10 Cultural Heritage

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10 Cultural Heritage

10.1 Executive Summary

- 10.1.1 This assessment is designed to examine effects of the Proposed Development on the cultural heritage resource of the site and the surrounding landscape. A comprehensive desk-based assessment (DBA) was completed to establish the cultural heritage baseline for the Proposed Development. Accompanied by a detailed walkover survey, this DBA consulted readily available archaeological, historical and published records, identifying a total of 23 heritage assets within or adjacent to the site boundary.
- All 23 assets within or adjacent to the site boundary were assessed for potential direct physical impacts caused during the construction phase of the Proposed Development. Assessment showed that nine heritage assets will be directly physically impacted, with possible direct physical impacts on a further one. The potential effect identified on two of these heritage assets, in the absence of mitigation, is assessed as moderate adverse and thus significant in terms of EIA Regulations, with the remainder minor adverse or negligible (not significant).
- 10.1.3 Mitigation measures are outlined to reduce the effects on the two heritage assets subject to potentially significant effects. On other assets for which direct physical impacts were identified but effects were assessed as non-significant, mitigation measures are nonetheless recommended to reduce the level of effect where practicable. Mitigation includes clearly delineating heritage assets in advance of development; archaeological excavation in advance of development; and an archaeological watching brief during all site works across the southern part of the site.
- The Proposed Development covers a wider footprint than the Existing Development, with turbines and infrastructure also sited on the lower ground south of existing turbines. The archaeological potential of the site was assessed by archaeological and historic period. While the northern upland area has low archaeological potential for all periods, the southern area has higher potential for the survival of 18th-19th century post-medieval agricultural and occupation remains. For earlier periods this was considered as having low potential. As a result, the southern area has a degree of archaeological sensitivity, particularly in relation to survival of pre-improvement farming landscapes. This landscape is considered of low sensitivity, and given that it will still be possible to read and appreciate the landscape following the construction of the Proposed Development, the significance of effect is predicted to be negligible.
- 10.1.5 The increase in the scale of the turbines in comparison with the Existing Development means that while these are reduced in number, they will be visible over a wider landscape and potentially more prominent in views from heritage assets. The wider assessment of effects on the setting of heritage assets was compiled based on collation of potentially affected heritage assets within the wider landscape. A total of 44 heritage assets were identified within 10 km of the Proposed Development, each of which was assessed for effects on setting. No significant effect was identified on the setting of any of the identified heritage assets.
- 10.1.6 Assessment was also completed for potential cumulative impacts arising from other wind farm developments in the wider landscape. This concluded that the cumulative impact would be negligible and not significant.

10.2 Introduction

- 10.2.1 This chapter considers the potential impacts and effects of the Proposed Development on cultural heritage assets within the site and the surrounding area. Cultural heritage includes archaeological remains, historic buildings and historic landscapes. These are referred to as heritage assets.
- 10.2.2 Impacts can be physical with heritage assets impacted by the placement of site infrastructure, or a setting impact, where the setting of a heritage asset is affected by the erection of the Proposed Development.

- 10.2.3 The assessment uses readily available archaeological, historical, archival and published records supplemented by a detailed archaeological walkover survey to create a comprehensive cultural heritage baseline. The baseline is correlated with the details of the Proposed Development to establish if there would be any impact upon identified heritage assets. To assess any impact upon the setting of heritage assets, a combination of research, wireframes and Zone of Theoretical Visibility (ZTV) was used. To assess any cumulative effect, consideration is also given to other existing, consented and proposed wind farms in the area.
- 10.2.4 The Proposed Development is described in Chapter 3 and involves the erection of 14 turbines at Hagshaw Hill measuring up to 200 m from ground to tip, on an area currently occupied by 26 turbines, each 55 m high. The older turbines of the Existing Development are scheduled to be decommissioned and the assessment assumes their removal and reinstatement to a restored site.
- The presence of the Existing Development and Hagshaw Hill Extension means that a large proportion of the site has previously been subject to archaeological desk-based assessment (DBA). Completed in 2004 as part of the extension to the Existing Development, this assessment focussed on the upland areas around Broomerside Hill, Common Hill and Hagshaw Hill itself. The change in quantity, location and an increase in the height of the turbines alters the potential impacts on the cultural heritage baseline from the Existing Development. Re-alignment of the site boundary also sees an area to the south of the Existing Development, around Broomerside, encompassed by the Proposed Development. This area has not been subject to archaeological survey previously.

10.3 Legislation, Policy and Guidelines

10.3.1 This chapter was prepared with reference to all relevant statutory and planning frameworks for the Historic Environment.

Legislation

- 10.3.2 Relevant legislation and guidance documents have been reviewed and considered as part of this cultural heritage assessment. Of particular relevance are:
 - Ancient Monuments and Archaeological Areas Act 1979;
 - Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997; and
 - The Historic Environment (Amendment) (Scotland) Act 2011

Planning Policy

10.3.3 Chapter 5 sets out the planning policy framework that is relevant to the EIA. The policies considered and set out below include both National planning policy and Regional and Local policy.

National Policy

- Planning Advice Note (PAN) 2 (2011);
- Scottish Planning Policy (SPP) (2014);
- National Planning Framework for Scotland (NPF3) (2014); and
- Historic Environment Scotland Policy Statement (2016).

Regional and Local policy

- The South Lanarkshire Local Development Plan (SLLDP) (2015)
 - Policy 1: Spatial Strategy;
 - Policy 15: Natural and Historical Environment; and
 - Policy 19: Renewable Energy.

 South Lanarkshire Local Development Plan: Natural and Historic Environment – Supplementary Guidance 9

Guidance

- 10.3.4 Recognisance has been taken of the following best practice guidelines/guidance etc:
 - Chartered Institute for Archaeologists (CIfA) Code of Conduct (CIfA, 2014);
 - Standard and Guidance for Historic Environment Desk-Based Assessment (CIfA, 2017); and
 - Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016).

10.4 Consultation

10.4.1 No formal Scoping Opinion was sought for the Proposed Development. However, during preparation of the baseline, direct consultation was undertaken with Historic Environment Scotland (HES) and the West of Scotland Archaeology Service (WoSAS) to identify sensitive heritage assets with potential to be affected by the Proposed Development. Consultation was sought directly via email. A summary of the responses is shown in Table 10.1 and copies of consultee correspondence are provided in Appendix 4.1.

Table 10.1 – Summary of Scoping and Consultation Responses for Cultural Heritage

| Consultee | Summary of Response | Comment |
|---|---|--|
| Historic Environment Scotland (HES) | HES was contacted directly via email on 30 July 2018, requesting further information on 13 August and providing a consultation response on 23 August. HES agrees that the baseline for the Proposed Development should assume a restored site. It was indicated that the proposed study areas and methodology should be sufficient for assessment of heritage assets. HES supports the use of wireframes for key sites and recommend that visualisations should exclude the Existing Development, but that comparative visualisations should be prepared comparing the Existing Development and Proposed Development from the same key viewpoints. | The assessment was compiled following the Study Areas outlined to HES. Wireframes were prepared for key sites showing comparison between the Existing and Proposed Development. |
| West of Scotland Archaeology Service (WoSAS) as advisers to South Lanarkshire Council in all | WoSAS was contacted directly via email on 30 July 2018, providing an initial response on 02 August and a secondary response on 14 August. WoSAS recommended a Study Area from 5km to 10km, primarily due to the | The Middle Study Area was increased from a proposed 5km to 10km following discussion with WoSAS. The assessment addresses the potential physical impacts |

| Consultee | Summary of Response | Comment |
|-----------------------------------|---|---|
| matters pertaining to archaeology | increase in the height of the proposed turbines, making them potentially visible to heritage assets where the Existing Development turbines are not visible. They also stressed the importance of assessing the cumulative impact of larger turbines, taking account of other developments in the area including the Hagshaw Hill Extension. WoSAS requested screening of heritage assets to identify those considered regionally or nationally important. WoSAS noted the locations of the proposed turbines and site infrastructure will require excavation in previously undisturbed ground. | resulting from the excavations and the cumulative effect of the Proposed Development with other relevant wind farms in the vicinity. Basic screening was undertaken to identify those heritage assets of national importance. This screening relied upon the WoSAS Non-Statutory Register (NSR). |

10.5 Assessment Methodology and Significance Criteria

Scope

- 10.5.1 The specific objectives of the cultural heritage assessment are to:
 - Establish the cultural heritage baseline, identifying those heritage assets which have potential to be affected by the Proposed Development;
 - Identify the archaeological potential of the Proposed Development site;
 - Consider the effects of the construction and operation of the Proposed Development on identified heritage assets; and
 - Propose mitigation measures, where appropriate, to reduce any significant effects identified.
- In accordance with SNH's draft guidance on repowering (Assessing the Impact of Repowered Windfarms on Nature, June 2018), the assessment assumes the removal of the Existing Development turbines and the reinstatement of the site as the baseline against which to assess the impacts of the Proposed Development. However, where relevant, commentary is also given in respect of the difference in effects (for example on setting of cultural heritage assets) between the Existing Development and the Proposed Development.

Consultation

10.5.3 Consultations were undertaken with HES and WoSAS as detailed in Table 10.1.

Study Area

10.5.4 Cultural heritage assets have been identified and assessed within three distinct and clearly defined study areas (refer to Figures 10.1 to 10.3).

Inner Study Area:

The Inner Study Area corresponds with the boundaries of the Proposed Development and a buffer of 1 km around the proposed turbines.

Any designated or undesignated assets recorded within the boundary of the Proposed Development have potential to be directly physically impacted. In addition, all sites within a 1 km buffer of the proposed turbines are included as part of the Inner Study Area. While none of these should be directly physically impacted by the Proposed Development, inclusion allows the Proposed Development site to be placed in a broader historical context, creating a more accurate baseline. The impact on the setting of these assets will also be assessed, alongside the historic landscape of the Proposed Development site.

Middle Study Area:

A Middle Study Area extends for approximately 10 km beyond the proposed turbines, and 9 km beyond the Inner Study Area. Information for the Middle Study Area is collated for all Nationally and Regionally Significant designated cultural heritage assets, including Scheduled Monuments, Category A and Category B Listed Buildings and Conservation Areas. SMR sites identified as Nationally Significant are also included within the Middle Study Area. The impact on the setting of these assets will be assessed.

Outer Study Area:

An Outer Study Area extending beyond the Middle Study Area up to 20 km from the proposed turbines. Assessment was primarily based on the ZTV through which the theoretical visibility of the turbines could be seen. This was assessed against sites of International and National Importance to identify those upon which there could be an impact upon their setting.

Desk Study

- 10.5.5 Sources consulted during preparation of the baseline include:
 - HES databases of Designated Cultural Heritage assets;
 - The South Lanarkshire Council Sites and Monuments Record (SMR) as maintained by WoSAS;
 - The National Record of the Historic Environment (NRHE) as maintained by HES;
 - Historic Mapping available from the National Library of Scotland (NLS);
 - Vertical and oblique aerial imagery as held by the National Collection of Aerial Photography (NCAP) and other online platforms;
 - Historic Land-use Assessment Map (HLAmap) as held by HES;
 - The British Geological Survey (BGS);
 - Bibliographic references and early parish accounts, in particular the Old and New Statistical Accounts and the Ordnance Gazetteer of Scotland;
 - Online resources; and
 - Relevant published and unpublished documentary sources.

Site Visit

- 10.5.6 A walkover survey of the site was completed on 16 August 2018 in weather conditions which varied from overcast and showery to bright sunshine.
- 10.5.7 The walkover was designed to visit and record each cultural heritage asset identified in the Inner Study Area during the DBA. It was also designed to ensure comprehensive coverage of the Proposed Development site, identifying any previously unknown cultural heritage assets which could be affected by the Proposed Development. Particular attention was paid to the areas where infrastructure is proposed as part of the Proposed Development.

Assessment of Potential Effect Significance

Assessment Methodology

10.5.8 Heritage assets identified in the baseline assessment are assigned a level of sensitivity based on their heritage significance. This is partly established through an asset's designation and use of professional judgement. Table 10.2 acts as a guide in defining the value of a heritage asset.

Table 10.2 - Historic Environment Sensitivity

| Sensitivity | Site Type |
|-------------|--|
| Very High | World Heritage Sites |
| High | Scheduled Monuments |
| | Category A Listed Buildings |
| | Sites in the Inventory of Gardens and Designed Landscapes |
| | Sites in the Inventory of Battlefields |
| | Some undesignated sites or buildings assessed as being of national importance |
| Medium | Category B Listed Buildings |
| | Conservation Areas |
| | Some undesignated sites or buildings assessed as being of regional |
| | importance |
| Low | Category C Listed Buildings |
| | Some undesignated sites assessed as being of local importance or |
| | compromised by poor preservation. |
| Negligible | Compromised sites already badly damaged, destroyed or those whose archaeological or historic value is of little or no interest |
| Unknown | The importance of the asset cannot be ascertained |

The WoSAS SMR does not specifically identify which heritage assets are considered nationally or regionally important, or of high or medium sensitivity. However, the WoSAS Non-Statutory Register (NSR) of Schedulable Monuments identified those assets of potentially schedulable quality (high sensitivity) on behalf of Historic Scotland, the precursor to HES. The NSR is incomplete and professional judgement is used to consider heritage assets for inclusion in the assessment. It is considered beyond the reasonable scope of this assessment to reappraise each of the SMR sites within the Middle Study Area to identify those considered of high significance. The NSR sites are considered of high sensitivity.

10.5.10 Historic landscapes are assessed within the Inner Study Area through a combination of visual inspection and analysis of HLAmap. Only designated historic landscapes are considered for the Middle and Outer Study Areas.

Physical Impacts

10.5.11 Physical impacts may be caused by a range of activities during the construction phase of the Proposed Development, including ground disturbing excavations for building foundations; access tracks; storage and compound areas; and cable and service trenches. Damage can also be caused by machine movement over vulnerable sites or temporary soil storage. Physical impacts on cultural heritage assets are normally adverse, permanent and irreversible.

Impacts on the Setting of an Asset

10.5.12 HES discuss the setting of a monument in their "Managing Change in the Historic Environment; Setting" document.

"the way in which the surroundings of a historic asset or place contribute to how it is understood, appreciated and experienced. Monuments, buildings, gardens and settlements were almost always placed and orientated deliberately, normally with reference to the surrounding topography, resources, landscape and other structures. Over time, these relationships change, although aspects of the earlier setting can be retained."

Setting can therefore not simply be defined by a line on a map and is likely to be unrelated to modern land ownership or to curtilage, often extending beyond immediate property boundaries into the wilder area." (Historic Environment Scotland 2016, 6)

- 10.5.13 The setting of a historic asset can incorporate a range of factors, not all of which will apply to every case. These include:
 - current landscape or townscape context;
 - views to, from and across or beyond the historic asset or place;
 - key vistas (for instance a 'frame' of trees, buildings or natural features that give the historic asset or place a context, whether intentional or not);
 - the prominence of the historic asset or place in views throughout the surrounding area, bearing
 in mind that sites need not be visually prominent to have a setting;
 - aesthetic qualities;
 - character of the surrounding landscape;
 - general and specific views including foregrounds and backdrops;
 - views from within an asset outwards over key elements in the surrounding landscape, such as the view from the principal room of a house or from a roof terrace;
 - relationships with other features, both built and natural;
 - non-visual factors such as historical, artistic, literary, place name, or scenic associations, intellectual relationships (e.g. to a theory, plan or design), or sensory factors; and
 - a 'Sense of Place': the overall experience of an asset which may combine some of the above factors.

Magnitude of Impact

10.5.14 The magnitude of impact on heritage assets is assessed through an analysis of the extent to which the Proposed Development impacts upon the value of an asset through physical changes to its fabric or changes to its setting.

- 10.5.15 Potential impact on the setting of heritage assets are assessed using a combination of professional judgement, research into the history of the assets and ZTV mapping supplemented by wireframes where appropriate.
- 10.5.16 The magnitude of impact as shown in Table 10.3, has been categorised on a five-point scale from an anticipated 'major' impact to one of 'no change'. It is not anticipated that there will be any beneficial impacts on heritage assets and as a result all impacts are considered adverse.
- 10.5.17 These can be physical impacts, setting impacts and cumulative impacts, and may arise during the construction phase, operation or decommissioning.

Table 10.3 - Impact magnitude criteria

| Magnitude | Criteria |
|------------|---|
| Major | Change to most or all key archaeological materials, such that the resource is totally altered. |
| | Comprehensive changes to setting such that the ability to appreciate the heritage asset is entirely compromised |
| Moderate | Changes to many key archaeological materials, such that the resource is clearly modified. |
| | Considerable changes to setting that affect the character of the asset and severely effect the ability to appreciate the asset. |
| Minor | Changes to key archaeological materials, such that the asset is slightly altered. |
| | Slight changes to setting that will have a minor effect on the ability to appreciate the asset. |
| Negligible | Very minor changes to archaeological materials or setting. |
| No Change | No Change to the fabric or setting of a heritage asset |

Inner Study Area

- 10.5.18 Heritage assets within the site boundary were each visited and their extent mapped. Each asset was researched as part of the DBA. Physical impacts on each heritage asset were assessed by overlaying the proposed site infrastructure with the locations of identified heritage assets.
- 10.5.19 Potential setting impacts on sites in the inner Study Area were also addressed.

Middle Study Area

10.5.20 Setting impacts on heritage assets in the Middle Study Area were assessed using a combination of site visits, professional judgement, research and ZTV mapping cross-referenced with web-based programmes and supplemented by wireframes where appropriate.

Outer Study Area

10.5.21 Assessment of heritage assets within the Outer Study Area were primarily based on ZTV mapping cross-referenced with web-based programmes where necessary to judge distance from the turbines, intervening landscape, topography and vegetation cover. Professional judgement was used to judge whether heritage assets would be affected by the Proposed Development.

Significance of Effect

10.5.22 The significance of the effect of the scheme on heritage assets has been defined by correlating the sensitivity of the heritage asset with the magnitude of the potential impact as shown in Table 10.4. In this assessment, effects of 'moderate' significance and above are considered 'significant' in terms

of EIA regulations. Where two alternatives are provided in the table (e.g. Moderate/Major significance), professional judgement has been used to define a single significance rating.

Table 10.4 - Significance of Effects Matrix

| Sensitivity | Magnitude of Impact | | | | | | | | |
|-------------|---------------------|-----------------------|-----------------------|-----------------------|-----------|--|--|--|--|
| | Major | Moderate | Minor | Negligible | No Change | | | | |
| Very High | major | major | moderate / major | minor | neutral | | | | |
| High | major | moderate / major | minor / moderate | minor | neutral | | | | |
| Medium | moderate / major | moderate | minor | negligible / minor | neutral | | | | |
| Low | minor / moderate | minor | negligible / minor | negligible / minor | neutral | | | | |
| Negligible | minor | negligible / minor | negligible / minor | negligible | neutral | | | | |

Requirements for Mitigation

- 10.5.23 Mitigation to reduce the impact upon a cultural heritage asset, or offsetting measures if mitigation is not possible, will be required for significant effects, and may be proposed where the significance of effect is identified as greater than negligible.
- 10.5.24 National planning policy and guidance, SPP and PAN2/2011, as well as the local plan SLLDP (see paragraph 10.3.3), require the development of proposals to offset the impact of the Proposed Development on heritage assets within the site boundary.
- 10.5.25 Forms of mitigation vary depending upon the extent of the potential impact, and whether there is a physical or setting impact.

Assessment of Residual Effect Significance

- 10.5.26 Analysis of the significance of effect will have identified those sites where mitigation is required or proposed. However, even when committed mitigation measures are undertaken to reduce the impact of the Proposed Development, residual effects may remain.
- 10.5.27 Professional judgement has been followed to ascertain the extent of any residual effects following the implementation of mitigation measures.

Limitations to Assessment

- 10.5.28 The assessment has been detailed and comprehensive, carried out in accordance with existing guidelines and best practice.
- 10.5.29 However, it is possible that previously unrecorded archaeological deposits will survive in areas of the Proposed Development site. The presence of these cannot be adequately quantified other than through the balance of probability.
- 10.5.30 The walkover survey was completed during the summer, when vegetation levels in some areas of the Proposed Development site (particularly the Windrow Burn) were higher than would be

considered ideal for the identification of ephemeral archaeological features. However, this was not felt to adversely affect the results of the walkover survey.

10.5.31 Assessing magnitude of change on sites was undertaken through wireframes, ZTV mapping and site visits. These combine to provide a comprehensive picture as to how the Proposed Development would affect any heritage assets. However, not all sites assessed were visited. It must be noted, both ZTV mapping and wireframes provide an idealised picture of the landscape, free from the existence of buildings, vegetation and other landscape features which may block the view of the turbines from specific features. Both ZTV mapping and bare-earth wireframes provide a worst-case scenario of the Proposed Development.

10.6 Baseline Conditions

General

- 10.6.1 The cultural heritage baseline for the Proposed Development area was established following completion of a comprehensive desk-based assessment (DBA) and walkover survey. The DBA accessed all readily available sources to identify heritage assets within the boundaries of the site, using evidence for assets in the surrounding landscape to establish the archaeological potential of the Proposed Development area. The results of this DBA are summarised here, but the wider baseline assessment can be viewed in Appendix 10.1.
- 10.6.2 Detailed information on those heritage assets identified in the Inner, Middle and Outer Study Areas is available in the Gazetteer (Appendix 10.2) as Tables A10.1, A10.2 and A10.3 respectively. The locations of these sites can be seen in Figures 10.1, 10.2 and 10.3.
- 10.6.3 In the Gazetteer, heritage assets are assigned a unique identification number pre-fixed by the initials "HH" for "Hagshaw Hill". Those sites within the Inner Study Area begin at HH01; the Middle Study Area at HH101; and the Outer Study Area at HH201. These unique identification numbers are used in the following baseline summary to allow correlation with the more detailed descriptions in the Gazetteer.

Inner Study Area

Designated Sites

10.6.4 There are no designated sites within the Inner Study Area.

Non-Designated Sites

- 10.6.5 A total of 29 non-designated heritage assets were identified within the Inner Study Area using the resources and methodology outlined in paragraphs 10.5.5 to 10.5.7. Of these, 23 heritage assets were located within the boundary of the Proposed Development, with a further six within or just outside in the 1 km buffer around this.
- 10.6.6 Of the 29 non-designated heritage assets identified within the Inner Study Area none were identified as of high or medium sensitivity. Twenty-seven heritage assets were identified as of low sensitivity and a further two categorised as of negligible sensitivity (refer to Appendix 10.2).
- 10.6.7 The heritage assets identified within the Inner Study Area predominantly relate to small-scale pastoral and arable agricultural exploitation of the landscape in the post-medieval and early modern pre-improvement period.

Historic Landscape

10.6.8 There is evidence on the southern side of the Proposed Development site of extensive preimprovement agricultural exploitation of the landscape. In the 18th and 19th centuries as landowners sought increased production from land, fields were amalgamated and formalised, becoming rectilinear and associated with steadings and other farm buildings. Pre-improvement field systems tend to follow the natural topography, are irregular and often survive in more marginal land. In HLAmap, four irregular, but distinct areas of pre-improvement medieval cultivation are

- recorded within the limits of the site, focussed around the Windrow Burn; the lower slopes of Broomerside Hill; east of High Broomerside and on the northern bank of the Podowrin Burn.
- 10.6.9 The land around High Broomerside is considered an example of this improved landscape, with rectilinear field systems focussed on the High Broomerside farmstead (HH03). Such smaller-scale farming landscapes have been replaced by much larger-scale farming since the second half of the 20th century.
- 10.6.10 The remainder of the Proposed Development site is recorded as Rough Grazing or heather moorland from the 20th century.

Unknown Archaeological Sites - Statement of Archaeological Potential

- 10.6.11 In terms of archaeological and historical development, the Proposed Development area can be divided between the northern part of the site around the summits of Hagshaw Hill, Common Hill and Broomerside Hill, and the lower lying southern part of the site around the Smithy and Windrow Burns and centred on Broomerside.
- The northern part of the site is currently occupied by the Existing Development. The landscape of this area is unimproved rough grazing and geologically areas of peat have been recorded. There are no heritage assets in the upland part of the site and no archaeological features were recorded during the cultural heritage assessment and archaeological mitigation associated with the Existing Development or the Hagshaw Hill Extension. While peat has the potential to mask and preserve prehistoric archaeological deposits, the archaeological potential for the northern, upland part of the site is considered to be low.
- 10.6.13 The 23 heritage assets identified within the boundaries of the Proposed Development are all located in the lower lying, southern part of the site. These features predominantly relate to small-scale, preimprovement agricultural practices dated to the post-medieval and early modern periods. The lack of intensive agricultural practices, deep ploughing and formalisation of fields around the Smithy and Windrow Burns means there is potential for post-medieval archaeological deposits to survive on site.

Middle Study Area

Overview

10.6.14 The Middle Study Area extends up to 10 km from the Inner Study Area. Regionally and Nationally important heritage assets within this 10 km buffer are included in the assessment. Full, detailed lists of these assets can be viewed in Table 2 of the Gazetteer found in Appendix 10.2. A summary of the heritage assets identified is discussed below by their designation. These summaries are not exhaustive and cover only key heritage assets.

Scheduled Monuments

- 10.6.15 There are ten Scheduled Monuments located within the Middle Study Area.
- 10.6.16 A series of four prehistoric burial cairns (HH112, HH114, HH115 and HH116) are located on the summits of prominent hills to the south of the Proposed Development. These monuments are dated through typology to the Late Neolithic or Early Bronze Age.
- 10.6.17 The 14th century St Bride's Church (HH102) in Douglas is the closest Scheduled Monument to the Proposed Development.
- 10.6.18 The 18th and 19th century industrial heritage of the surrounding landscape is attested by the presence of the Glenbuck Ironworks (HH101), Craighead Mill (HH108) and Muirkirk Tar Works (HH117).

Listed Buildings

Category A Listed Buildings

- 10.6.19 There are only two Category A Listed Buildings within the Middle Study Area.
- 10.6.20 St Bride's Chapel in Douglas (HH103) is linked to the St Bride's Church (HH102) Scheduled Monument, but whereas the Scheduling protects the area around the roofed Gothic Church Choir, renovated in 1878, the Listing protects the fabric of the structure.
- 10.6.21 The James Earl of Angus Monument (HH104) is a bronze statue of James, Earl of Angus erected in 1892 to commemorate the 200th anniversary of the raising of the Cameronian regiment. The statue is situated to face the landscape from which the regiment was mustered.

Category B Listed Buildings

- 10.6.22 There are 33 Category B Listed Buildings located within the Middle Study Area of the Proposed Development.
- 10.6.23 Five of these sites are located within the Douglas Conservation Area and accordingly are numbered as sub-sets of HH105 and will be considered together with the Conservation Area. This is also the approach taken for the two Category B Listed Buildings located in the Lesmahagow Conservation Area (HH116).
- 10.6.24 In general, the Category B Listed Buildings date from the mid-18th century and although Birkhill (HH119) has a date stone of 1692, the core likely dates to the 18th and 19th centuries. The B Listed heritage assets are mainly to the north and east of the Proposed Development, with a notable cluster of 11 monuments around Lesmahagow to the north-east. Five of these are associated with HH133 Birkwood House. Only the Muirkirk Institute (HH127), Muirkirk Old Parish Church (HH128) and Auchengilloch Monument (HH129) lie to the west of the Proposed Development.
- Seven of the B Listed heritage assets are bridges, six of which date from the early 18th century to the early 19th century. The seventh, the Milton Bridge in Lesmahagow (HH140), dates to 1938.

Conservation Areas

- 10.6.26 As discussed above (paragraph 10.6.23), there are two Conservation Areas located within the Middle Study Area.
- 10.6.27 The Douglas Conservation Area (HH105) encompasses five Category B Listed Buildings as well as a Scheduled Monument (HH102, paragraph 10.6.17) and two Category A Listed Buildings (HH103 and HH104, paragraphs 10.6.20 and 10.6.21). While the B Listed Buildings are assessed as part of the Conservation Area, the Scheduled Monument and A Listed Buildings warrant independent assessment.
- 10.6.28 The Lesmahagow Conservation Area (HH116) encompasses two Category B Listed Buildings, both of are assessed as part of the Conservation Area.

Non-Designated Heritage Assets

- 10.6.29 There are four heritage assets identified from the SMR located within the Middle Study Area which are considered to be potentially nationally significant. This assessment is based on the WoSAS NSR alongside professional judgement.
- 10.6.30 Two, possibly three of these sites are prehistoric monuments. The Mosscastle Hill Cairn (HH141) is part of a group of funerary monuments located on hilltops to the south of the Proposed Development (see paragraph 10.6.16), while the Lightshaw Standing Stone (HH145) is located in pasture to the west. The Auchensaugh Hill Enclosure (HH143) is an earthwork of uncertain provenance, interpreted both as a prehistoric ritual monument or a stock enclosure.
- 10.6.31 Andershaw Chapel (HH142), burial ground and well is also of unknown date, but based on records and the condition of the monument, may have origins in the Early Medieval of Medieval periods.

Outer Study Area

- 10.6.32 The Outer Study Area extends between 10 km and 20 km around the Proposed Development site. Nationally and internationally important heritage assets within this area were assessed for potential setting impacts arising from the Proposed Development.
- 10.6.33 145 heritage assets were identified within the Outer Study Area. These comprise:
 - One World Heritage Site (WHS);
 - Three Gardens and Designed Landscapes from the HES Register of Gardens and Designed Landscapes;
 - Two Battlefields from the HES Inventory of Historic Battlefields;
 - 93 Scheduled Monuments; and
 - 46 Category A Listings covering 100 individual buildings.
- 10.6.34 The New Lanark WHS (HH201) is located approximately 13 km to the north-east of the nearest proposed turbine. The boundary of the WHS incorporates two Scheduled Monuments and 71 A Listed Buildings covered across 23 separate listings. In keeping with the methodology employed for Conservation Areas, the heritage assets were assessed as part of the WHS, with asset IDs assigned as a sub-set of HH201.

10.7 Potential Effects

10.7.1 Potential effects on the Cultural Heritage assets identified are discussed below under the three different phases of the Proposed Development.

Construction

Temporary Effects

- 10.7.2 The construction phase may result in temporary effects on the setting of monuments due to the presence of site machinery and vehicles such as cranes.
- 10.7.3 The heritage assets within the inner study area largely relate to the potential for buried archaeological remains. Their setting is limited to their immediate location. Temporary construction impacts to setting of assets in the inner study area will not result in significant effects.
- 10.7.4 Given the relatively short duration of the proposed construction programme (24 months) and the distance from the Proposed Development no impact resulting in a significant effect is deemed to occur on heritage assets in the Middle and Outer Study Areas.

Permanent Effects

- 10.7.5 The physical impact arising from turbine and infrastructure construction has the potential to impact upon heritage assets; and to alter the buried environment of archaeological deposits. This may result in accelerated rates of deterioration and subsequently, the removal of deposits. Effects during the construction phase are predominantly physical and within the Inner Study Area.
- 10.7.6 Physical impacts upon heritage assets as a result of construction activities have the potential to be substantial and have an adverse effect unless effectively mitigated.
- 10.7.7 The location of heritage assets recorded on the NRHE, SMR and map regression were available during the design process for the Proposed Development. A degree of aerial image interpretation was also available and where possible the results of this preliminary assessment were incorporated into the iterative design process of the layout for the Proposed Development. This input was important in ensuring the least possible impact upon identified Historic Environment assets and was particularly important in avoiding physical impacts on HH03 High Broomerside (refer to Figure 10.1 and Chapter 2).

- 10.7.8 The magnitude of impact was defined by a correlation of the proposed construction and site infrastructure areas with the locations of the sites on the ground. Using Table 10.4 to cross reference the sensitivity assigned to each site with the predicted magnitude of impact, allowed the significance of effect (without mitigation) to be ascertained (Table 10.5). Where two alternatives are provided in Table 10.4, professional judgement has been used to define the level of significance as outlined in 10.5.22.
- 10.7.9 In Table 10.5, question marks appear in parenthesis (?). This has two meanings:
 - When sites are newly recorded during the Baseline Assessment and the names for the site are suggested based on nearest topographical features; and
 - After asset descriptions where the site is newly discovered and the 'type' is based on professional judgement and is not definitive.

Table 10.5 - Significance of Effect on heritage assets identified within the Inner Study Area during the Construction Phase

| Asset ID | Site Name | Туре | Proposed Impact | Sensitivity | Magnitude | Potential Effect | Significant? |
|----------|-----------------------------------|---|--|---|------------|---------------------|--------------|
| HH01 | Common Hill / Hagshaw Hill | Shieling Huts | No physical impact predicted. | low | no change | neutral | no |
| HH02 | Smithy Burn / Hagshaw Hill | Enclosure | hysical impact predicted. low ocated in close proximity to Turbine 4, onstruction of turbine foundation and/or ardstanding likely to result in physical mpact. | | major | minor | no |
| HH03 | Broomerside / High Broomerside | Settlement, Farmstead, Fermtoun | No physical impact predicted. Located in close proximity to access track between Turbines 2 and 3. | ated in close proximity to access track | | minor | no |
| HH04 | Windrow Burn / Hagshaw Hill | Enclosure, Field Bank, Shieling | No physical impact predicted on enclosure, although possible physical impact on line of earthen bank by the access track between Turbines 5 and 6. | low | negligible | minor | no |
| HH05 | Podowrin Burn | Field Boundary, Hut, Rig and Furrow | No physical impact predicted. | low | no change | neutral | no |
| НН06 | Podowrin Burn | Enclosure, Farmstead, Field boundary, Rig and Furrow, Sheepfold | lo physical impact predicted. low n | | no change | neutral | no |
| HH07 | Smithy Burn | Enclosure, Field Boundary, Rig and Furrow, Shieling Huts | No physical impact predicted. | low | no change | neutral | no |

| Asset ID | Site Name | Туре | Proposed Impact | Sensitivity | Magnitude | Potential Effect | Significant? |
|----------|----------------------|------------------------------------|---|--------------|-----------|---------------------|--------------|
| HH08 | Broomerside | Settlement, Farmstead, Fermtoun | Potential physical impact predicted. | low | major | moderate | yes |
| | | | Exact location unknown, but the site as located by WoSAS, is physically impacted by the southern access road. | | | | |
| HH09 | Broomerside (?) | Animal enclosure (?) | No physical impact predicted. | low | no change | neutral | no |
| HH10 | Broomerside (?) | Animal enclosure (?) | No physical impact predicted. Located in close proximity to met mast. | negligible | no change | neutral | no |
| HH11 | Broomerside (?) | Animal enclosure (?) | No physical impact predicted. Located in close proximity to met mast. | low no chang | | neutral | no |
| HH12 | Broomerside (?) | Sheep Shelter | Physical impact predicted. | negligible | major | minor | no |
| | | | Heritage asset removed by placement of construction compound. | | | | |
| HH13 | Broomerside Hill (?) | Earthen Bank | Physical impact predicted. | low | moderate | minor | no |
| | | | Cut by access track between Turbines 4 and 5. | | | | |
| HH14 | Broomerside Hill (?) | Rig and Furrow | Physical impact predicted. | low | minor | minor | no |
| | | | Impacted by access track between Turbines 4 and 5. | | | | |
| HH15 | Smithy Burn (?) | Linear bank | No physical impact predicted. | low | no change | neutral | no |
| HH16 | Avermarks Hill (?) | Enclosure, field system | No physical impact predicted. | low | no change | neutral | no |
| HH17 | Avermarks Hill (?) | Enclosure, field system | No physical impact predicted. | low | no change | neutral | no |

| Asset ID | Site Name | Туре | Proposed Impact | Sensitivity | Magnitude | Potential Effect | Significant? |
|----------|----------------------|---|--|---|-----------|---------------------|--------------|
| HH18 | Podowrin Burn (?) | Enclosure, field system | Physical impact predicted. low mod Eastern end impacted by proposed Turbine 1 and associated crane pad. | | moderate | minor | no |
| HH19 | Podowrin Burn (?) | Enclosure, field system, farmstead | Physical impact predicted. Western enclosure impacted by proposed Turbine 1 and associated crane pad. Access track between Turbines 1 and 2 will also impact on southern limit of site. | d. low cted by proposed crane pad. Access 1 and 2 will also | | moderate | yes |
| HH20 | Podowrin Burn (?) | Rig and furrow | Physical impact predicted. Cut by proposed access track between Turbines 1 and 2. | low | minor | minor | no |
| HH21 | High Broomerside (?) | Earthen Bank | No physical impact predicted. | low | no change | neutral | no |
| HH22 | High Broomerside (?) | Earthen Bank | Physical impact predicted. Elements of asset removed by placement of laydown area. | | | minor | no |
| HH23 | Broomerside (?) | Enclosure with internal compartment (?) | No physical impact predicted. | low | no change | neutral | no |

- 10.7.10 The assessment outlined in Table 10.5 shows that there will be potential permanent physical impacts on seven heritage assets, with possible physical impacts on a further two (HH08 and HH04) which cannot be adequately located with precision at present.
- 10.7.11 Of the 23 heritage assets identified within the site boundary, the significance of potential effect (i.e. prior to implementation of mitigation) as shown in Table 10.5 can be summarised as follows:
 - twelve heritage assets with a neutral effect;
 - nine heritage assets with a minor effect; and
 - two heritage assets with a moderate effect.
- 10.7.12 In line with the methodology outlined in paragraph 10.5.21, the two effects considered moderate can be considered 'significant'.
- 10.7.13 Of those heritage assets anticipated to be physically impacted, the significance of effect on the Podowrin Burn enclosure/farmstead (HH19) is considered moderate. The earthworks in this area indicate the presence of a possible pre-improvement farmstead, enclosure and field system. Construction of Turbine 1 and associated infrastructure will have a major impact on this heritage asset.
- 10.7.14 The access track of the Proposed Development directly overlies the SMR record for Broomerside, the 'fermtoun' or small farming settlement (HH08) recorded on William Roy's Military Survey of 1750. However, as the location is plotted from an early map, this record may not accurately depict the exact location of Broomerside, but provides an indication that remains may exist in this vicinity. While this must be considered a possible physical impact on an area of archaeological potential, the excavation associated with the relatively narrow access track will be comparatively small. However, the significance of effect on this asset is considered moderate.

Operation

- 10.7.15 The primary (potentially adverse) effect of the Proposed Development during operation will be the potential visual impact upon the setting of Cultural Heritage assets. Due to the nature of the Proposed Development ambient impacts including noise and changes to air quality would not impact on heritage assets.
- 10.7.16 How the setting of a heritage asset is appreciated and assessed is outlined from paragraph 10.5.11. Simply put, it is the manner in which the surroundings of a monument contribute to the way in which it is appreciated and understood in the landscape. Heritage assets cannot be replaced and any change to their condition or setting has the potential to have an adverse effect on their sensitivity. It is important to understand how heritage assets relate to their surroundings, and how any change to these surroundings may affect them. Inter-visibility between the Proposed Development and individual heritage assets has the potential to impact upon their settings and result in changes which may adversely affect how a monument is appreciated and understood.

Inner Study Area

- 10.7.17 The heritage assets within the inner study area relate to the potential for buried archaeological remains. Their setting is limited to their immediate location. There is not anticipated to be a significant effect on the setting of these heritage assets arising from the operation of the Proposed Development.
- 10.7.18 The southern, lower lying part of the Inner Study Area around the Podowrin, Smithy and Windrow Burns contains a pre-improvement historic landscape. This area contains evidence for both pastoral and agrarian farming, elements of which may date to the medieval period. The predicted physical impacts on these remains during the construction phase are discussed above (Table 10.5), but there is potential for impacts on the setting of this landscape arising from the Proposed Development.
- 10.7.19 This landscape is considered to be locally significant or of low sensitivity. While the turbines will alter the visual appearance of this part of the local landscape, the placement of the turbines and

site infrastructure still allow the landscape to be read and appreciated. It will retain its local character and research potential. The magnitude of impact is predicted to be minor, resulting in a negligible significance of effect.

Middle Study Area

- 10.7.20 Of the 44 heritage assets identified in the Middle Study Area (see Table 2 of the Gazetteer in Appendix 10.2), a total of six can be scoped out based on analysis of the ZTV which shows no visible turbines. These sites are not included in Table 10.6 and are not discussed further in the assessment:
 - HH110 Craighead Mill, Lesmahagow;
 - HH111 Thorril Castle;
 - HH122 Wolfcrooks Bridge;
 - HH126 Crawfordjohn Parish Church and Churchyard;
 - HH129 Auchengilloch Monument; and
 - HH143 Auchensaugh Hill Enclosure
- 10.7.21 The magnitude of impact on the setting of each heritage asset was defined by professional judgement. The setting of each site was established and a combination of site visits, ZTVs, wireframes and other research used to assess the predicted magnitude of impact. Using Table 10.4 to cross reference the sensitivity assigned to each site with the magnitude of impact allowed the significance of effect (without mitigation) to be ascertained. The results of this process are summarised in Table 10.6. Where two alternative effects are provided in Table 10.4, professional judgement is used to define the level of effect as outlined in 10.5.22.

Table 10.6- Significance of Effects on the setting of heritage assets identified within the Middle Study Area (prior to mitigation)

| Asset ID | Site Name | Designation | Distance to nearest turbine | Turbines theoretically visible | Sensitivity | Magnitude | Potential effect | Significant? |
|----------|--|--|-----------------------------|--------------------------------------|-------------|------------|---------------------|--------------|
| HH101 | Glenbuck Ironworks | Scheduled Monument | 3.71 km | 1-3 | high | no change | neutral | no |
| HH102 | St Bride's Church, Douglas | Scheduled Monument | 3.67 km | 11-14 | high | minor | minor | no |
| HH103 | St Bride's Chapel | Category A Listed Building | 3.67 km | 11-14 | high | minor | minor | no |
| HH104 | Douglas, Earl of Angus Monument | Category A Listed Building | 3.53 km | 11-14 | high | minor | minor | no |
| HH105 | Douglas | Conservation Area (incl. five Category B Listed Buildings) | 3.69 km | 11-14 | medium | negligible | negligible | no |
| HH106 | Mansefield, Douglas | Category B Listed Building | 3.63 km | 11-14 | medium | no change | neutral | no |
| HH107 | Springhill, Douglas | Category B Listed Building | 3.46 km | 11-14 | medium | negligible | negligible | no |
| HH108 | New Mains, Douglas | Category B Listed Building | 4.97 km | 11-14 | medium | no change | neutral | no |
| HH109 | Statue of a Highlander, West Toun, Coalburn | Category B Listed Building | 4.09 km | 11-14 | medium | no change | neutral | no |
| HH112 | Wildshaw Hill, cairn | Scheduled Monument | 9.31 km | 11-14 | high | minor | minor | no |
| HH113 | Thirstone, Stone Circle | Scheduled Monument | 8.73 km | 8-14 | high | minor | minor | no |
| HH114 | Auchensaugh Hill, cairn | Scheduled Monument | 6.10 km | 11-14 | high | minor | minor | no |
| HH115 | Cairn Kinny, cairn | Scheduled Monument | 8.15 km | 11-14 | high | minor | minor | no |

| Asset ID | Site Name | Designation | Distance to nearest turbine | Turbines theoretically visible | Sensitivity | Magnitude | Potential effect | Significant? |
|----------|----------------------------------|--|-----------------------------|--------------------------------------|-------------|------------|---------------------|--------------|
| HH116 | Cairn Table, cairns | Scheduled Monument | 8.21 km | 11-14 | high | minor | minor | no |
| HH117 | Muirkirk, tar works, mines | Scheduled Monument | 9.80 km | 0-14 | high | no change | neutral | no |
| HH118 | Lesmahagow | Conservation Area (incl. two Category B Listed Buildings) | 8.78 km | 0-14 | medium | no change | neutral | no |
| HH119 | Birkhill including Stable Wing | Category B Listed Building | 7.67 km | 11-14 | medium | no change | neutral | no |
| HH120 | Old Poniel Bridge | Category B Listed Building | 6.93 km | 11-14 | medium | no change | neutral | no |
| HH121 | Folkerton Mill | Category B Listed Building | 7.67 km | 11-14 | medium | no change | neutral | no |
| HH123 | Happendon Lodge | Category B Listed Building | 6.25 km | 11-14 | medium | no change | neutral | no |
| HH124 | Uddington Village, Konisberg | Category B Listed Building | 7.01 km | 11-14 | medium | no change | neutral | no |
| HH125 | Castle Mains | Category B Listed Building | 6.52 km | 11-14 | medium | negligible | negligible | no |
| HH127 | Muirkirk Institute, Furnace Road | Category B Listed Building | 9.69 km | 4-7 | medium | no change | neutral | no |
| HH128 | Muirkirk Old Parish Church | Category B Listed Building | 8.89 km | 8-10 | medium | no change | neutral | no |
| HH130 | Auchlochan Bridge | Category B Listed Building | 6.59 km | 11-14 | medium | no change | neutral | no |
| HH131 | South Lodge, Birkwood House | Category B Listed Building | 7.74 km | 11-14 | medium | no change | neutral | no |
| HH132 | West Gate Lodge, Birkwood | Category B Listed Building | 8.24 km | 11-14 | medium | no change | neutral | no |

| Asset ID | Site Name | Designation | Distance to nearest turbine | Turbines theoretically visible | Sensitivity | Magnitude | Potential effect | Significant? |
|----------|--|----------------------------|-----------------------------|--------------------------------------|-------------|------------|---------------------|--------------|
| HH133 | Birkwood House | Category B Listed Building | 8.20 km | 11-14 | medium | no change | neutral | no |
| HH134 | Birkwood Walled Garden | Category B Listed Building | 8.27 km | 4-7 | medium | no change | neutral | no |
| HH135 | Birkwood, Bridge over the River Nethan | Category B Listed Building | 8.38 km | 8-10 | medium | no change | neutral | no |
| HH136 | Bank, 8 Abbeygreen, Lesmahagow | Category B Listed Building | 9.01 km | 11-14 | medium | no change | neutral | no |
| HH137 | Abbeygreen Church and Manse, Lesmahagow | Category B Listed Building | 9.06 km | 11-14 | medium | no change | neutral | no |
| HH138 | Old Road Bridge, River Nethan, Lesmahagow | Category B Listed Building | 9.09 km | 11-14 | medium | no change | neutral | no |
| HH139 | Old Road Bridge, River Nethan, Lesmahagow | Category B Listed Building | 9.35 km | 11-14 | medium | no change | neutral | no |
| HH140 | Milton Bridge, Lesmahagow | Category B Listed Building | 9.51 km | 11-14 | medium | no change | neutral | no |
| HH141 | Mosscastle Hill Cairn | None – SMR Site | 7.65 km | 11-14 | high | negligible | minor | no |
| HH142 | Andershaw, Chapel, Burial Ground, Well | None – SMR Site | 5.98 km | 11-14 | high | no change | neutral | no |
| HH144 | Lightshaw Standing Stone | None – SMR Site | 7.25 km | 8-10 | high | negligible | minor | no |

- 10.7.22 Table 10.6 shows that of the 44 heritage assets identified in the Middle Study Area:
 - Six shared no inter-visibility with the Proposed Development and were scoped out;
 - Ten have been assessed as resulting in a minor effect;
 - Three have been assessed as resulting in a negligible effect; and
 - 25 have been assessed as resulting in a neutral effect;
- 10.7.23 As shown in Table 10.6 no significant effects are predicted and the effect of the Proposed Development on the 44 heritage assets within the Middle Study Area is considered not to be significant in line with the methodology outlined in paragraph 10.5.21.

Outer Study Area

- 10.7.24 The Outer Study Area is located between 10 km and 20 km from the Proposed Development. Given this distance and the nature of the intervening landscape which includes woodland, vegetation cover, buildings and infrastructure etc., the assessment found that none of the heritage assets within the Outer Study Area would be adversely impacted by the Proposed Development.
- 10.7.25 Specific assessment of any potential impact on the New Lanark WHS is included within Appendix 10.3. In summary, the lack of intervisibility between Proposed Development and the key parts of the WHS, including the nationally important designated assets within the WHS, mean that the magnitude of impact on the WHS is negligible. The visual impacts will be limited to the fringes of the wider WHS boundary and there will be no impact on the core area. Intervisibility from these peripheral areas will not impact upon the setting of the WHS. The impact on the setting of the New Lanark WHS has therefore been assessed as negligible (see Appendix 10.3), resulting in a minor significance of effect and (not significant).
- 10.7.26 Remaining heritage assets within the Outer Study Area were scoped out from further assessment due to a combination of distance and the nature of the intervening topography.

Decommissioning

- 10.7.27 The Proposed Development is anticipated to be in situ for 30 years, following which the turbines will be removed and the landscape reinstated to its original form. It is not anticipated that decommissioning would involve extensive ground excavation or affect any land that has not previously been disturbed in the construction of the Proposed Development. Therefore, the potential for any further disturbance of heritage assets during the decommissioning process is low, and will have no more than a negligible effect.
- 10.7.28 Setting impacts will be reversible following the decommissioning process.

10.8 Mitigation

10.8.1 Although mitigation is only considered to be required for effects on heritage assets assessed as moderate or higher (and therefore significant), mitigation measures are proposed where possible and practicable for other effects assessed as greater than negligible. There are numerous forms which mitigation can take. These are discussed below.

Mitigation for physical impacts

General

- Any mitigation would first have to be agreed with WoSAS in its role as adviser to SLC in matters pertaining to cultural heritage. Proposals would be completed in line with a Written Scheme of Investigation (WSI) submitted to WoSAS for approval. The WSI outlines the methods and standards to be adhered to by the archaeological contractor. All works will be completed in accordance with Guidance Documents produced by the Chartered Institute for Archaeologists.
- 10.8.3 The exact scope of mitigation works will be agreed with WoSAS in advance of development.

- 10.8.4 Prior to site works commencing, it is recommended that a toolbox talk will be delivered to the appointed contractors. As a minimum, this will discuss specific historical and archaeological issues identified during the Cultural Heritage Assessment, including the location of heritage assets, buffer zones, areas requiring specific mitigation and potential for unrecorded archaeological features to survive.
- 10.8.5 The toolbox talk will also cover the need to report any potentially important archaeological features located during site works. Any archaeological objects which are noted or recovered by the contractor during site works must be reported to the appointed Archaeological Clerk of Works in the first instance.

Known Sites

- 10.8.6 The preferred mitigation option for heritage assets is preservation in situ. While preliminary results of the Cultural Heritage assessment were considered at an early stage of the design process, it was not practically possible to avoid all areas of the site where potential heritage assets were identified. as a result there is the potential for a small number to be physically impacted by the Proposed Development.
- 10.8.7 It is anticipated that some, or all of the following measures will be required to mitigate the effects of the Proposed Development on heritage assets located within the Proposed Development site.

Fencing

10.8.8 Prior to work commencing on site, identified heritage assets will be clearly delineated on the ground by a professional archaeologist. Heritage assets will be marked with a suitable buffer to avoid accidental incursion by construction traffic or excavation. These buffers will be periodically monitored during construction works by a professional archaeologist.

Evaluation

- 10.8.9 Archaeological evaluation may be required at the enclosures HH19 identified north of the Podowrin Burn. This feature will be physically impacted by the Proposed Development, although the identified location for the turbine and crane pad avoids the main focus of the enclosures and the site of the possible farmstead.
- 10.8.10 An evaluation would provide information as to the nature of the archaeological features and the level of work required to record these remains in advance of development.

Excavation

- 10.8.11 Those sites physically impacted by the Proposed Development may require formal archaeological excavation in advance of site works. This is particularly the case for enclosure HH19 and field system HH18.
- 10.8.12 Such excavation must be proportionate to the relative significance of the site and level of disruption anticipated during construction of the Proposed Development.

Recording during monitoring

10.8.13 For those field systems and earthen banks bisected by the infrastructure of the Proposed Development (such as HH14 and HH22), it is recommended that these features are recorded under watching brief conditions during the site works.

Unknown sites

- 10.8.14 The archaeological potential of the southern half of the site along the axis formed by proposed turbines 4, 5 and 6, has been identified as high for post medieval pre-improvement agricultural remains.
- 10.8.15 To mitigate any potential damage to unrecorded sub-surface archaeological deposits in this area, an archaeological watching brief should be maintained during all ground-breaking work in the south

of the site and along the access track. The watching brief will ensure that any impacts on recorded features is subject to appropriate levels of mitigation, while allowing for the identification of any previously unrecorded archaeological sites and ensuring these are appropriately recorded during site works.

10.8.16 No watching brief is proposed for the northern part of the Proposed Development site, despite the breaking of new ground around turbines 7, 8 and 11 as well as their respective access tracks. No heritage assets were recorded in the northern part of the site and no archaeological deposits uncovered during the watching brief associated with the Existing Development or Hagshaw Hill Extension.

Mitigation of Effects on Setting

- 10.8.17 The assessment identified no effects on the setting of heritage assets which are considered significant in terms of the outlined methodology. Therefore, no mitigation is required to reduce or offset effects to a non-significant level.
- 10.8.18 Where effects were identified which are not considered significant under the applied methodology, no practicable mitigation measures can be recommended which would reduce the predicted operational effects.

10.9 Residual Effects

Construction

10.9.1 The completion of a programme of archaeological mitigation works during the construction phase would mitigate the effect on the cultural heritage resources within the limits of the Proposed Development. As such, no significant residual effects are anticipated in relation to cultural heritage.

Operation & Decommissioning

10.9.2 During the operational lifetime of the Proposed Development, the residual effects on heritage assets within the study area will be as described in Section 10.7 of this chapter, as no mitigation measures are applicable. Decommissioning of the wind farm following the completion of its operational life, would return the landscape to its pre-development position.

10.10 Cumulative Assessment

Assessment

- 10.10.1 EIA Regulations require consideration of cumulative impacts, which are those which result from incremental changes caused by other past, present or reasonably foreseeable actions viewed in conjunction with the Proposed Development. Cumulative impacts can be described as:
 - Impacts from several developments, which individually might be insignificant, but when considered together could result in a significant cumulative impact; these are termed Type 2 cumulative impacts.
- 10.10.2 SPP identifies the need to consider development proposals against a full range of cumulative factors, specifically mentioning cumulative impacts on the historic environment 'including scheduled monuments, listed buildings and their settings' (Scottish Government 2014).
- 10.10.3 To assess Type 2 cumulative impacts, other development proposals need to be at a committed stage in order for an appropriate level of certainty and scheme information to be available. Development proposals can therefore only be assessed in combination with other developments which are sufficiently advanced in the consenting/implementation process.
- 10.10.4 For the Proposed Development, consideration of operational, consented and in-planning schemes are assessed, but consideration is also applied to cumulative effects arising from further

developments which are currently in scoping but sufficient design information is known in order to allow assessment (namely Cumberhead Revised and Douglas West Extension).

Cumulative Developments

Adjacent Developments

- 10.10.5 Potential effects on cultural heritage assets are determined through consideration of the effects on each individual asset. A cumulative effect arises when a heritage asset would be affected by more than one development or proposal. If considered in isolation, these developments may not have a significant adverse effect on a heritage asset but taken collectively this can change. In practice, cumulative effects can arise when elements of multiple developments can be viewed as individual sites, rather than a cluster of developments not readily distinguishable.
- 10.10.6 Cumulative effects are considered for wind farm developments currently in the planning system as well as those that are permitted or operational. In addition, two developments at the scoping phase are also considered. The Douglas West Extension is located immediately north of the Proposed Development and is proposed by the same Applicant as the Proposed Development, while a revision to the approved Cumberhead Wind Farm is also in scoping and located to the north and north-east of the Proposed Development. Primary consideration is given to those that lie within 5 km of the Proposed Development turbine locations as shown in Table 10.7.

Table 10.7: Large wind farm developments within 5 km of the Proposed Development Turbines

| Development | Turbines | Status |
|------------------------|----------|-------------|
| Cumberhead | 11 | Approved |
| Cumberhead Revised | 14 | Scoping |
| Dalquhandy | 15 | Approved |
| Douglas West | 13 | Approved |
| Douglas West Extension | 13 | Scoping |
| Galawhistle | 22 | Installed |
| Glentaggart | 5 | Application |
| Hagshaw Hill Extension | 20 | Installed |
| Hazelside Farm | 2 | Installed |
| Nutberry | 6 | Installed |
| Poniel | 3 | Approved |

The Wider Landscape

10.10.7 A plan of cumulative wind farm developments within 5 km of the Proposed Development (Figure 3.2) shows these are predominantly clustered around the Proposed Development, with only the area to the south and south-east being free of adjacent operational, approved, planned turbines or developments in scoping. From the list provided in Table 10.7, only the Poniel and Glentaggart wind farms lie outwith this cluster.

- 10.10.8 The addition of the Proposed Development to the wind farm cluster west of Douglas has the potential to have a cumulative effect upon the setting of heritage assets which share intervisibility with the site. However, it is notable that the location within the existing wind farm cluster means that it is unlikely this will be seen as a new, separate turbine cluster from the identified heritage assets. While the height and elevation of the turbines may make these more prominent in certain views, they will be seen as part of an existing turbine array alongside neighbouring developments rather than a collection of independent and visually separate wind farms.
- 10.10.9 Key heritage assets have been identified in the wider landscape for which cumulative wireframes have been produced.

HH102 & HH103 St Bride's Church and Chapel, Douglas

- 10.10.10 As discussed in Appendix 10.3, the setting of HH102 & HH103 is inward and reflective. Oblique views of turbines from the Existing Development or the Hagshaw Hill Extension are presently visible from areas of the graveyard.
- 10.10.11 A wireframe from St Bride's Church (Figure 10.4) shows the Proposed Development visible within the larger wind farm cluster to the west. Considered alongside the Hagshaw Hill Extension and Hazelside Farm turbines as well as the consented Douglas West Wind Farm, the Proposed Development would form part of an existing turbine array, extending this slightly to the south.
- 10.10.12 Despite the limited extension of the turbine array it is considered that there would be no adverse cumulative effect caused by the Proposed Development. Views in this direction already contain operational or consented turbines and the Proposed Development will be seen to lie beyond the Hagshaw Hill Extension from this location. The addition of the turbines will not alter the existing setting. The overall magnitude of change upon Sites HH102 and HH103, and the significance of effect, therefore remains minor.

HH104 Douglas, Earl of Angus Monument

- 10.10.13 In respect of the Earl of Angus Monument Site (HH104), Hagshaw Hill Extension is visible on the horizon to the south-west, as are the Hazelside Farm turbines. Current vegetation cover will screen views of the Proposed Development to a degree, and the principal views from the Earl of Angus Monument towards the north will remain intact.
- 10.10.14 The wireframe (Figure 10.5) reveals the Proposed Development to predominantly sit within an existing turbine array formed by the Hagshaw Hill Extension, and Hazelside Farm turbines. While the turbines of the Proposed Development are prominent against the skyline to the south-west, this is in a location which contains existing turbines.
- 10.10.15 There is no predicted adverse cumulative effect as a result of the Proposed Development and the overall significance of effect upon Site HH104 remains minor.

HH112 Wildshaw Hill, Cairn

- 10.10.16 Wireframes from the Wildshaw Hill Cairn (Figure 10.6) show the Proposed Development visible to the north-west, embedded within and set against a backdrop of operational turbines from Galawhistle Wind Farm, Hagsahw Hill Extension, the Hazelside Farm turbines and Nutberry Wind Farm.
- 10.10.17 While the turbines of the Proposed Development will be taller, these do not alter the existing baseline or setting of the monument and the cumulative effect of the Proposed Development is not considered significant.

HH113 Thirstone Stone Circle

10.10.18 The cumulative wireframe (Figure 10.7) for Thirstone Stone Circle shows the Proposed Development visible to the north-west, with five turbines theoretically visible above hub height. It is unclear how many will be actually be visible given vegetation levels, but the turbines are a new addition to the skyline.

- 10.10.19 While there is a marginal incremental increase in the cumulative impact on the stone circle, the immediate setting of the monument will remain unaffected and the turbines are sufficiently distant that they will not be prominent on the skyline.
- 10.10.20 The cumulative effect of the Proposed Development on Thirstone Stone Circle is not considered significant.

HH114 Auchensaugh Hill, Cairn

- 10.10.21 The cumulative wireframe (Figure 10.8) for HH14 shows the Proposed Development set within the existing turbine array to the north-west. The turbines will be visible against the skyline but set within and backdropped by the existing turbine array of the Galawhistle, Nutberry, Hagshaw Hill Extension and Hazelside Farm turbines. This array continues to the north-west with Auchrobert Wind Farm visible in the distance, with the consented turbines of the Douglas West Wind Farm, Cumberhead Wind Farm, Dalquhandy Wind Farm and others increasing the depth of the array.
- 10.10.22 The Proposed Development will reinforce the presence of turbines in this part of the view, but the immediate setting of Auchensaugh Hill would remain unchanged, as would inter-visibility with key neighbouring sites.
- 10.10.23 The predicted cumulative effect of the Proposed Development in conjunction with operational and consented turbines is not considered significant.

HH115 Cairn Kinny, Cairn

- 10.10.24 The cumulative wireframe for Cairn Kinny (Figure 10.9) shows that the Proposed Development would be visible to the north. Presently there is an extensive wind farm array with operational turbines from the Galawhistle Wind Farm, Hagshaw Hill Extension and Hazelside Farm turbines extending in an arc along the northern vista. Consented developments at Cumberhead, Dalquahnady and Douglas West further extend this array to both the north-west and north-east. The Proposed Development is located in the centre of this array. The Existing Development presently occupies this site, filling what will otherwise be a gap between the visible turbines of the Hagshaw Hill Extension. Many of these turbines are spread along the horizon, with those of the Proposed Development being the tallest in the view but not out of keeping with the existing wind farm landscape.
- 10.10.25 The hilltop setting of Cairn Kinny would remain unchanged, as would key views and intervisibility with neighbouring contemporary sites. Given the distance and placement of the turbines and the existing baseline, it is not felt that the Proposed Development would sufficiently alter the character, quality or context of the monument.
- 10.10.26 The predicted cumulative effect of the Proposed Development in conjunction with operational and consented turbines is not considered significant

HH116 Cairn Table, cairns

- 10.10.27 The cumulative wireframe (figure 10.10) shows that the Proposed Development will be visible to the north-east of HH116. The turbines will be the tallest in the existing turbine array, with six at hub height above the skyline. However, the Proposed Development will be embedded within the existing turbines of Galawhistle Wind Farm, the Hagshaw Hill Extension and the Hazelside Farm turbines, set against a backdrop of the proposed Douglas West Extension.
- 10.10.28 The Proposed Development will form part of an existing wind farm cluster, leaving the existing setting of the monument essentially unchanged, resulting in a cumulative effect that is not significant.

Conclusion

10.10.29 The discussion of the monuments above has shown that the cumulative effects of the Proposed Development are considered to be negligible and not significant.

10.11 Summary

- 10.11.1 This chapter considered the potential impacts of the Proposed Development on cultural heritage assets and was prepared in cognisance of all relevant legislation, policy and guidelines.
- 10.11.2 To inform the Proposed Development, a baseline study was undertaken using all readily available information sources within the set parameters of Inner, Middle, and Outer Study areas. Sources accessed included HES databases of designated Historic Monuments; the SMR as maintained by WoSAS; the NRHE; maps held by NLS; and aerial images held by NCAP. The study was supplemented by a comprehensive walkover survey of the Proposed Development site designed to identify previously unknown heritage assets.
- 10.11.3 The baseline study identified 29 heritage assets within the Inner Study Area, of which 23 are within the Proposed Development site boundary. A further 44 heritage assets with potential to be affected by the Proposed Development were identified within the Middle Study Area, while in the Outer Study Area, 145 heritage assets were identified.
- 10.11.4 Correlation between the assets identified within the site boundary and the layout of the Proposed Development identified the potential for some physical impacts. It is anticipated that nine heritage assets could be physically impacted by development to some degree, with another which has potential to be impacted. The predicted effect on two of these heritage assets is considered moderate, and thus significant in terms of EIA regulations and the applied methodology. The effects on the remainder are considered minor adverse or negligible.
- 10.11.5 Mitigation measures are outlined to reduce the effects arising from direct impacts on heritage assets, with each investigated through a programme of archaeological mitigation to be agreed in advance with WoSAS. The archaeological programme of work is likely to involve evaluation, formal excavation and a watching brief as applicable. Known heritage assets will also be clearly delineated by a qualified archaeologist in advance of site works.
- 10.11.6 The archaeological potential of the Proposed Development site is considered high for preimprovement post-medieval features across the southern part of the site. To mitigate against impacts on unrecorded features, an archaeological watching brief will be maintained during all ground-breaking works affecting this area.
- 10.11.7 Analysis of heritage assets within the three Study Areas showed that there would be no significant effect on the setting of individual heritage assets. Equally cumulative assessment of the Proposed Development in conjunction with similar operational, consented and proposed developments in the local area (as well as the revised Cumberhead development and proposed Douglas West Extension development, both currently in scoping) showed that there will be no significant cumulative effects caused by the Proposed Development.
- 10.11.8 The study has shown that while the effect on two identified sites will be significant as a result of physical impact, this can be suitably mitigated and reduced through a programme of archaeological mitigation. Recommendations are provided for best practice where there is potential for physical impacts which the assessment did not consider significant in terms of the applied methodology. While some residual effects will remain both where the sites are physically impacted and where inter-visibility between turbines and heritage assets results in effects on setting, these residual effects are not considered significant.

Table 10.8 – Summary Table

| Description of Effect | Significance of Potential Effect | | Mitigation Measure | Significance of Residual Effect | | Comparison with the Existing Development |
|--|----------------------------------|------------------------|--|---------------------------------|------------------------|--|
| | Significance | Beneficial/ Adverse | | Significance | Beneficial/ Adverse | |
| During Construction / Decommissioni | ng | | | | | |
| 12 heritage assets – No direct physical impacts predicted (HH01, HH05, HH06, HH07, HH09, HH10, HH11, HH15, HH16, HH17, HH21, HH23) | Neutral | N/A | N/A | Neutral | N/A | No material difference. These sites have been identified during the assessment but will remain unaffected by the Proposed Development. |
| One heritage asset not predicted to be directly impacted, but located near site works (HH03) | Minor | Adverse | Those heritage assets located close to Proposed Development will be appropriately delineated to avoid unnecessary disturbance. | Negligible | Adverse | No material difference. If impacts on this site are avoided during development, through the committed mitigation measures, there will be no difference between the Existing Development and Proposed Development. |
| Ten heritage assets – Direct physical impacts predicted HH02, HH04, HH12, HH13, HH14, HH18, HH20, HH22 HH08, HH19 | Minor Moderate | Adverse | A programme of archaeological mitigation to be agreed with WoSAS. This may include evaluation, excavation and recording during an archaeological watching brief. | Minor | Adverse | There is potential for removal of heritage assets which would otherwise be left undisturbed, but this would be undertaken in accordance with an archaeological watching brief |

| Description of Effect | Significance of Potential Effect | | Mitigation Measure | Significance of Residual Effect | | Comparison with the Existing Development |
|--|----------------------------------|------------------------|--|---------------------------------|------------------------|--|
| | Significance | Beneficial/ Adverse | | Significance | Beneficial/ Adverse | |
| Direct impact: Potential for damage to previously unrecorded features | Moderate | Adverse | An archaeological watching brief will be maintained during all ground-breaking works across the southern part of the site This will ensure any previously unrecorded archaeological deposits are identified and recorded. | Minor | Adverse | There is potential for damage to unrecorded archaeological deposits which would otherwise be left undisturbed., but this would be undertaken in accordance with an archaeological watching brief |
| During Operation | | | | | | |
| No predicted impact on the setting of 31 heritage assets, including six scoped out of assessment due to no predicted inter-visibility (HH101, HH106, HH108-HH111, HH117-HH124, HH126-HH140, HH142, HH143) | No Change | Neutral | N/A | No Change | Neutral | No material difference. |

| Description of Effect | Significance of Potential Effect | | Mitigation Measure | Significance o | f Residual | Comparison with the Existing Development |
|---|----------------------------------|------------------------|--------------------|-----------------------|------------------------|---|
| | Significance | Beneficial/ Adverse | | Significance | Beneficial/ Adverse | |
| Potential impact on the setting of 13 heritage assets (HH102, HH103, HH104, HH105, HH107, HH112, HH113, HH114, HH115, HH116, HH125, HH141, HH144) | Negligible - Minor | Adverse | N/A | Negligible - Minor | Adverse | The turbines will be more prominent than the Existing Development, with more turbines set against the skyline. However, the effect on setting as a result of the Proposed Development is assessed as not significant. |
| Potential impacts on the setting of the new Lanark World Heritage Site (HH201) | Minor | Adverse | N/A | Minor | Adverse | The turbines of the Proposed Development are larger and will have greater inter-visibility with the agricultural land on the periphery of the WHS boundary, but the turbines will not be visible from the core of the WHS and will not create a setting impact. |

| Description of Effect | Significance of Potential Effect | | | Significance of Residual Effect | | Comparison with the Existing Development |
|--|----------------------------------|------------------------|-----|---------------------------------|------------------------|--|
| | Significance | Beneficial/ Adverse | | Significance | Beneficial/ Adverse | |
| Potential cumulative effect on heritage assets arising from placement of the Proposed Development alongside other wind farms | Minor - Negligible | Adverse | N/A | Minor - Negligible | Adverse | There will be a slight incremental increase on the setting of monuments due to the increase in turbine height, but in general the turbines will be embedded within an existing array, replacing existing turbines. |

10.12 References

<u>Aerial Photography</u>

Aerial photography consulted include:

| Sortie | Source | Date | Frames |
|-------------------|-------------------|------------|--------|
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 3258 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 3259 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 3260 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 3261 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 3262 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 4066 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 4067 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 4068 |
| 106G/Scot/UK/0087 | NCAP | 10/05/46 | 4069 |
| ASS/61289 | NCAP | 05/05/89 | 0050 |
| ASS/61289 | NCAP | 05/05/89 | 0051 |
| - | Google Earth | 31/12/2004 | - |
| - | Google Earth | 29/09/2013 | - |
| - | www.bing.com/maps | - | - |

<u>Cartographic</u>

All historic maps are available from the National Library of Scotland (www.maps.nls.uk). Maps consulted during the map regression include:

| Cartographer | Year | Map Name (common) |
|-------------------------------|---------|---|
| Timothy Pont | 1596 | Glasgow and the County of Lanark – Pont 34 |
| Joan Blaeu | 1654 | The nether ward of Clyds-dail and Glasco |
| Joan Blaeu | 1654 | The Upper Ward of Clyds-dayl |
| Herman Moll | 1745 | The Shire of Clydesdale or Lanerk |
| William Roy | 1747-55 | Military Survey of Scotland |
| James Dorret | 1750 | A general map of Scotland and islands thereto belonging |
| Charles Ross | 1773 | Map of the Shire of Lanark |
| William Forrest | 1816 | The County of Lanark from actual survey |
| John Ainslie | 1821 | Ainslie's Map of the Southern Part of Scotland |
| John Thomson, William Johnson | 1822 | Northern Part of Lanarkshire. Southern Part |
| Ordnance Survey | 1859-60 | 25 inch to 1 mile Lanarkshire (Douglas), Sheet XLI.3 |
| Ordnance Survey | 1857-60 | 25 inch to 1 mile Lanarkshire (Douglas), Sheet XLI.4 |
| Ordnance Survey | 1858-64 | Lanarkshire, Sheet XXXVII |
| Ordnance Survey | 1896-97 | 25 inch to 1 mile Lanarkshire, Sheet XLI.3 |
| Ordnance Survey | 1896-97 | 25 inch to 1 mile Lanarkshire, Sheet XLI.4 |
| Ordnance Survey | 1896-98 | Lanarkshire, Sheet XXXVII.SE |
| Ordnance Survey | 1909-10 | 25 inch to 1 mile Lanarkshire, Sheet XLI.3 |
| Ordnance Survey | 1896-97 | 25 inch to 1 mile Lanarkshire, Sheet XLI.4 |
| Ordnance Survey | 1909-12 | Lanarkshire, Sheet XXXVII.SE |
| Ordnance Survey | 1960-62 | 1:1,250 N S7929 – A (includes Douglas) |

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Historic Environment Scotland (2018), National Record of the Historic Environment – CANMORE. Available at www.canmore.org.uk and through www.pastmap.org.uk/map. Accessed from 06-27 August 2018

Historic Environment Scotland (2018), Historic Land-use Assessment Map. Available at www.hlamap.org.uk. Accessed on 10 August 2018

National Library of Scotland. Various Historic Maps. Available at www.maps.nls.uk. Accessed from 06-27 August 2018

Scottish Archaeological Research Framework (2018). Available at: www.scottishheritagehub.com. Accessed on 07 August 2018

WoSAS. Sites and Monuments Record. Available at: https://south-ayrshire.maps.arcgis.com/apps/webappviewer/index.html?id=8adfda758cb24d889ffa632eb51f46 46 and used in conjunction with SMR datasets secured from WoSAS. Accessed from 06 – 27 August 2018

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