislation.gov.uk/ukpga/1997/9/contents

Planning etc. (Scotland) Act 2006. Available at: http://www.legislation.gov.uk/asp/2006/17/contents

Richardson, J. 1845. Parish of Kirkconnel. In Gordon, J. ed. 1999. The New Statistical Account of Scotland / by the ministers of the respective parishes, under the superintendence of a committee of the Society for the Benefit of the Sons and Daughters of the Clergy. Kirkconnell, Dumfries, Vol. 4, Edinburgh: Blackwoods and Sons, 1845, p. 314. Available at: https://stataccscot.edina.ac.uk:443/link/nsa-vol4-p314-parish-dumfries-kirkconnell

Robertson, J. 1794. Parish of Kirkconnel. In Sinclair, Sir J. 1999. The Statistical Account of Scotland, Kirkconnell, Dumfries, Vol. 10, Edinburgh: William Creech, 1794, p. 433. Available at: https://stataccscot.edina.ac.uk:443/link/osa-vol10-p433-parish-dumfries-kirkconnell

Scottish Government 2011. PAN 2/2011 Archaeology and Planning. Available at: http://www.gov.scot/Resource/Doc/355385/0120020.pdf

Scottish Government 2014. Scottish Planning Policy. Available at: https://www.gov.scot/publications/scottish-planning-policy/pages/5/

Cartographic References

Hall, S, 1848. Scotland. NLS, Shelfmark: Marischal 101

Mercator, 1595. Scotiae Regnum south sheet / per Gerardum Mercatorem per privilegio.

NLS, Shelfmark: EMS.s.4a

Moll, H 1745. The Shire of Dumfries or Nithisdale. NLS, Shelfmark: EMS.b.2.1 (8)

Ordnance Survey, 1898. Dumfriesshire V.11. Revised:1898, Published 1899. NLS

Ordnance Survey, 1898. Dumfriesshire V.12. Revised:1898, Published 1899. NLS

Ordnance Survey, 1955. NS71 - A. Revised: 1898 to 1954, Published 1955. NLS

Ordnance Survey, 1957. NS61 - B. Revised: 1908 to 1953, Published 1957. NLS

Ordnance Survey, 1955. NS70 - A. Revised: 1898 to 1954, Published 1955. NLS

Ordnance Survey, 1956. NS60 - A. Revised: 1898 to 1953, Published 1956. NLS

Roy, W. 1747-1755. Roy Military Survey of Scotland (Roy Lowland).

Speed, J. 1610. The Kingdome of Scotland. NLS, Shelfmark: Marischal 10

Thomson, J. 1832. Dumfriesshire. NLS, Shelfmark: EMS.s.712 (6)

Unknown. 1590. Scotiae nova et accurata descriptio. NLS, Shelfmark: EMS.s.499

Aerial Photography

Table 10-5: National Collection of Aerial Photography

Date	Sortie	Frame	Type
12/05/1946	106G/Scot/UK/0090	4182	Vertical
20/04/1954	58/RAF/1414	283	Vertical
20/04/1954	58/RAF/1414	285	Vertical
30/06/1975	39/RAF/4731	083	Vertical
30/06/1975	39/RAF/4731	085	Vertical
10/06/1988	ASS/62188	0159	Vertical
10/06/1988	ASS/62188	0161	Vertical
10/06/1988	ASS/62188	0160	Vertical