Chapter 10 Cultural Heritage

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List of Abbreviations

Abbreviation		Description
AOD	Above Ordnance Datum	Absolute height above sea level
CHVP	Cultural Heritage Viewpoint	A location agreed with consultees for the production of visualisations (photomontage, photowire or wireline) to support the cultural heritage assessment
CIfA	Chartered Institute for Archaeologists	The leading professional body representing archaeologists working in the UK
DPSG	Designation Policy and Selection Guidance (HES, April 2019)	This document sets out the policy and selection guidance used by Historic Environment Scotland when they designate historic sites and places at the national level. This document supports the Historic Environment Policy for Scotland (HEPS)
EIAR	Environmental Impact Assessment Report	Environmental Impact Assessment Report
GDL	Garden and Designed Landscape	Grounds consciously laid out for artistic effect, an important element of Scotland's historic environment and landscape. HES select nationally important sites for the Inventory under the terms of the Ancient Monuments and Archaeological Areas Act 1979
GPS	Global Positioning System	Global Positioning System

HA	Heritage Asset	Previously unrecorded heritage assets within the Proposed Development Site have been assigned a number (prefixed HA for Heritage Asset
HER	Historic Environment Record	Regional database of known heritage assets
HES	Historic Environment Scotland	The lead public body established to investigate, care for and promote Scotland's historic environment
IEMA	Institute of Environmental Management and Assessment	The global professional body for individuals and organisations working, studying or interested in the environment and sustainability
IHBC	Institute for historic Building Conservation	The professional body for building conservation practitioners and historic environment experts working in the UK
LB	Listed Building	A building placed on the four statutory lists maintained by HES
LPA	Local Planning Authority	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment	Landscape and Visual Impact Assessment
MHG	N/A	Prefix to unique HER heritage asset reference numbers
NIDL	Non-Inventory Designed Landscapes	Non-Inventory Designed Landscapes
NPF4	National Planning Framework 4	A statement of Scottish Government policy on how nationally important land use planning matters should be addressed
NRHE	National Record of the Historic Environment	National database of known heritage assets
NTS	Non-Technical Summary	Non-Technical Summary to EIAR
OSA	Outer Study Area	The study area beyond the Proposed Development Site boundary used in the Cultural Heritage chapter to identify heritage assets whose cultural significance may be affected by development within their setting
OEMP	Operational Environmental Management Plan	Provides specific guidance in relation to the management activities associated with the facility, to minimise impacts on and provide long term enhancements for ecological and ornithological receptors.
PAN	Planning Advice Note	PAN 2/2011: Planning and Archaeology provides technical advice to planning authorities and developers on dealing with archaeological remains
SM	Scheduled Monument	A legally protected cultural heritage site
WSI	Written Scheme of Investigation	An agreed method statement

ZTV	Zone of Theoretical Visibility	A computer-generated tool to identify the likely (or theoretical) extent of visibility of a development

Glossary

Abbreviation	Definition
The Applicant	Fred. Olsen Renewables Limited
Artefact	An item of archaeological interest
Baseline	In EIA, 'baseline conditions' are the environmental conditions in existence just before the occurrence of an impact – i.e. they are the conditions that would be affected. Baseline conditions are not the same as existing conditions, which are those in existence at the time of carrying out the EIA, because, this may be some time in advance of the occurrence of an impact and environmental conditions may change in the intervening period.
BGS	British Geological Survey
Bronze Age	The period of human activity between 2,500 BC and 700 BC
Construction Environmental Management Plan (CEMP)	A plan prepared by a contractor before the start of construction work, detailing 'environmental aspects' that may be affected by the construction work and management methods to prevent any such effects. The CEMP would include methods and site management practices to be applied to prevent generation of nuisance dust, accidental pollution events and a range of other potential sources of accidental damage to the environment, and response and reporting procedures to minimise the damage in the event of a pollution incident.
Construction activity	Vegetation removal, topsoil stripping, temporary storage of materials, ground excavation and remodelling, bare earth, movement of construction vehicles and tall features such as cranes and other construction plant.
Desk study	A collation and review of relevant existing information available from published, archival or online sources, including for instance geological and hydrogeological mapping, historical maps, environmental records etc., allowing an assessment of risks to the human and environmental receptors to be undertaken.
Earthworks	The moving of soil or rock to reconfigure the topography of a site.
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of drawing together by the developer, in a systematic way, a description of the development and information relating to of the likely significant environmental effects arising from a proposed development.
EIA Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 Regulation .
Fieldwalking survey	Method of systematic non-intrusive survey involving walking across a ploughed field along transects to collect archaeological artefacts.

Geology	Geology is the study of solid earth, the material of which it is composed (principally rocks) and the processes by which they evolve.
Geophysical survey	Method of non-intrusive investigation involving the use of magnetometers to identify fluctuations in the earth's magnetic field which might indicate the presence of archaeological remains. Burnt remains and metals are best identified through this method of survey.
Heritage asset	An item of heritage interest, for example an historic building or an archaeological find.
Historic Environment Records (HER)	A database maintained by individual counties or local authorities, containing records of archaeological sites, historic buildings and other aspects.
Historic landscape assessment types (HLA)	Historic landscape character types are distinctive and repeated combinations of components defining generic historic landscapes such as 'ancient woodland' or 'parliamentary enclosure'. The types used in this study were defined based on evidence from historic maps and other sources.
Iron Age	The period of human activity between 700 BC and 43 AD
Made Ground	Ground created by infilling an area with material taken from elsewhere; typically, reworked soils, rubble, gravel, sand or former waste material e.g. ash.
Medieval	The period of human activity between 1066 AD and 1550 AD.
Mesolithic	Middle Stone Age. The period of human activity between 10,000 BC and 4,500 BC.
Metal detector survey	Method of intrusive investigation involving the use of metal detectors to locate buried metal objects.
Mitigation	Measures which have the purpose of avoiding, reducing or compensating for adverse environmental impacts. It may also include measures to create environmental benefits. Mitigation applied to offset identified adverse effects as a result of the Proposed Development are presented separately to proposed enhancement measures,
Modern	The period of human activity from 1900 to the present day.
Natural Power	The lead consultant EIA co-ordinator is Natural Power Consultants Limited.
Neolithic	New Stone Age. The period of human activity between 4,500 BC and 2,500 BC.
Ordnance Datum	The standard measure of sea level in the UK, from which all heights are measured for mapping purposes.
Palaeolithic	Old Stone Age. The period of human and pre-human activity before around 10,000 BC.
Photomontage	A photorealistic image of the scheme, based on a 3D computer model of the scheme, overlaid onto a base photograph to visually represent the scheme. Features that would be removed as part of the scheme are removed from the base photograph.
Post-medieval	The period of human activity between 1550 AD and 1900 AD.

Prehistoric	The period before the year 43 AD.
Proposed Development	The proposed Lees Hill Renewable Energy Park as described in Chapter 4, Volume 2 of this EIAR.
Proposed Development Site	The project development area within the site boundary as shown edged red in Figure 1.2, Volume 3a.
Receptor	The existing environmental feature that would be affected by an impact – for instance, the population of a protected species, or a specific archaeological site, or the occupants of a residential property.
Roman	The period of human activity between 43 AD and 410 AD.
Saxon	The period of human activity between 410 AD and 1066 AD.
Statutory consultees	Organisations that FORL is required to consult under the EIA Regulations 2017.

10. Cultural Heritage

10.1. Introduction

10.1.1. This chapter presents the findings of the assessment of likely significant effects with respect to Cultural Heritage associated with the construction and operation of the Proposed Development.

10.1.2. A heritage asset is any element of the historic environment which has cultural significance. Both discrete features, and extensive landscapes defined by a specific historic event, process or theme, can be defined as heritage assets; assets may overlap or be nested within one another. Designated assets include Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields and Historic Marine Protected Areas. Other assets may also be locally designated through policies in the Local Development Plan.

10.1.3. The majority of heritage assets are not designated. Some non-designated assets are recorded in Historic Environment Records (HERs) maintained by local authorities and other agencies. Many heritage assets are currently unrecorded, and the information contained in HERs is not definitive, since they may include features which, for instance, have been entirely removed, or are of uncertain location, dubious identification, or negligible importance. The identification of non-designated heritage assets is therefore to some extent a matter of professional judgement.

10.1.4. The objectives of the chapter are to:

- Describe the baseline; the location, nature and extent of any known heritage assets or areas of archaeological potential which may be affected by the Proposed Development;
- Describe the assessment methodology and significance criteria used in completing the assessment;
- Describe the potential effects, including cumulative effects;
- Describe the mitigation measures proposed to address likely significant effects (if required); and
- Assess the residual effects remaining following the implementation of mitigation (if required).

10.1.5. Some heritage assets may coincide with visual receptors or landscape character areas, which are assessed in **Chapter 6: Landscape and Visual Impact Assessment (LVIA)**. In such cases, it is important to recognise the difference in approach between these two topics. The cultural heritage assessment addresses effects on the cultural heritage significance of heritage assets, which may result from, but are not equivalent to, visual impacts. The LVIA focuses more on subjective present experience and amenity, while cultural heritage has a focus on understanding of cultural significance, both intellectually and emotionally, across past, present and future generations. An effect on a landscape character area does not therefore equate to an effect on the cultural significance of heritage assets within it.

10.2. Legislation Policy and Guidance

Legislation

10.2.1. Relevant legislation and guidance documents have been taken into account as part of this Cultural Heritage assessment.

10.2.2. Scheduled Monuments, Listed Buildings and Conservation Areas are protected by statute.

10.2.3. Legislation regarding Scheduled Monuments is contained within The Ancient Monuments and Archaeological Areas Act 1979. Legislation regarding Listed Buildings and Conservation Areas is contained in The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

10.2.4. The 1979 Act makes no reference to the settings of Scheduled Monuments. The 1997 Act does, however, place a duty on the consenting authority with respect to Listed Buildings and Conservation Areas, and their settings.

10.2.5. Section 59 of the 1997 Act states:

"*In considering whether to grant planning permission for development which affects a listed building or its setting, a planning authority or the Scottish Ministers, as the case may be, shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses*."

10.2.6. Section 64 of the 1997 Act states:

"In the exercise, with respect to any buildings or other land in a conservation area, of any powers under [the planning Acts]……., special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area."

10.2.7. The Proposed Development does not include buildings or other land in a conservation area, so section 64 does not apply.

10.2.8. The Historic Environment Scotland Act 2014 defines the role of the public body, Historic Environment Scotland (HES), and the processes for the designation of heritage assets, consents and rights of appeal.

Planning Policy

10.2.9. The historic environment is defined as "*the physical evidence for past human activity. It connects people with place, and with the traditions, stories, and memories associated with places and landscapes*" in 'Our Past, Our Future: The Strategy for Scotland's Historic Environment' (2023, 10) and in National Planning Framework 4 (NPF4) as *"the physical evidence for human activity that connects people with place, linked with the associations we can see, feel and understand*" (Annex F – Glossary of definitions). The historic environment includes "*individual assets, related settings and the wider cultural landscape*" ('Our Place in Time: The Historic Environment Strategy for Scotland', 2014). These documents present the Scottish Government's strategy for the protection and promotion of the historic environment.

10.2.10. NPF4 Part 1 A National Spatial Strategy for Scotland 2045 describes how the future spatial development of Scotland can contribute to planning outcomes. It shows where there will be opportunities for growth and regeneration, investment in the low carbon economy, environmental enhancement, and improved connections across the country.

10.2.11. Historic Environment Policy for Scotland (HEPS, HES, 2019a) defines the Historic Environment and Scottish Government Policy. It sets out the vision and key principles on how to care for and protect Scotland's historic environment including designations of ancient monuments, principles for scheduling and listing, contexts for conservation areas, marine protected areas, gardens and designated landscapes, historic battlefields and consents and advice.

National Planning Framework

NPF4 – Part 2: Historic Assets and Places Policy 7

10.2.12. The Scottish Government's planning policies in relation to the historic environment are set out in NPF4 Part 2 National Planning Policy (The Scottish Government, February 2023). Policy 7: Historic assets and places states:

"Policy Intent: To protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places."

10.2.13. NPF4 Policy 7 applies its principles to designated and non-designated assets. Those relevant to the current assessment are as follows:

"a) Development proposals with a potentially significant impact on historic assets or places will be accompanied by an assessment which is based on an understanding of the cultural significance of the historic asset and/or place. The assessment should identify the likely visual or physical impact of any proposals for change, including cumulative effects and provide a sound basis for managing the impacts of change.

Proposals should also be informed by national policy and guidance on managing change in the historic environment, and information held within Historic Environment Records.

c) … Development proposals affecting the setting of a listed building should preserve its character, and its special architectural or historic interest.

h) Development proposals affecting scheduled monuments will only be supported where:

i. direct impacts on the scheduled monument are avoided;

ii. significant adverse impacts on the integrity of the setting of a scheduled monument are avoided; or

iii. exceptional circumstances have been demonstrated to justify the impact on a scheduled monument and its setting and impacts on the monument or its setting have been minimised.

i) Development proposals affecting nationally important Gardens and Designed Landscapes will be supported where they protect, preserve or enhance their cultural significance, character and integrity and where proposals will not significantly impact on important views to, from and within the site, or its setting.

o) Non-designated historic environment assets, places and their setting should be protected and preserved in situ wherever feasible. Where there is potential for non-designated buried archaeological remains to exist below a site, developers will provide an evaluation of the archaeological resource at an early stage so that planning authorities can assess impacts. Historic buildings may also have archaeological significance which is not understood and may require assessment.

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

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

Local Planning Policy

Scottish Borders Council Local Development Plan 1 (2016)

10.2.14. Scottish Borders Council (SBC) approved the Proposed Local Development Plan 2 (LDP2) in 2023, however, LDP1 remains the adopted plan at the time of writing. This sets out land use proposals and planning policies which are intended to guide development and inform planning decisions within the Scottish Borders. Excerpts of policies from Volume 1 of LDP1 and Key Principles from SBC's Supplementary Guidance (SG) relevant to this appraisal are summarised below:

Policy EP7: Listed Buildings

"The Council will support development proposals that conserve, protect, and enhance the character, integrity and setting of Listed Buildings.

All applications for Listed Building Consent or application affecting the setting of Buildings will be required to be supported by Design Statements.

New development that adversely affects the setting of a Listed Building will not be permitted."

Policy EP8: Archaeology

[A] National Archaeological Sites

"Development proposals which would destroy or adversely affect the appearance, fabric or setting of Scheduled Monuments or other nationally important sites will not be permitted unless:

a) the development offers substantial benefits, including those of a social or economic nature, that clearly outweigh the national value of the site, and

b) there are no reasonable alternative means of meeting the development need."

[C] Regional or Local Historic Environment Assets

"Development proposals which will adversely affect an archaeological asset of regional or local significance or their setting will only be permitted if it can be demonstrated that the benefits of the proposal will clearly outweigh the heritage value of the asset.

In all of the above cases, where development proposals impact on a Scheduled Monument, other nationally important assets, or any other archaeological or historical asset, developers may be required to implement detailed investigations, publication and/or public engagement per approved scheme of works.

Any proposal that will adversely affect a historic environment asset or its appropriate setting must include a mitigation strategy acceptable to the Council."

Policy EP10: Gardens and Designed Landscapes

"The Council will support development that safeguards or enhances the landscape features, character or setting of:

a) sites listed in the Inventory of Gardens and Designed Landscapes, or

b) sites included in historic gardens and designed landscapes records.

All development should be carefully sited, be of the highest standards of design using appropriate finishing materials and planting, and be informed by and respectful of the historic landscape structure. Proposals that will result in an unacceptable adverse impact will be refused.

All applications affecting a Garden or Designed Landscape will be required to be supported by a Design Statement."

Scottish Borders Council Supplementary Guidance: Renewable Energy (July 2018)

10.2.15. The Scottish Borders Council Supplementary Guidance (SG) on Renewable Energy includes the Historic Environment in **Chapter 8: Development Management Considerations**.

"The Council requires that potentially significantly adverse impacts / effects to the historic environment through development are identified, defined and evaluated through an Environmental Statement (ES) on Cultural Heritage, must be conducted by an archaeologist working to the standards of the Chartered Institute for Archaeologists (CIfA).

This should predict the direct and indirect impacts on the resource and propose recommendations for mitigation or off-setting. The [EIAR] will identify through desk-based assessment of relevant documents and records all designated and undesignated historic environment assets within the proposal area, and within an area beyond this where there might be indirect impacts to the setting of significant (both designated and undesignated) archaeological sites, historic buildings, historic or archaeological landscapes, battlefields and gardens and designated landscapes. This will normally be supplemented by field survey that will seek to assess the potential impacts to, and current conditions of, known and previously known heritage assets."

10.2.16. The SG goes on to advise in detail how to assess direct and indirect impacts on cultural heritage assets, directing the reader to the HES guidance; Managing Change in the Historic Environment: Setting (2016) for further information on Setting. The section concludes:

"For designated assets, Historic Environment Scotland act as statutory consultee on setting impacts and their views will be balanced along with those of other consultees. Ultimately it is for the planning authority to determine the acceptability of impacts in line with SPP [now NPF4], Local Plan policies and other material considerations."

10.2.17. Local Planning Policy considerations are addressed in detail in EIAR **Chapter 5: Planning and Legal Context** and the Planning Statement submitted as part of the application for the Proposed Development.

Guidance

10.2.18. The methodology for this cultural heritage impact assessment is consistent with the Environmental Impact Assessment Handbook (v5 NatureScot & HES 2018), guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland, Appendix 1 (see Method of Assessment, below).

10.2.19. HES also provides guidance in a series of documents entitled 'Managing Change in the Historic Environment' (MCHE). These provide guidance to planning authorities and stakeholders regarding key issues relating to development, the planning process, and key issues pertaining to the historic environment. Most relevant to this assessment are the guidance notes covering Setting (June 2016 updated 2020), Works on Scheduled Monuments (2016 updated 2020), and Gardens and Designed Landscapes (2016 updated 2020).

10.2.20. HES published Designation Policy and Selection Guidance (DPSG, 2019b) to accompany HEPS. DPSG outlines the policy and selection guidance used by HES when designating sites and places of national importance.

10.2.21. Planning Advice Note (PAN) 2/2011: Planning and Archaeology provides technical advice to planning authorities and developers on dealing with archaeological remains. Among other issues it considers the balance in planning decisions between the preservation in situ of

archaeological remains and the benefits of development; setting; the circumstances under which developers can be required to provide further information, in the form of a field evaluation to allow planning authorities to reach a decision; and measures that can be taken to mitigate adverse impacts.

10.2.22. Standards and Guidance published by the Chartered Institute for Archaeologists (CIfA) have been followed in preparing this assessment, in particular the 'Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment' (2014, updated 2020) and the 'Standard and guidance for historic environment desk-based assessment' (2014, updated 2017 & 2020).

10.2.23. This assessment has also been prepared with reference to IEMA, IHBC and CIfA's July 2021 publication 'Principles of Cultural Heritage Impact Assessment in the UK'. This document presents good practice for assessment of the impact of a development proposal on cultural heritage assets which is consistent with the Principles.

10.2.24. The cultural heritage visualisations supporting this chapter have been produced by the Landscape and Visual team according to NatureScot's 2017 guidance 'Visual Representations of Wind Farms'; the methodology for preparing these is described in **Volume 4, Appendix 6.1: LVIA Visualisation Methodology**.

10.3. Method of Assessment

10.3.1. The approach to assessment in this chapter, described in detail below, is in accordance with relevant guidance on cultural heritage impact assessment provided by: 'Environmental Impact Assessment Handbook' (NatureScot and Historic Environment Scotland, 2018), 'Managing Change in the Historic Environment: Setting' (Historic Environment Scotland, 2020), and the 'Principles of Cultural Heritage Impact Assessment in the UK' (IEMA, IHBC and CIfA, 2021).

10.3.2. This assessment is concerned with impacts upon the cultural significance of heritage assets. It identifies assets that may be affected by the Proposed Development by considering cultural significance including the contribution made by its setting (contextual significance). If an asset's setting is found to make a substantive contribution to its cultural significance, and this contribution is likely to be affected as a result of the Proposed Development, the asset is considered to be 'sensitive' to setting impacts. Assets that are found to be sensitive to the predicted changes in their setting may experience a higher magnitude of impact than an asset that is less sensitive to changes in its setting. The contribution to significance made by intrinsic and associative characteristics, and impacts on those characteristics, will also be a factor in findings of magnitude of impact.

10.3.3. The magnitude of an impact is a measure of the degree to which the cultural significance of an asset is diminished or enhanced by a proposed development. This definition of magnitude of impact, and the assessment methodology as a whole, therefore apply to likely effects resulting from changes to the setting of heritage assets as well as likely physical effects. The EIA significance of this effect is determined by comparing the predicted magnitude of impact with the level of importance assigned to the specific asset (reflecting the greater protection in policy afforded to assets of higher importance).

10.3.4. The cultural heritage assessment has been carried out in the following stages:

- Definition of baseline conditions, comprising desk-based study and visits to heritage assets, leading to the identification of the cultural significance and importance of heritage assets potentially affected by the Proposed Development;
- Assessment of the magnitude of impacts (physical, indirect, setting and cumulative) during construction and operation of the Proposed Development on the cultural

significance of heritage assets, informed by baseline information, site visits, Zone of Theoretical Visibility (ZTV) mapping, wireframes and photomontages;

- Assessment of the significance of effects, broadly a product of the asset's importance and the magnitude of the impact;
- Proposal of mitigation measures to avoid, reduce or offset significant adverse effects; and
- Presentation of residual effects and any monitoring proposals.

Definition of Baseline Conditions

Desk-based Assessment and Site Visits

Study Areas

10.3.5. The Proposed Development Site has been used to gather baseline data on the known and potential archaeological resource to inform the environmental impact assessment. All heritage assets within 1 km of the Proposed Development Site have been identified and considered to inform the assessment of archaeological potential.

10.3.6. Within the Proposed Development Site all heritage assets are considered for construction and operational effects.

10.3.7. Heritage assets have been included in the assessment for nested Outer Study Areas (OSA) based on their level of importance (see **Table 10.1** and **Figure 10.2**) to ensure that likely significant effects are identified. The OSA reflects the fact that the more important the asset, the more likely significant effects could be generated over greater distances. Therefore, the following study area boundaries have been applied:

- Up to 2 km from proposed turbines: Category C Listed Buildings and non-designated heritage assets;
- Up to 5 km from proposed turbines: Category B Listed Buildings, Conservation Areas, and Non-Inventory Designed Landscapes (NIDL);
- Up to 10 km from proposed turbines: Scheduled Monuments, and Inventory Historic Battlefields; and
- Up to 20 km from proposed turbines: Category A Listed Buildings and Inventory Gardens and Designed Landscapes, and Grade I Listed Buildings and Registered Parks and Gardens in England.

10.3.8. In addition, beyond the OSA as defined above, any other heritage asset which is within the ZTV and is considered exceptionally important and/or sensitive to visual change within its setting, and/or where long-distance views from or towards the asset are thought to contribute to cultural significance in the opinion of the assessor or consultees are included in the assessment. This is a rapid screening exercise, based on the approach set out in Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016 updated 2020) and supplemented through scoping and further consultation with statutory consultees.

10.3.9. In the case of this Proposed Development one Scheduled Monument (Smailholm Tower SM13614, located 19.2 km south of the nearest proposed turbine) and one non-designated heritage asset (HER 57449 Twinlaw Cairns located 9.4 km west of the nearest proposed turbine), therefore beyond the above-defined OSAs, were added to the Stage 1 assessment through the consultation process.

Data Sources

10.3.10. Assets within the Proposed Development Site are shown on Volume 3a, **Figure 10.1** with detailed descriptions compiled in a Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**). Cultural Heritage Viewpoints (CHVPs) within the OSA are shown on Volume 3a, **Figure 10.2**.

10.3.11. The baseline for the assessment has been informed by a comprehensive Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**), based on all readily available documentary sources, following the Chartered Institute for Archaeologists' (CIfA) 'Standard and Guidance for historic environment desk-based assessment'. The following sources of information were referred to:

- Designation data downloaded from the Historic Environment Scotland website in August 2023;
- The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints/drawings and manuscripts held by HES;
- Historic Environment Record (HER) data, digital extract received from Scottish Borders Council in April 2022;
- Historic Landscape Assessment (HLA) data, viewed through the HLA Map website (https://hlamap.org.uk/);
- Scottish Government LiDAR data (https://remotesensingdata.gov.scot/data#/map);
- The National Collection of Aerial Photography (NCAP);
- Geological data available online from the British Geological Survey (http://mapapps.bgs.ac.uk/geologyofbritain/home.html);
- Historic maps held by the National Library of Scotland (https://maps.nls.uk/);
- Relevant internet resources, including Google Maps, Google Earth, Bing satellite imagery and PastMap;
- Readily available published sources and unpublished archaeological reports;
- Findings of other environmental topics (LVIA, peat depth, ground conditions, noise and vibration);
- A zone of theoretical visibility (ZTV) and photomontage and wireline visualisations; and
- Field surveys.

10.3.12. A field visit to the Proposed Development Site was undertaken on 18th August 2022 in clear weather conditions. Inspections were made regarding visible extant archaeological features, as well as geographical/geological features which may have a bearing on previous land use and archaeological survival, as well as any exposed geology, soils, and watercourses etc. Health and safety and any other relevant information was considered in terms of constraints to future archaeological investigation.

10.3.13. Field visits for the purposes of setting assessment were undertaken on 14th November 2022 in generally clear weather conditions. Notes were made regarding aspects of heritage assets setting, local topography and site characteristics where intervisibility with other monuments or natural features contributes to significance.

10.3.14. Designated heritage assets are discussed in this EIA Report chapter with the List Entry reference number assigned by HES. Non-designated assets are discussed with the reference number in the HER or the NRHE. Previously unrecorded heritage assets within the Proposed Development Site have been assigned a number (prefixed HA for Heritage Asset). A single asset number can refer to a group of related features, which may be recorded separately in the HER and other data sources.

Potential for Unknown Heritage Assets in the Proposed Development Site

10.3.15. The likelihood that undiscovered heritage assets may be present within the Proposed Development Site is referred to as archaeological potential. Overall levels of potential can be assigned to different areas of the study areas, while recognising that the archaeological potential of any area will relate to particular historical periods and types of evidence. The following factors are considered in assessing archaeological potential:

- The distribution and character of known archaeological remains in the vicinity, based principally on an appraisal of data in the HER;
- The history of archaeological fieldwork and research in the surrounding area, which may give an indication of the reliability and completeness of existing records;
- Environmental factors such as geology, topography and soil quality, which would have influenced land-use in the past and can therefore be used to predict the distribution of archaeological remains;
- Land-use factors affecting the survival of archaeological remains, such as ploughing or commercial forestry planting; and
- Factors affecting the visibility of archaeological remains, which may relate to both environment and land-use, such as soils and geology (which may be more or less conducive to formation of cropmarks), arable cultivation (which has potential to show cropmarks and create surface artefact scatters), vegetation, which can conceal upstanding features, and superficial deposits such as peat and alluvium which can mask archaeological features.

10.3.16. In the Archaeological Potential section of this assessment, the likelihood that the Proposed Development Site may contain undiscovered heritage assets, their likely location and potential density, and their likely level of importance is assessed, described, and justified.

Cultural Significance

10.3.17. Cultural heritage impact assessment is concerned with effects on cultural significance, which is a quality that applies to all heritage assets, and as defined by Historic Environment Scotland (Environmental Impact Assessment Handbook, NatureScot & HES 2018, v5 Appendix 1 page 175), relates to the ways in which a heritage asset is valued both by specialists and the public. The cultural significance of a heritage asset will derive from factors including the asset's fabric, setting, context and associations. This use of the word 'significance', referring to the range of values attached to an asset, should not be confused with the unrelated usage in terms of the conclusions reached on the significance of likely environmental effects in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

10.3.18. Cultural significance is assessed in relation to the criteria in DPSG Annexes 1-6, which are intended primarily to inform decisions regarding heritage designations but may also be applied more generally in identifying the characteristics of a heritage asset, which contribute to its significance (intrinsic, associative, or contextual as outlined below). DPSG Annex 1 is widely applicable in assessing the cultural significance of archaeological sites and monuments, for instance, while the criteria in Annex 2 can be used in defining the architectural or historic interest of buildings, whether listed or not. Cultural significance of assets is considered in terms described in DPSG Annex 1:

- Intrinsic Characteristics- those inherent in the monument i.e., "*how the physical remains of a site or place contribute to our knowledge of the past*".
- Associative Characteristics – subjective associations, including those with current or past aesthetic preferences i.e., "*how a site or place relates to people, practices, events and/or historic and social movements*".
- Contextual Characteristics – those relating to the monument's place in the landscape or in the body of existing knowledge i.e., "*how a site or place relates to its surroundings and/or to our existing knowledge of the past*".

Contribution of Setting to Cultural Significance

10.3.19. The characteristics which contribute to an asset's cultural significance may include elements of its setting. Setting is defined in 'Managing Change in the Historic Environment: Setting'

(HES 2016 updated 2020, Section 1) as "*the way the surroundings of a historic asset or place contribute to how it is understood, appreciated and experienced*". The setting of a heritage asset is defined and analysed according to Stage 2 of the three-stage approach promoted in 'MCHE: Setting', with reference to factors listed on pages 9-10 (see below paragraph). The relevance of these factors to the understanding, appreciation and experience of the asset determines how, and to what extent, an asset's cultural significance derives from its setting. All heritage assets have settings; however, in some cases, setting may contribute very little to the asset's significance, or only certain elements of the setting may be relevant.

10.3.20. Factors of setting that can contribute to cultural significance have been considered during the Stage 1 Assessment for the identification of assets that may be affected by the Proposed Development. The approach was based on Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016 updated 2020) as follows:

- *"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."*

10.3.21. The above range of factors were taken into consideration when determining which assets are sensitive to change within their setting and thus may be impacted by the Proposed Development.

10.3.22. Operational wind energy developments (and any other existing developments that may also be relevant) are therefore described as part of the existing baseline in the impact assessment section.

Integrity

10.3.23. In relation scheduled monuments NPF4 Policy 7(h) states that "Development proposals affecting scheduled monuments will only be supported where: ii. significant adverse impacts on the integrity of the setting of a scheduled monument are avoided." NPF4 does not define 'integrity', therefore for the purposes of the assessment, HES recommend that the following shared definition for the concept of integrity of setting is used: "changes to factors of setting that contribute to cultural significance such that the understanding, appreciation and experience of an asset are not adequately retained will affect the integrity of setting."

Importance of Heritage Assets

10.3.24. The importance of a heritage asset is the overall value assigned to it based on its cultural significance, reflecting its statutory designation or, in the case of non-designated assets, the professional judgement of the assessor (**Table 10.1**).

10.3.25. Heritage Assets are defined as "Features, buildings or places that provide physical evidence of past human activity identified as being of sufficient value to this and future generations to merit consideration in the planning system" (NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5, p.122). Thus, any feature which does not merit consideration in planning decisions due to its cultural significance may be said to have negligible heritage importance; in general, such features are not considered as heritage assets and are excluded from the assessment (see accompanying Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**).

Table 10.1: Criteria for Assessing the Importance of Heritage Assets

Importance	Criteria
Very High	Assets valued at an international level, e.g. World Heritage Sites and other assets of equal international importance that contribute to international research objectives
High	Assets valued at a national level, e.g. Scheduled Monuments, Category A Listed Buildings, Inventory Gardens and Designed Landscapes, Inventory Battlefields, Historic Marine Protected Areas, some conservation areas and non-designated assets that meet the relevant criteria for designation in the opinion of the assessor. Category B or C-listed buildings where the existing designation does not adequately reflect their value, in the opinion of the assessor.
Medium	Assets valued at a regional level, e.g. Category B Listed Buildings, some conservation areas and non-designated assets of similar value in the opinion of the assessor. Category C-listed buildings where the existing designation does not adequately reflect their value, in the opinion of the assessor.
Low	Assets valued at a local level, e.g. Category C Listed Buildings, some conservation areas and non-designated assets of similar value in the opinion of the assessor.

Source: NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, Figure 2

Assessment of Magnitude of Impacts

Effects of the Proposed Development

10.3.26. Effects of the Proposed Development on the historic environment can arise through direct physical impacts, indirect impacts, or impacts on setting:

- Direct physical impacts describe those activities of the Proposed Development that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works and will only occur within the Site boundary.
- Indirect impacts describe secondary processes, triggered by the Proposed Development, that lead to the degradation or preservation of heritage assets. For example, changes to hydrology may affect archaeological preservation; or changes to the setting of a building may affect the viability of its current use and thus lead to dereliction.
- An impact on the setting of a heritage asset occurs when the presence of the Proposed Development changes the surroundings of a heritage asset in such a way that it affects (beneficially or adversely) the cultural significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to lead to significant effects during the prolonged operational stage of the Proposed Development.

10.3.27. Likely significant direct or indirect effects on unknown heritage assets are discussed in terms of the risk that a significant effect could occur. The level of risk depends on the level of archaeological potential combined with the nature and scale of disturbance associated with construction activities and may vary between high and negligible for different or for the Proposed Development as a whole.

10.3.28. Likely significant effects on the settings of heritage assets are identified from an initial desk-based appraisal of data from HES and the HER, and consideration of current maps and aerial

images. Photomontage and wireline visualisations have been prepared to illustrate changes to key views, and to aid assessment where potential setting effects have been identified (**CHVPs 01-12**, Volume 3c, **Figures 10.4-10.15** and **LVIA VPs 01, 02, 06, 09, 12, 14 & 16**, Volume 3c, **Figures 6.12, 6.13, 6.17, 6.20, 6.23, & 6.27**). The visualisations have been produced by the Landscape and Visual team and the methodology for preparing these is described in Volume 4, **Appendix 6.1: LVIA Visualisation Methodology**.

Cumulative Effects

10.3.29. A cumulative effect occurs where the magnitude of the combined effect of two or more developments is greater than that of the developments considered individually.

10.3.30. The impact assessment for the Proposed Development on its own merits identifies the impact of that development alone upon cultural significance of heritage assets relative to the currently existing baseline that includes all operational and under construction wind farms. The cumulative impact assessment, using the same criteria of impact magnitude (as defined in **Table 10.2** below), considers a potential baseline scenario to assess the impact of the Proposed Development combined with the impact of wind farm developments that are consented but not yet built and those that are currently at application stage (for which sufficient detail is known).

10.3.31. Developments considered as part of the cumulative assessment are identified from the agreed list presented in **Chapter 6: LVIA**.

10.3.32. Cumulative effects are considered in this chapter for heritage assets where an effect of Minor or greater significance has been identified as a result of the Proposed Development. The purpose of this threshold is to ensure that the assessment remains proportionate and focused on those cases where there is potential for a significant effect (in EIA terms) to arise were the Proposed Development to be consented.

10.3.33. Visualisations supporting this chapter from cultural heritage viewpoints (CHVPs) include cumulative developments (**CHVPs 01-12**, Volume 3c, **Figures 10.4-10.15** and **LVIA VPs 01, 02, 06, 09, 12, 14 & 16**, Volume 3c, **Figures 6.12, 6.13, 6.17, 6.20, 6.23, & 6.27**).

Assessment of the Magnitude of Impacts on Cultural Significance

10.3.34. The magnitude of an impact is a measure of the degree to which the cultural significance of a heritage asset will potentially change as a result of the Proposed Development (NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, para 42).

10.3.35. Conclusions of the assessed magnitude of impacts are a product of the consideration of the elements of an asset and its setting that contribute to its cultural significance and the degree to which the Proposed Development would change these contributing elements. The assessment therefore reflects the varying degrees of sensitivity of different assets to change brought about by different types or scale of possible developments. The extent to which a heritage asset is sensitive to change within its setting (contextual significance), and thus the extent to which its cultural significance may be impacted through change to this setting, will be reflected in findings regarding the magnitude of impact, as will impacts on intrinsic and associative characteristics.

10.3.36. This definition of magnitude and assessment methodology applies to likely effects resulting from change in the setting as well as likely physical effects on the fabric of an asset.

10.3.37. The methodology adopted for the identification and assessment of potential effects resulting from change in setting follows the approach set out in Managing Change in the Historic Environment: Setting (Historic Environment Scotland, 2016 updated 2020) and the Environmental Impact Assessment Handbook (NatureScot & HES, 2018, v5 Appendix 1). The

guidance sets out three stages in assessing the effect of development on the setting of a heritage asset or place as follows:

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

10.3.38. It is important to draw a distinction between Landscape and Visual Impact Assessment and assessment of the setting of a heritage asset. In LVIA, magnitude of impact would be directly related to the level of visual change, whereas cultural heritage assessment is concerned with visual change only where it affects the contribution that setting makes to an asset's cultural significance. As a result, there is no simple relationship between change and impact on setting and this is reflected in the advice given in Stages 2 and 3 in HES's 'Managing Change in the Historic Environment: Setting' guidance (2020, pages 9-10). It is necessary to understand how setting contributes to significance (Stage 2) before assessing how change would impact on setting (Stage 3). Therefore, the magnitude of an impact resulting from change within setting is not a direct measure of the visual prominence, scale, proximity or other attributes of the Proposed Development itself, or of the extent to which the setting itself is changed. Moreover, it is necessary to consider whether, and to what extent, the characteristics of the setting which would be changed contribute to the asset's cultural significance. This methodology is in accordance with NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, paras 42 and 43.

10.3.39. Magnitude of impact on cultural significance of heritage assets is assessed as substantial/moderate/slight/negligible/no impact, and adverse or beneficial, using the criteria in **Table 10.2** as a guide. In assessing the likely effects of a development, it is often necessary to take into account various impacts which affect an asset's cultural significance in different ways. For instance, there may be adverse effects on an asset's fabric and beneficial effects on cultural significance resulting from change in setting arising from a development which would not otherwise occur in a 'do-nothing' scenario; a heritage asset that might otherwise degrade over time could be preserved or consolidated as a consequence of a development. The impact assessment identifies beneficial and adverse impacts for consideration separately.

Table 10.2: Criteria for Assessing the Magnitude of Impacts on Cultural Significance of Heritage Assets

Magnitude of Impact	Criteria
Substantial Beneficial	Preservation of the asset in situ where it would be completely or almost completely lost in the do-nothing scenario.
Moderate Beneficial	Changes to key elements of the asset's fabric or setting that result in its cultural significance being preserved, where they would otherwise be lost, or restored.
Slight Beneficial	Changes that result in elements of the asset's fabric or setting that detract from its cultural significance being removed.
Negligible / No Impact	Changes to fabric or setting that leave significance unchanged.
Slight Adverse	Changes to the elements of the fabric or setting of the heritage asset that contribute to its cultural significance such that this is slightly altered.
Moderate Adverse	Changes to the elements of the fabric or setting of the heritage asset that contribute to its cultural significance such that this is substantially altered.
Substantial Adverse	Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of its cultural significance, such that it may no longer

be considered a heritage asset.

Source: NatureScot & HES 2018, Environmental Impact Assessment Handbook, v5 Appendix 1, Figure 1

Mitigation

10.3.40. Assessment of impacts is an iterative part of the design process. For any identified effect the preferred mitigation option is always to avoid or reduce effects through design (embedded mitigation), or through precautionary measures such as fencing off heritage assets during construction works to avoid accidental direct effects (additional mitigation). Details of the design iteration process are contained within **Chapter 3: Site Selection and Design Evolution**.

10.3.41. Effects which cannot be mitigated by design may lead to adverse direct or indirect physical effects which may be mitigated by an appropriate level of survey, excavation, recording, analysis and publication of the results, in accordance with a written scheme of investigation (additional mitigation).

Assessment of Effect Significance

10.3.42. The significance of an effect ('EIA significance') on the cultural significance of a heritage asset, resulting from a direct or indirect physical effect or an effect on its setting, is assessed by combining the magnitude of the impact and the importance of the heritage asset.

10.3.43. EIA significance may be described on a continuous scale from **None** to **Major**. The matrix in **Table 10.3** provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly where the asset importance or effect magnitude levels are not clear or are borderline between categories. Where the matrix methodology indicates that effects potentially fall between two levels of significance i.e. moderate/minor it will be determined by professional judgement.

Criteria for Assessing Significance

10.3.44. The predicted significance of the effect is determined through a standard method of assessment based on professional judgement, considering the assessed importance of the heritage asset and the magnitude of impact upon cultural significance as detailed in **Table 10.3**.

Table 10.3: Criteria for Assessing the Significance of Effects on Heritage Assets

		Magnitude of Impact upon Cultural Significance			
		Substantial	**Moderate**	**Slight**	**Negligible/ No Impact**
Heritage Asset Importance	**Very High**	Major	Major	Major/Moderate	Negligible/None
	High	Major	Major/Moderate	Moderate/Minor	Negligible/None
	Medium	Moderate	Moderate/Minor	Minor	Negligible/None
	Low	Moderate/Minor	Minor	Negligible	Negligible/None

Source: Headland Archaeology

10.3.45. Following the Importance of Heritage Assets methodology presented above, any feature of negligible importance is excluded from the impact assessment as a significant effect in EIA terms is not possible.

10.3.46. Effect significance conclusions are expressed in the impact assessment as 'beneficial' or 'adverse'.

10.3.47. In this assessment **Major** and **Moderate** effects are considered significant in the context of the EIA Regulations.

10.3.48. In all cases conclusions will also be expressed in terms of the relevant Policy tests.

Limitations to Assessment

10.3.49. Information held by public data sources is generally considered to be reliable; however, the following general points are noted:

- Documentary sources are rare before the medieval period;
- Wherever such documentary sources are used in assessing archaeological potential professional judgment is used in their interpretation;
- HER records can be limited because opportunities for research, fieldwork and discovery depend on the volume and frequency of commercial development and occasional research projects, rather than the result of a more structured research framework. A lack of data within the HER records does not necessarily equal an absence of archaeology;
- Where archaeological sites have been identified solely from aerial imagery without confirmation from archaeological excavation or supporting evidence in the form of find-spots for example, it is possible the interpretation may be revised in the light of further investigation;
- The significance of sites can be difficult to identify from HER records, depending on the accuracy and reliability of the original source;
- There can often be a lack of dating evidence for archaeological sites; and
- Any archaeological field visit has inherent limitations, primarily because archaeological remains below ground level may have no surface indicators.

10.4. Consultation

10.4.1. Throughout the scoping process, and subsequently during the ongoing EIA process, relevant organisations were contacted with regards to the Proposed Development. **Table 10.4** outlines the consultation responses received in relation to Cultural Heritage.

Table 10.4: Cultural Heritage EIA Consultation

Consultee and date	Consultee Comments	Response
HES Case ID 300059966 Scoping Opinion 8th September 2022	*The Hen Law, cairn 1550m WNW of Langtonlees (Scheduled Monument, SM4548) is located inside the site boundary for the development and may [be] subject to direct impacts. There is also a potential for impacts on the setting of this monument caused by the introduction of wind turbines, solar panels, battery storage and other infrastructure in this location. We therefore recommend that an assessment should pay particular attention to this scheduled monument, and that mitigation should be embedded into the design of the development to reduce and avoid any impacts identified.* *Any assessment should also consider the potential for impacts on the setting of nearby heritage assets located outside the development site boundary. In addition to impacts caused by the introduction of*	The scheduled monument located within the Proposed Development Site has been visited in order to understand its significance and contribution made by setting. Through design iterations, a buffer of 575 m from proposed turbines locations and 420 m from proposed solar infrastructure has been embedded into the design minimise potential adverse setting effects. The nearest project infrastructure (the existing quarry BP5) is 75 m away to avoid physical impact. The setting assessment is presented for the agreed list of heritage assets (see this

	turbines in this location, we would expect any assessment of impacts on the setting of nearby heritage assets to include an analysis of impacts caused by the wider infrastructure associated with the scheme. This should include a consideration of impacts caused by the solar panels.	consultation table row, below) in this EIAR chapter at from para 10.6.18 onwards.
	Our initial appraisal suggests that there is a potential for significant impacts on the setting of the below heritage assets in our remit. This list is not exhaustive, however, and we would welcome further discussion on the identification of heritage assets for detailed consideration as the 'Stage 1 Setting Assessment' is progressed. ***Scheduled Monuments*** *• Hen Law, cairn 1550m WNW of Langtonlees (SM4548)* *• Dirrington Great Law, three cairns (SM4626)* *• Dirrington Little Law, cairn on summit of (SM4638)* *• Raecleugh Head, fort 275m NW of (SM377)* *• Raecleugh Head, fort 150m W of (SM4580)* *• Raecleugh Head Hill, fort 690m NNW of Raecleugh Head (SM378)* *• Dunside Hill cairn (SM12507)* ***Category A listed buildings*** *• Marchmont House (LB15386)* *• Duns Castle (LB4108)* *• Polworth Church (LB15384)* ***Inventory Designed Landscapes*** *• Marchmont (GDL274)* *• Duns Castle (GDL161)* *• Dunglass (GDL154)*	A baseline assessment has been undertaken, including a robust Stage 1 Setting Assessment to identify heritage assets for which significant effects are considered possible as a result of the Proposed Development and for which detailed consideration of setting assessment in the EIA was proposed. The Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) was submitted in full to HES for comment on 05/07/23. A reply was received 28/08/23 (see this table below). All heritage assets listed in the HES Scoping Response are retained for detailed setting assessment, with visualisations, in this chapter except: Garden and Designed Landscape Dunglass (GDL154) was found to lie outwith the ZTV for the Proposed Development, with no significant viewpoints within the ZTV. With the agreement of HES, this asset is scoped out from further detailed consideration in this chapter.
	We note that some helpful visualisations for our interests will also be prepared in support of the proposed landscape and visual impact assessment (LVIA). These include the preparation of visualisations from VP4, VP7, VP8, VP12, VP13, VP14, VP16 and VP17. We therefore recommend that any cultural heritage assessment should make use of and cross-reference with these visualisations.	**LVIA VPs VP01, VP02, VP06, VP09, VP12, VP14, VP16** (renumbered since Scoping) are referred to in this chapter to assist in the assessment of impacts upon Dirrington Great Law, three cairns (SM4626), Dirrington Little Law, cairn on summit of (SM4638), Raecleugh Head, fort 275m NW of (SM377), Raecleugh Head, fort 150m W of (SM4580), and Raecleugh Head Hill, fort 690m NNW of Raecleugh Head (SM378).
	We also recommend that some visualisations should be provided demonstrating the appearance of the proposed development in views towards the scheduled monuments identified above. In particular, we recommend that a visualisation is prepared illustrating the	Visualisations for the purposes of cultural heritage assessment have been produced to assess views towards scheduled monuments (**CHVP01, CHVP04, CHVP05, CHVP7**) which includes as a wireline that

	proposed development as viewed from the Dunside Hill cairn (SM12507) scheduled monument. ***Question 24: Do consultees accept the 400m buffer applied surrounding the Scheduled Monument located within the Proposed Development Area, SM4548 Hen Law, cairn 1550m WNW of Langtonlees, for the solar and battery storage search area in order to preserve its setting?*** *[HES] are unable to provide comments in response to this question without a detailed understanding of [the] monument and its setting, as well as the nature of the development being proposed. We therefore recommend that the scale of any buffer employed should be informed through the environmental impact assessment (EIA) process.*	requested from SM12507 (**CHVP05**). SM4548 Hen Law, cairn is a small burial cairn measuring 3 m in diameter and is only 0.25 m high. The cairn is not a prominently visible heritage asset. A field visit for this chapter has determined that the cairn can only be experienced within a radius of c.30-40 m but interprets that, given its situation on the south western summit of Hen Law, contemporary settlement may have been located to its south, with important up-slope views northwards towards it. A buffer of 575 m from proposed turbine locations has therefore been embedded into the design. It is considered that this provides an adequate setting in which to fully understand, appreciate and experience the cultural significance of the cairn, with the area in which contemporary settlement may have been located remaining appreciable. A buffer of 250 m to any new infrastructure and 75 m from existing quarry and extension (BP5) has been embedded into the design. It is considered that this provides an adequate buffer to protect any currently unknown below-ground remains that may be associated with the scheduled monument from a physical impact during construction.
SBC Archaeology Officer Scoping Opinion 8th September 2022	*The combined scheme needs consideration for the cumulative effects of the scheme's two aspects of wind and solar farm, both alone and singly, as well as with similar wind farm schemes in the surrounding area both existing and proposed.* *There is no mention of peat deposits that may also record invaluable information regarding cultural heritage activities in the area. Nothing is given to highlight the archaeological importance of the peat.* *A Desk-Based Assessment will be required to allow for a full understanding and also to help guide what might be needed in any visualisations or indeed any archaeological fieldwork, such as walkover work or any intrusive fieldwork conditions or recommendations.* *The lack of mention of historic landscapes as a whole is slightly confusing as this only appears limited to those sites that have*	The wind turbine and solar elements of the Proposed Development are considered in the physical (direct and indirect) and operational (setting) assessments in this chapter (Part 10.6). Cumulative developments are also considered (Part 10.7). A phase 1 peat survey has been carried out to aid the EIA. This showed that the infrastructure of the Proposed Development is underlain by peaty soils rather than peat. (**more information available in Chapter 9: Hydrology, Geology and Hydrogeology**). The Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) was submitted to SBC on 05/07/23. Proposals for fieldwork to mitigate identified physical impacts as a result of the Proposed Development are presented in this chapter at Part 10.8. Inventory Gardens and Designed Landscapes (GDL) were mentioned in the Scoping Report and those that may be

	been designated or appearing in the Landscape and Visual Impact Assessment work.	affected listed. Two GDLs are assessed in detail in this chapter (para 10.6.111 onwards)
	It would be useful if the information presented as plots can be provided as shapefiles, particularly of the zones of theoretical visibility, and also the sites identified as EIA Significant.	The Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) including the ZTV was submitted to SBC on 05/07/23.
	In the upland area the vegetation may well mask any slight archaeological remains, even at ground level, and there is the possibility that more identifiable. Whilst an exclusion area is proposed for the surroundings of the Scheduled Monument cairn which is within the red line boundary, there hasn't been any identification of similar areas by the types of archaeological remains that might be anticipated across the site.	Professional assessment of LIDAR data available on the Scottish Remote Sensing Portal for the Proposed Development Site was undertaken for the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**). The quality of the LiDAR is good and aided the identification of seven previously unidentified sites. Many of these assets potentially represent medieval or post-medieval period agricultural features. No likely prehistoric remains in the vicinity of the Scheduled Monument were identified.
	The following heritage assets were noted as requiring consideration and visualisations as necessary in the assessment: • Hen Law, cairn 1550m WNW of Langtonlees (SM4548) • Dirrington Great Law, three cairns (SM4626) • Dirrington Little Law, cairn on summit of (SM4638) • Raecleugh Head, fort 275m NW of (SM377) • Raecleugh Head, fort 150m W of (SM4580) • Raecleugh Head Hill, fort 690m NNW of Raecleugh Head (SM378) • Herrits Dyke,linear earthwork 2400m N of Greenlaw,Greenlaw Moor (SM371) • Wrunklaw,fort 700m ESE of Horseupcleugh (SM5003) • Smailholm Tower (SM13614)	After Stage 1 consideration, the majority of the heritage assets listed in the SBC Scoping Response were retained for detailed setting assessment, with visualisations, in this chapter. Exceptions comprise: • Herrits Dyke,linear earthwork 2400m N of Greenlaw,Greenlaw Moor (SM371) • Wrunklaw,fort 700m ESE of Horseupcleugh (SM5003) • Smailholm Tower (SM13614) The Stage 1 Assessment has afforded proportionate consideration to the likely effect of the Proposed Development upon these assets and concluded no adverse impacts. Detailed justification was provided and the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) was submitted in full to SBC for comment on 05/07/23. No response was received from SBC, however, HES confirmed the list of assets within their remit proposed for detailed assessment in this chapter in their response 28/8/23.
Northumber-land County Council Scoping Opinion 8th September 2022	*There are a number of historic designations within the north Northumberland and we ask that the applicant conducts some consideration into including these in their assessment.*	Confirmation was provided to NCC that heritage assets are identified in north Northumberland throughout the Cultural Heritage chapter of the Scoping Report (pages 101 & 103), and appropriate guidance and due consideration of data sources for England is also cited (pages 100, 102 & 103). A response received from NCC on 02/11/2022 read:

		Having reviewed your response and then re-read the information on the consultation I am content with the methodology. I would have nothing further to add to those locations listed as heritage assets for consideration. After proportionate Stage 1 consideration presented in the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) further consideration of heritage assets in England were scoped out the EIAR, and the Policy background and assessment methodologies employed in this chapter are therefore entirely Scotland-specific.
HES **Case ID** **300059966** **28th August 2023**	In response to provision of the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**) to propose and agree heritage assets requiring detailed consideration in this chapter and supporting visualisations, HES agreed the list of assets but requested the addition of consideration of, in particular the relationship with Dirrington Great Law, three cairns (SM4626) and Dirrington Little Law, cairn on summit of (SM4638): • SM12507 Dunside Hill, cairn 1225m S of Byrecleugh • HER 57449 Twin Law, Twinlaw Cairns Headland informed HES that agreeing access to Marchmont House (LB15386) (GDL274) has not been possible for the purposes of obtaining photography for photomontage visualisations to support this chapter. HES also requested that the proposed solar array elements of the Proposed Development are included on supporting visualisations submitted with the EIA, and that a ZTV for the solar elements is also included.	HES confirmed that no new CHVPs are required and these assets are assessed in full in this chapter with a supporting photomontage from SM12507 (**CHVP05**) and with a wireline visualisation from 57449 (**CHVP04**) (para 10.6.70 onwards and 10.6.80 onwards). HES confirmed that wirelines would be acceptable provided the assessment could also provide information on the nature of any surrounding woodland or existing tree cover e.g. coniferous, deciduous, mixed and/or commercial. This is provided at para 10.6.125 onwards. All visualisations include solar elements as well as other proposed project infrastructure for the Proposed Development. A solar ZTV is included as Volume 3a, **Figure 10.3**.
HES **Case ID** **300059966** **7th November 2023**	In response to a request to comment on the full suite of CH and LVIA visualisations in advance of application submission, HES provided the following advice: *'We are content that the visualisations provide sufficient information for our interests and we have found them useful in assessing the potential impact of the development on cultural heritage assets within the vicinity. The visualisations have helped us understand that the impact of the development as currently proposed does not raise significant concerns for two monuments – Dirrington*	

	Great Law, three cairns (SM4626) and Hen Law, cairn 1550m WNW of Langtonlees (SM4548). *We have, however, serious concerns about the potential impact of the proposed development on the setting of the scheduled monument known as Dirrington Little Law, cairn on summit of (SM4638) Specifically, we consider the position of Turbine 2 has a significant adverse impact on that setting in the key view from Twinlaw cairns. As shown in the photomontage from cultural heritage viewpoint 4, Turbine 2 would appear behind Dirrington Little Law cairn when viewed from the cairns at Twinlaw. This would significantly diminish the dominance of the cairn within its setting and detract from the way it is understood, appreciated and experienced.* *The design of the development as proposed has the potential to raise issues in the national interest such that we would have to object. We strongly recommend, therefore, that you consider redesign options that would reduce the impact of Turbine 2 on the monument. Redesign options could include the removal of the turbine, a reduction in its height, or a relocation that removes it from this key view towards the monument. We would be happy to comment on draft redesigns.'*	The Applicant committed to a redesign of the Proposed Development as reflected in the submitted layout which aimed to mitigate the impacted sightline from Twin Law as highlighted by HES by re-locating Turbine 2 100 m to the north, such that it would not directly backdrop SM4638.
HES **Case ID** **300059966** **20th November 2023**	To the Applicant's proposed layout redesign to mitigate the adverse effects as described by HES in their November consultation, HES responded: *Our view is that the revised layout does not reduce the impact of Turbine 2 on the setting of Dirrington Little Law, cairn on summit of (SM4638) to a degree that would mitigate our concerns.* *The proposed relocation would mean Turbine 2 appeared to the left of the cairn at Dirrington Little Law's summit when viewed from Twin Law cairns. However, a turbine in this location would still appear behind the landform of the hilltop where the cairn stands. It would appear very close to the direct line of sight to the cairn, and would still diminish the dominance of the cairn within its setting and detract from the way it is understood,* *appreciated and experienced.* *It is highly probable that any layout design that retained a turbine between the current locations of Turbines 1 and 3 in this key view would have a similar significant*	The Applicant considers that any perceived adverse impacts upon the cultural significance of heritage assets assessed has been minimised as far as reasonably possible, to a magnitude that is not significant in EIA,

	adverse impact. On review, we also have concerns about the impact of Turbine 1 on the setting of Dirrington Little Law cairn.

Source: Headland Archaeology

10.5. Baseline

Existing Baseline

10.5.1. The full list of known heritage assets within the Proposed Development Site and the Outer Study Area is presented in the gazetteer appended to accompanying Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**) and the cultural significance of these assets is discussed by period in the Statement of Significance and Importance section.

Geology and Geomorphology

10.5.2. The bedrock geology across most of the area comprises an interbedded sedimentary bedrock of the Stratheden Group and Inverclyde Group. These sedimentary rocks were formed in a local environment previously dominated by rivers and alluvial fans. They are detrital, generally coarse-grained and form beds and fans of deposits where rivers flowed from upland valleys onto lowland plains (BGS 2022). To the north-west the geology differs across the higher ground and comprises Felsite, an igneous bedrock, part of the Dirrington Great Law Sill. This bedrock was formed by intrusions of silica-rich magma.

10.5.3. The superficial deposits are generally made up of diamicton till deposits formed from glacianic action in the Quaternary period. The local environment dominated by ice age conditions. To the west of the Proposed Development Site and intersecting the western boundary, a large peat body is mapped underlying Shiningpool Moss and Under Ram Bog. This is described as a partially decomposed mass of semi-carbonized vegetation which has grown under waterlogged, anaerobic conditions, usually in bogs or swamps and was formed during the Quaternary period.

Proposed Development Site

10.5.4. There is one designated heritage asset within the Proposed Development Site: Hen Law, cairn 1550m WNW of Langtonlees (SM4548), a prehistoric burial cairn located close to the top of Hen Law (see Volume 3a, **Figure 10.1**). There are 15 non-designated heritage assets recorded by the HER of Low or higher importance within the Proposed Development Site. Five of these assets are dated to the medieval/post-medieval period and comprise a farmstead (362955), a mapped road (342254) plus three areas of rig and furrow (159618, 159624 and 342245). Four further heritage assets have been dated more specifically to the post-medieval period. These include an encampment on Camp Moor (58695), a mapped road (342253), a series of sheepfolds (58707) and a milestone (361603). A radio station (96350) is dated to the 20th century. The remaining five assets are undated and have been identified as a dyke (58694) and linear earthwork (261505), the site of a farmstead at Hen Law (181467), a sheepfold (159626), and cultivation remains (87537). In addition, this assessment has identified a further two sheepfolds (HA04, HA06) through LIDAR assessment and field visits.

Table 10.5: Known Heritage Assets within Proposed Development Site

Ref	Name	Description	E	N	Status	Importance
SM4548 / 58715	Hen Law, Cairn 1550m WNW Of Langtonlees	Prehistoric Ritual And Funerary: Cairn	371867	653940	Scheduled Monument	High
159618	Tup Knowe	Rig And Furrow	373000	654500	Non-designated	Low

Ref	Name	Description	E	N	Status	Importance
159624	Foul Burn	Rig And Furrow	372300	653300	Non-designated	Low
342245	Langton Lees 2	Rig And Furrow	373100	654000	Non-designated	Low
362955	Well Cleugh	Farmstead	373083	651999	Non-designated	Low
58695	Camp Moor	Encampment (Period Unassigned)	373300	652000	Non-designated	Low
58707	Blackrig Plantation	Sheepfold(s)	372680	653470	Non-designated	Low
361603	Middlerig	Milestone (18th Century)	372682	654326	Non-designated	Low
181467	Hen Law	Farmstead	372450	654310	Non-designated	Low
96350	Radio Station	Communications	373878	654432	Non-designated	Low
58694	Dyke	Dyke	371450	653160	Non-designated	Low
87537 / HA09	Well Cleugh	Cultivation Remains (Period Unassigned), Sheepfold (HA09)	373800	652100	Non-designated	Low
159626	Camp Moor	Sheepfold(s)	372500	652100	Non-designated	Low
261505	Harden's Hill Black Dyke	Linear Earthwork	374200	654800	Non-designated	Low
342253	Old Road from Old Stobswood to Hardens Hill	Road	372170	655500	Non-designated	Low
342254	Old Road from Black Hill to Hardens Hill	Road	372990	655970	Non-designated	Low
HA04	Sheepfold	Lidar Survey	372786	653714	Non-designated	Low
HA06	Sheepfold	Lidar Survey	372787	654040	Non-designated	Low

Source: Headland Archaeology

Archaeological Potential

10.5.5. The Proposed Development Site comprises predominantly exposed low hills, with resources including heathland and streams connected by long-lived tracks. Accordingly, the known archaeological remains as recorded on the HER demonstrates limited occupation/activity during the prehistoric period and seems to be limited to funerary/ritual purposes. There is then a significant increase in activity from the later historic period through to the modern period. Based on the available data, most of this activity relates to agricultural use either through pastoral use, and to a lesser extent, arable farming. The area of the Proposed Development Site, being on higher ground, is perhaps more suited to pasture/grazing, and it may be that remains in this area relates to seasonal occupation.

10.5.6. The detailed assessment of archaeological potential presented in the accompanying Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**) is summarised in **Table 10.6**.

Table 10.6: Archaeological Potential of Proposed Development Site

Period	Archaeological Potential	Importance
Prehistoric	Low potential for stone-built remains (e.g. cairns, hut circles etc) that may be preserved beneath the topsoil. Medium potential for associated remains around vicinity of Scheduled Monument.	Medium-High

Medieval - Modern	Low potential for hitherto unknown remains relating to seasonal occupation and pastoral exploitation.	Low-Medium

Source: Headland Archaeology

Heritage Assets Considered for Setting Effects

10.5.7. Within the 2 km OSA (from the proposed turbine locations) there are three Scheduled Monuments, all associated with Raecleugh Head Fort, and three Listed Buildings (two of which are Cat B and one Cat C). There are 69 non-designated heritage asset entries in the HER, and two Non-Inventory Designed Landscapes (NIDLs, both of which define larger areas around the two Inventory Gardens and Designed Landscapes located within the 5 km OSA).

10.5.8. Within the 2-5 km OSA (from the proposed turbine locations) there is one Conservation Area, two Inventory Garden and Designed Landscapes, 10 Scheduled Monuments, six Cat A Listed Buildings, 41 Cat B Listed Buildings, and three NIDLs.

10.5.9. Within the 5-10 km OSA (from the proposed turbine locations) there are three Inventory Garden and Designed Landscapes, 28 Scheduled Monuments and 46 Cat A Listed Buildings.

10.5.10. Within the 10-20 km OSA (from the proposed turbine locations) there is a Grade II Registered Park and Garden (located in England) and nine Inventory Garden and Designed Landscapes within Scotland. There are three English Grade I Listed Buildings and 51 Scottish Cat A Listed Buildings.

10.5.11. In addition, beyond the OSA as defined above, any other heritage asset which is within the ZTV and is considered exceptionally important and/or sensitive to visual change within its setting, and/or where long-distance views from or towards the asset are thought to contribute to cultural significance in the opinion of the assessor or consultees are included in the assessment.

10.5.12. One Scheduled Monument, Smailholm Tower SM13614, located 19.2 km south of the nearest proposed turbine; and one non-designated heritage asset HER 57449 Twinlaw Cairns located 9.4 km west of the nearest proposed turbine, therefore beyond the above-defined OSAs, were added to the Stage 1 assessment through the consultation process.

10.5.13. A ‘Stage 1’ Setting Assessment has been carried out to consider whether further detailed assessment would be required for heritage assets within the OSA, based on whether it is likely that the Proposed Development would affect their cultural significance through development within the setting of each asset.. Summary results are presented in Part 6.2 of the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**).

10.5.14. The ‘Stage 1’ Setting Assessment methodology considers each heritage asset in the OSA in turn to identify those assets in the ZTV which have a wider landscape setting that contributes to their cultural significance and whether it is likely that cultural significance could be affected by the Proposed Development (Volume 3a, **Figure 10.2**). Where heritage assets are located outwith the ZTV, viewpoints located within the ZTV which may provide a culturally significant view towards the heritage asset and the Proposed Development were considered.

10.5.15. Following consultation, the ‘Stage 1’ Setting Assessment found that there may be effects through changes within their setting on the cultural significance of two Inventory Gardens and Designed Landscapes, seven Scheduled Monuments, four Listed Buildings, and one non-designated heritage asset. These 14 heritage assets are assessed as eight assets/asset groupings in this chapter, supported with photomontage and/or wireline visualisations as appropriate (**CHVPs 01-12**, **Figures 10.4-10.15** and **LVIA VPs 01, 02, 06, 09, 12, 14 & 16**, **Figures 6.12, 6.13, 6.17, 6.20, 6.23, & 6.27**).

Table 10.7: Heritage Assets Included in Detailed Setting Assessment

Ref	Name	Status
Proposed Development Site		
SM4548	Hen Law, cairn 1550m WNW of Langtonlees	Scheduled Monument
0-2 km OSA		
SM377	Raecleugh Head, fort 275m NW of	Scheduled Monuments, assessed as a group
SM4580	Raecleugh Head, fort 150m W of	
SM378	Raecleugh Head Hill, fort 690m NNW of Raecleugh Head	
2-5 km OSA		
SM4626	Dirrington Great Law, three cairns	Scheduled Monuments, assessed as a group
SM4638	Dirrington Little Law, cairn on summit of	
LB15384	Polwarth Church, including graveyard, boundary walls and gates	Cat A Listed Building
GDL724	Marchmont GDL	Cat A LBs located within GDL, assessed as a group
LB15386	Marchmont House, including garden walls, stairs and sundial	
LB15388	Marchmont Estate, Dovecot	
GDL161	Duns GDL	Cat A LB located within GDL, assessed as a group
5-10 km OSA		
LB4108	Duns Castle, with screen walls and sundial	
SM12507	Dunside Hill, cairn 1225m S of Byrecleugh	Scheduled Monument
HER 57449	Twin Law, Twinlaw Cairns	Non-designated Heritage Asset

Source: Headland Archaeology

10.6. Assessment of Potential Effects

Construction

10.6.1. Development activities within the Proposed Development Site have the potential to truncate or remove buried archaeological remains, resulting in a direct impact on these assets. Direct physical impacts may occur during construction as a result of intrusive groundworks, comprising enabling works including habitat management, any areas of cut and fill, bulk excavation and topsoil stripping, site compound establishment, and excavations for turbine and crane footings, access tracks and utilities.

10.6.2. Accidental direct physical impacts within the Proposed Development Site may arise should activities such as, but not limited to, ancillary drainage works, and uncontrolled plant movement take place in the vicinity of heritage assets. The micro-siting tolerances of 50 m for proposed infrastructure is also used as a proportionate study area/proximity for the assessment of possible accidental impacts upon heritage assets during the construction phase of the Proposed Development.

10.6.3. Indirect impacts describe secondary processes, triggered by the Proposed Development, that lead to the degradation or preservation of heritage assets. For example, changes to hydrology may affect archaeological preservation.

Direct and Indirect Physical Impacts within the Proposed Development Site

Direct Physical Impacts

10.6.4. There are 19 known heritage assets located within the Proposed Development Site (**Table 10.5**). All of these have been avoided by design by the proposed wind infrastructure, however, direct physical construction impacts have been identified upon all or part of two heritage assets as a result of the solar infrastructure/Operational Environmental Management Plan (OEMP) (Volume 3a, **Figure 10.1**).

10.6.5. An area of rig and furrow (Foul Burn 159624), preserved surface earthworks resulting from previous ploughing, was observed during the field visit to extend beyond the HER-defined polygon, predominantly to the west and south for c.200 m. Impact assessment identifies that c.4 ha of a total 5.7 ha area of rig and furrow earthworks, of low (local) importance, would be covered over by the proposed solar development area and would be physically impacted where the footings require ground contact or foundations, and for cable routes, inverters/transformers. Otherwise, the surface earthworks would be preserved beneath the proposed solar PV panels. The Proposed Development infrastructure would potentially impact upon a small and discrete parts of this area, an adverse impact of slight magnitude and **negligible significance** which is **not significant**.

10.6.6. Similarly, the proposed solar development area would cover over the location of four sheepfolds (58707 (x2), HA04 and HA06), all of which are evident as surface earthwork/stone features in LIDAR data, and are of low (local) importance. It is anticipated that the low-level remains will be avoided by the footings or foundations of the proposed solar PV panels and would be preserved beneath. **No impact** is anticipated which is **not significant**.

10.6.7. At Camp Moor traces of an encampment (Camp Moor Encampment, 58695, from which the moor gains its name) are recorded on the HER. Surface earthworks are visible in LIDAR data preserved beyond the boundaries of modern arable (ploughed) fields from a regiment which was stationed there after 1715 to deter Jacobites (as documented in the New Statistical Account, 1845). The earthwork remains are of low (local) importance). Impact assessment identifies that an area proposed for OEMP woodland planting overlaps slightly with the HER-defined polygon which is buffered by 100 m from a nominal central point. However, the earthworks as visible in LIDAR data do not extend within the area proposed for woodland planting. **No impact** is anticipated which is **not significant**.

10.6.8. Alongside Wellcleugh Burn, the HER records 87537 Well Cleugh Cultivation Remains and Sheepfold (HA09). Surface earthworks comprising embanked field boundaries enclosing rig and furrow earthworks are visible in LIDAR data; these extend beyond the area as defined by the HER to cover an area of c.1.2 ha. The earthwork remains are of low (local) importance). Impact assessment identifies that the area would be covered entirely by OEMP woodland planting, except for the sheepfold HA09 which would be preserved in a clearing with a 10 m buffer. There is a potential for the planting of trees and subsequent root action to damage the surface earthworks, however, the extent of physical damage would be minimal. It is expected that it would remain possible to appreciate the presence of the earthworks within the woodlands, and any artefactual remains present would remain in situ. OEMP would result in an adverse impact of slight magnitude and **negligible significance** which is **not significant**. No impact is anticipated upon sheepfold HA09.

Indirect Physical Impacts

10.6.9. From the phase 1 peat survey and detailed site survey (**Chapter 9: Hydrology, Geology and Hydrogeology**) it is known that the majority of the site (94% of surveyed points) is underlain

by shallow soils of <0.5 m peat depth. All turbines have been located only on soils that have <0.5 m peat depth.

10.6.10. No waterlogged deposits or deposits with palaeoenvironmental potential are identified that may be indirectly affected by hydrological changes as a result of the Proposed Development.

Accidental and Micrositing Impacts

10.6.11. There is one heritage asset located within 50 m of the Proposed Development infrastructure (342245, Medieval rig and furrow earthworks) however this is located beyond a valley and watercourse of Western Nick and as such no accidental or micrositing impacts are anticipated due to the presence of the watercourse acting as a natural barrier (Volume 3a, **Figure 10.1**).

10.6.12. Although located beyond the 50 m micrositing tolerance, given the importance of Scheduled Monument SM4558 Hen Law, Cairn 1550m WNW Of Langtonlees which is located within the Proposed Development Site (Volume 3a, **Figure 10.1**), it is proposed this area should be protected from accidental impact throughout construction with fencing. **No impact** is anticipated which is **Not Significa**nt.

Archaeological Potential

10.6.13. The Proposed Development Site is considered to hold a general low archaeological potential for hitherto unknown archaeological remains. This potential is increased slightly in the vicinity of the Scheduled Monument SM4558 Hen Law, Cairn 1550m WNW Of Langtonlees (Volume 3a, **Figure 10.1**).

10.6.14. Direct physical construction impacts on previously unknown heritage assets in the Proposed Development Site is considered unlikely but possible.

10.6.15. Effect significance cannot be fully assessed for unknown heritage assets, as neither the cultural significance of the asset nor the magnitude of the impact can be known. Consequently, an assessment of construction effects upon archaeological potential is considered.

10.6.16. The assessment of archaeological potential has identified that any remains in the vicinity of the scheduled monument may be of up to high importance. This area has been avoided by design (buffered from borrow pit BP5 by 75 m). The assessment of archaeological potential has identified that any other remains (not associated with the scheduled monument) may be of up to medium importance.

10.6.17. If such remains are present and discovered during construction phase groundworks, this may result in a construction-phase direct physical impact of up to substantial magnitude. Without mitigation, therefore, any adverse effect resulting from a direct physical impact upon archaeological remains of high importance discovered in the vicinity of the scheduled monument during construction-phase may be of up to **Major significance**, which is **Significant**.

Operation

10.6.18. As agreed with HES and SBC through submission of Volume 4, **Technical Appendix 10.1**, Cultural Heritage Baseline and Stage 1 Setting Assessment, two Inventory Gardens and Designed Landscapes, seven Scheduled Monuments, four Listed Buildings, and one non-designated heritage asset as presented in **Table 10.7** are assessed for setting effects during the operational phase of the Proposed Development.

10.6.19. Cultural Heritage Viewpoints (CHVPs) agreed with consultees and illustrative of views towards, across or from heritage assets considered for setting effects are shown on Volume 3a, **Figure 10.2**: Cultural Heritage Viewpoints (CHVPs) within the Outer Study Area (OSA)

and Zone of Theoretical Visibility (ZTV). Assessments are supported with photomontage and/or wireline visualisations as appropriate (**CHVPs 01-12**, Volume 3c, **Figures 10.4-10.15** and **LVIA VPs 01, 02, 06, 09, 12, 14 & 16**, Volume 3c, **Figures 6.12, 6.13, 6.17, 6.20, 6.23, & 6.27**).

10.6.20. All other heritage assets within the OSA are proportionately considered for potential operational effects in Annex 1 to Volume 4, **Technical Appendix 10.1**. No likely significant effects are anticipated and these assets are not considered further in this chapter.

Cairns

10.6.21. Prehistoric funerary cairns derive cultural significance from their intrinsic archaeological remains and potential; excavation may yield information on the nature of these monuments and the nature of the societies who built them. Contextually, prehistoric cairns derive cultural significance from their locations, potentially close to contemporary settlement in areas of cultivatable land and often close to watercourses. Cairns were usually sited to relate to the communities which built them, often positioned in prominent locations overlooking areas of settlement, particularly if the cairns were funerary in nature as this may have forged links between the living and the dead and relate to inferred possession of discrete parts of the local landscape.

SM4548 Hen Law, cairn 1550m WNW of Langtonlees

SM4548 Hen Law, cairn 1550m WNW of Langtonlees comprises a small turf-covered burial cairn situated on the south western summit of Hen Law, within the Proposed Development Site. It measures 3 m in diameter and 0.25 m high and is interpreted as very likely to cover human remains. Around it, traces of other burials and of the rites associated with burials may survive. The List Description (the description of the monument provided by HES) places the monument as of earlier Bronze Age date (c.3500 years old), however, without excavation, this is speculative. The List Description includes a Statement of National Importance, outlining the monument's significance and reasons for scheduling: *'The monument is well preserved; it is of a type rarely preserved because of their small size; it is of national importance because of the rarity of the type and its vulnerability. It is of national importance to the theme of earlier Bronze Age burial and ceremonial practices. It is of particular interest because of the proximity of the much larger and more prominent cairns on the Dirrington Laws; comparison between the burials, which are in cairns of such different scale, would be of great value to the study of earlier Bronze Age society.'*

10.6.22. The cultural significance of this SM, therefore, is largely derived from its physical remains and potential contribution to future research. There is added associative value from its proximity and variation as compared with SM4626 Dirrington Great Law, three cairns and SM4638 Dirrington Little Law, cairn on summit of, located 2.3 km to the north-west and 3.3 km to the south-west respectively.

10.6.23. The monument is experienced within modern rough pasture enclosure with post-and-wire fencing. The cairn is not a hilltop cairn, but is experienced on a plateau just beneath the wide summit of Hen Law (half of which has been quarried away, mostly in the 21st century, a process which is ongoing as the quarry remains active; the modern and active quarry is located less than 50 m north of the scheduled monument). Given its small size and low height, it is experienced only within a radius of c.30-40 m, which may potentially be increased should the rough, tussocky grass within the Proposed Development Site be cut or grazed. There are open views in all directions, particularly to the south for long distances and over the Merse (the pastoral region between the River Tweed to the south and the Lammermuirs).

10.6.24. Contextually, as described above, the cairn is not a prominent monument in the landscape, or intended to be visible over large distances. It is understood and experienced in an

immediately adjacent context only. Whilst intervisibility with the Dirrington Laws and the prominent prehistoric cairns upon them is possible, there is no evidence that this placement was intentional or that it contributes to the significance of Hen Law cairn. Hen Law cairn cannot be discerned in reciprocal views due to its small size (see **Photomontage CHVP02** (Volume 3c, **Figure 10.5**). There is no evidence that the cairns functioned contemporaneously. The intervisibility and accessibility between the comparable monuments is therefore of modern academic interest.

10.6.25. **Photomontage CHVP01** (Volume **3c, Figure 10.4**) indicates that the full height of all six of the proposed turbines would be visible from the cairn in views to the east (**Figure 10.4f**), through south-east, to the south (**Figure 10.4h**). The nearest proposed turbine would be T4, located 600 m to the south, with T5 located 625 m to the east. The visualisations indicate that the proposed solar PV panels would be visible from the cairn, positioned at a low profile to the ground, and at a minimum distance of 420 m.

10.6.26. Direct lines of sight with the Dirrington Laws would be maintained, as would lines of sight towards the Merse. The cairn is not a prominent monument such that its prominence would be challenged by the presence of the proposed turbines. Most importantly, as per the List Description Statement of National Importance, the physical remains would be preserved to allow future investigation and potential comparison with investigation of the cairns on the Dirrington Laws. There is no known evidence for contemporary settlement within 2 km, and the daily landscape of those who built it can only be postulated. Given the cairn's location on a contour 250 m south of the actual summit of Hen Law, it may be supposed that the contemporary settlement could have been located in the area to its south, within the site. Looking back up the slope within a 400 m radius around the cairn, in which contemporary settlement may have existed, and from where the cairn may have been intended to have been appreciated, the Proposed Development would be behind the viewer and not be visible. Given the size of the monument it is considered very unlikely it would have been intended to have been experienced beyond this distance. No above ground infrastructure (turbines or solar PV panels) are proposed within the area in which the cairn can be experienced, and it would remain possible to speculate as to the possible location of contemporary settlement of those who built the cairn. The preservation of Hen Law with no proposed infrastructure would allow for a retained understanding of the monument's context. Nevertheless, prominent visibility of the Proposed Development within views towards the area where contemporary settlement may have been located is considered to represent an alterations to the asset's setting resulting in a slight loss of appreciation, understanding or awareness of the asset's cultural significance.

10.6.27. It is therefore considered that the Proposed Development would have a slight adverse impact on the cultural significance of SM4548 Hen Law, cairn 1550m WNW of Langtonlees, an asset of high (national) importance, resulting in an adverse effect of **Minor significance** which is **Not Significant**.

10.6.28. In the terms NPF4 Policy 7(h) the understanding, appreciation and experience of Scheduled Monument SM4548 Hen Law, cairn 1550m WNW of Langtonlees would be adequately retained such that the integrity of setting would not be significantly adversely affected.

SM4626 Dirrington Great Law, three cairns, SM4638 Dirrington Little Law, cairn on summit of

10.6.29. The cairns on the Dirrington Laws are located in similar topographic locations, interpreted as likely to have been constructed by the same prehistoric society and for the same function. They are therefore assessed here as a group.

10.6.30. The Dirrington Laws themselves are prominent natural landscape features which act as distinctive landmarks in an otherwise more gently undulating landscape. It is important not to conflate visibility of the Dirrington Laws with the cultural significance of the cairns; it is acknowledged that the prehistoric societies who raised them evidently sought to take advantage of the naturally prominent position. Whilst the cairns themselves are relatively large in comparison with other Bronze Age funerary monuments, and were evidently intended to be visible over large distances, in fact, in moving through the landscape, the cairns themselves are visible across a more discrete and localised area than the hills they are situated upon. This assessment therefore seeks to describe the landscape in which the cairns are set to consider the cultural function of the assets within that setting, rather than assess the visual impact of the Proposed Development from or towards the hills upon which they are located.

Description of the Assets

10.6.31. SM4626 comprises a group of three burial cairns situated on the summit of Dirrington Great Law. The westernmost cairn measures c. 17 m in diameter and 1.8 m in height within an irregular ditch. The easternmost cairn measures c. 15.5 m in diameter and 1.8 m in height. These two cairns closely resemble the large cairn standing on the summit of Dirrington Little Law to the south-west. Between the two large cairns lies a third cairn, measuring 7.5 m in diameter and 0.5 m in height, adjacent to an Ordnance Survey triangulation pillar. This cairn can be compared with the small cairn on the south flank of Dirrington Little Law.

10.6.32. SM4638 comprises a burial cairn situated on the summit of Dirrington Little Law. It measures c. 26 m in diameter and up to 2 m in height. The cairn is unusually large compared with most other extant burial mounds in this area. It is likely to cover at least one burial of the earlier Bronze Age; by analogy with excavated sites, it seems certain that other burials would have been inserted into the body of the cairn. Burial, and ceremonial activity associated with the burials, will extend beyond the cairn.

10.6.33. The List Description places the group of monuments as of earlier Bronze Age date (c.3500 years old) and are therefore assumed to be broadly contemporary, although this has not been tested through excavation and scientific dating.

Cultural Significance

10.6.34. The SM4626 List Description includes a Statement of National Importance, outlining the monuments' significance and reasons for scheduling: '*The monument, as a group of well preserved burial cairns, is rare in this area. The two larger cairns are particularly unusual because of their size. The cairns and the area around them are of national importance to the theme of early Bronze Age burial and ceremonial practices. The two types of cairn on the summit of the Law may represent burial at two different times in the earlier Bronze Age. Comparison of the burial deposits in these cairns, and in the related cairns on the summit and flank of the Little Law would provide information of considerable importance to the study of the development of prehistoric burial. The cairns are of particular importance because of their prominent position; this may reflect the high status in their society of the people buried there. Additionally, study of the old land surfaces covered by the cairns would provide information of national importance to the theme of prehistoric land use*.'

10.6.35. The SM4638 List Description Statement of National Importance reads: 'The monument is very well preserved; it is of national importance because the burial deposits which it covers, and those which may have been inserted into the body of the cairn, are likely to survive undisturbed. The burials in the cairn would provide information of considerable importance about the burial rites of the earlier Bronze Age, and about the apparently important individuals buried there. In addition, the cairn covers an area of contemporary and earlier Bronze Age

land; examination of the buried soil would provide information about land use in the period immediately prior to the cairn's construction. The monument is therefore of national importance to the themes of earlier Bronze Age burial and ceremonial practices and to the theme of prehistoric land use. It is of particular significance in earlier Bronze Age society in the area.'

10.6.36. In addition to their considerable intrinsic significance, the monuments' cultural significance is informed by their intentional prominence which is achieved through their size (1.8 m and 2.0 m height respectively) and landscape positioning. It is notable that each of the cairns are located on the highest hills in the locality, and is therefore clearly a pre-conceived intention in the minds of the builders. The cairns' hilltop location and evidently intentional prominence therefore contributes to their cultural significance.

Views From the Assets

10.6.37. There are 360 degree, long-distance vantage views from each of the Dirrington Laws (**Photomontage CHVP02**, Volume 3c, **Figure 10.5**). This is considered a function of the cairns being positioned at the highest point within the territory of the society who built it, and the views themselves may not contribute to cultural significance. Although the location of the settlement of this society is unknown, it is assumed that there would have been a visual relationship. Based on an analysis of positions in the landscape in which the cairns on the Dirrington Laws can be prominently experienced, it is considered likely that contemporary settlement was located to the south-west, south, south-east, or east of the Dirrington Laws and visibility in these directions from the cairns is considered to contribute to their cultural significance.

10.6.38. Although not visible from the Dirrington Laws due to its low profile, there is added associative value from their proximity and variation as compared with SM4548 Hen Law, cairn 1550m WNW of Langtonlees, located to the east. Per the List Description for this asset: '*comparison between the burials, which are in cairns of such different scale, would be of great value to the study of earlier Bronze Age society.'*

Views Towards the Assets

10.6.39. Field visits supported by viewshed analysis generated by GIS has demonstrated that the monuments are not obviously discernible beyond a maximum distance of 5 km radius. Cairns SM4626 are particularly visible from the north, east and south, however it is notable that they cannot be experienced from the west due to topography. SM4638 meanwhile is visible from the east, south and west, but is not visible from the north due to topography. Considering the overlap between these viewsheds, it is postulated that the territory of the society who built the cairns on the Dirrington Laws, assuming they were contemporaneous, could have been located in an area within 5 km to the south-west, south, south-east and east. This is considered to be the area in which the cairns were intended to be experienced from in the Bronze Age. It is further noted that SM4638 is situated on the southernmost edge of the plateau summit of Dirrington Little Law, such that it is visible from the lower ground to the south. This position is considered to be deliberate. Views towards the monument from this area therefore contribute to the cultural significance of the monument.

10.6.40. **Photomontage CHVP01** (Volume 3c, **Figure 10.4**) is positioned at SM4548 Hen Law, cairn within the Proposed Development Site. **Photomontage CHVP06** (Volume 3c, **Figure 10.9**) is positioned on Raecleugh Head Hill 1.4 km to the east of the Proposed Development and 4.7 km from Dirrington Great Law. **Photomontage LVIA VP16** (Volume 3c, **Figure 6.27**) is positioned on Wrunk Law 6.5 km to the north-west of the Proposed Development. **Photomontage LVIA VP14** (Volume 3c, **Figure 6.25**) positioned 5.6 km to the north-west of the Proposed Development at Watchtower Reservoir. Each of these visualisations are within

the zone in which the Dirrington Law cairns are experienced, and in each case they appear skylined on the horizon.

10.6.41. Conversely, whilst the Dirrington Laws are visible as natural landscape features, the cairns upon them are not appreciable in **Photomontage LVIA VP09** (Volume 3c, **Figure 6.20**) positioned 8.5 km to the south-west of the Proposed Development in Westruther, **Photomontage LVIA VP12** (Volume 3c, **Figure 6.23**) positioned 4.2 km to the south of the Proposed Development at Greenlaw Moor, 6.1 km south-east of Dirrington Little Law.

Intervisibility with other Hilltop Cairns

10.6.42. The monuments on Dirrington Great Law and Dirrington Little Law are intervisible. Given their assumed contemporaneity a nd the fact that they were very likely to have been constructed by the same society for the same purpose and to be visible from the same settlement area, they exhibit added group value. Views between the cairns on the Laws are therefore considered to contribute to their cultural significance.

10.6.43. There is therefore a potential for intervisibility with other hilltop cairns to contribute to significance. Indeed, for example, the List Description for SM12507 Dunside Hill, cairn 1225m S of Byrecleugh cites that the Twin Law cairns 2 km to the south-south-west and the Mutiny Stones long cairn 2 km to the north-north-west are clearly visible from this commanding vantage point. **Photomontage CHVP04** (Volume 3c, **Figure 10.7**) and **Wireline CHVP05** (Volume 3c, **Figure 10.8**) are illustrative of intervisibility between the prominent hills of the Dirrington Laws, Twin Law and Dunside Hill. However, the cairns upon these hills are not appreciable as prominent monuments with the naked eye over such long distances, if indeed they are visible at all.

10.6.44. Although prehistoric cairns are commonly preserved on the summits of hills, there is no accepted understanding of the reason that prehistoric societies chose to construct cairns in such locations. There may have been multiple reasons for the desire to construct funerary cairns on hilltops and, equally, the reasons or significance to the societies who lived beneath them may have changed over time. Theories include: positioning of the most important ancestors at the highest points in a community's territory; positioning of the dead at the most elevated positions in order to be as close as possible to the sun/moon/sky; positioning of the ancestors so as to overlook and protect the society's territory, also laying claim to ownership of the landscape, and/or; positioning of prominent constructions in prominent positions so as to either be visible from as wider area as possible, or to have as long-distance views as possible from the monument itself. (A function of placing the ancestors at the highest available location, would result in long-distance views, whether relevant in the minds of the builders or not). This may never be fully understood, and indeed the function of hilltop cairns may have held different significance to different prehistoric societies (over time, or geographically). This therefore remains a subject of academic debate.

10.6.45. It should be noted that the relevance of views between hilltop cairns is speculative and could be an accident of topography, by virtue of each being located in elevated positions with vantage views. Preservation bias must also be considered, where funerary monuments constructed within the more readily accessible valleys may have been robbed or destroyed by subsequent activities in the millennia since their construction and use. Potentially important views and alignments may already therefore have been lost. It is considered important, therefore, not to draw lines between preserved prehistoric remains and assume views along these sightlines are relevant.

10.6.46. Given an academic interest, an appreciation of the potential for intentional intervisibility contributes to the cultural significance of the cairns on the Dirrington Laws. Overall, however,

it is considered that this element of setting contributes little to the cultural significance of the cairns.

Contribution of Setting to Cultural Significance

10.6.47. The significance SM4626 Dirrington Great Law, three cairns, SM4638 Dirrington Little Law, cairn on summit of primarily lies in their physical remains, the excavation of which could provide intrinsic evidence regarding their chronology and typology and thereby reveal information about the society who constructed them. Whilst their setting is not fully understood such that it can be stated with confidence which elements contribute to its significance, a precautionary approach to assessment would identify the following aspects as potentially relevant:

- Views from the monuments towards the south-west, south, south-east and east, and views towards the monument from this area in which contemporary settlement of those who constructed the cairns may have been located, contributes to the cultural significance of the monument;
- The cairns' hilltop location and evident intentional prominence contributes to their cultural significance;
- As a likely contemporary and inter-related group, views between the cairns on the Laws are considered to contribute to their cultural significance;
- There is associative value with SM4548 Hen Law, cairn 1550m WNW of Langtonlees as comparison between the burials would be of value to the study of earlier Bronze Age society; and
- An appreciation of the potential for intervisibility with other hilltop cairns contributes to the cultural significance of the cairns on Dirrington Laws.

Impact Assessment

Views Towards the Cairns: Prominence and Associative Value

10.6.48. Looking towards the cairns on the Dirrington Laws from much of the area to the south-east and east, which is the area, in which contemporary settlement may have existed and from where the cairns may have been intended to have been appreciated, the Proposed Development would not be visible. For example, from SM4548 Hen Law, cairn 1550m WNW of Langtonlees within the Proposed Development Site (**Photomontage CHVP01,** Volume 3c, **Figure 10.4**) no turbines or solar panels would be visible from this position as they would be located in the opposite direction. The cairns on both Dirrington Great Law and Dirrington Little Law are visible on the skyline.

10.6.49. In terms of associative value, intervisibility from SM4548 would remain unaffected, and the ability to excavate and compare burial evidence from these contemporary but contrasting monument types would remain possible.

10.6.50. Looking towards the cairns on the Dirrington Laws from the eastern side of the Proposed Development Site from areas such as **Photomontage LVIA VP02** (Volume 3c, **Figure 6.13**) and **Photomontage CHVP06** (Volume 3c, **Figure 10.9**) all six of the proposed turbines and proposed solar PV panels would be visible in the intervening space in the foreground of the Dirrington Laws. The nearest proposed turbine would be T5, and T3 would obscure visibility of SM4638 Dirrington Little Law, cairn on summit of (**Figure 10.9d & 10.9e**). The turbines of the Proposed Development would appear relatively taller than the Dirrington Laws in these views. Views of the Proposed Development from this area are considered to represent an adverse impact on understanding, appreciation and experience of the monuments' cultural significance.

10.6.51. In views towards the cairns on the Dirrington Laws from the south and south-west, in which contemporary settlement may also have existed and from where the cairns may have been intended to have been appreciated the Proposed Development would be physically separated by a distance of over 2.5 km from the cairns. It is considered that the prominence of the cairns would remain unchallenged, to be appreciated clearly as intentionally constructed prominently visible features positioned upon the highest summits within a prehistoric society's territory.

10.6.52. Looking towards the cairns from the north-west from areas such as **Photomontage LVIA VP14** (Volume 3c, **Figure 6.25**) and **Photomontage LVIA VP16** (Volume 3c, **Figure 6.27**) the Proposed Development would appear relatively smaller than the Dirrington Laws and the prominence of the cairns would remain unaffected,

Intervisibility with other Hilltop Cairns

10.6.53. In considering the potential impact of the Proposed Development upon views between hilltop cairns, **Photomontage CHVP02** (Volume 3c, **Figure 10.5**), **Photomontage CHVP04** (Volume 3c, **Figure 10.7**) and **Wireline CHVP05** (Volume 3c, **Figure 10.8**) indicate that although the prominent hills of the Dirrington Laws, Twin Law and Dunside Hill are intervisible, the cairns upon them are not appreciable as prominent monuments with the naked eye over such long distances, if visible at all.

10.6.54. **Photomontage CHVP04** (Volume 3c, **Figure 10.7**) is positioned on Twin Law to the west, the location of non-designated HER 57449 Twinlaw, Twinlaw Cairns, 7.4 km from Dirrington Great Law, and 6.5 km from Dirrington Little Law. The positions of SM4626 Dirrington Great Law, three cairns, SM4638 Dirrington Little Law, cairn on summit of are indicated on the wirelines (**Figure 10.7d & 10.7e**). The Dirrington Laws are visible from this location albeit their summits are below the horizon such that they are less prominent as viewed from other locations (i.e. those within 5 km of them, as identified). All six of the proposed turbines would be visible between and beyond the Dirrington Laws and backdropping Dirrington Little Law. The nearest proposed turbine would be T4, located 9.5 km away. T2 would be positioned to the north, and T3 would be positioned to the south of cairn SM4638 on Dirrington Little Law, each 10.1 km distant from the viewpoint on Twin Law. At a distance of 6.5 km away the cairn SM4638 is barely visible and certainly not prominently visible, particularly as it is not skylined from this position. It is considered that the cairn on Dirrington Little Law is very unlikely to have been constructed in order to be viewed from this, or other hilltops, and there is no known evidence for such an intended function. Given the location of the cairn on Dirrington Little Law, on the southern edge of the hilltop, it is considered more likely that the cairn was constructed to be prominently visible from the lower ground to the south-west, south and east.

10.6.55. Despite the juxtaposition of the Proposed Development relative to the Dirrington Laws in views towards them from SM12507 Dunside Hill, cairn 1225m S of Byrecleugh and HER 57449 Twinlaw, Twinlaw Cairns, it is considered that it would remain possible to understand, appreciate and experience that intervisibility between these hilltops is possible, and that sometimes these hilltop locations were chosen by prehistoric communities for the raising of prominently visible funerary monuments.

Views From the Cairns

10.6.56. **Photomontage CHVP02** (Volume 3c, **Figure 10.5**) from the summit of Dirrington Great Law indicates that the full height of all six of the proposed turbines would be visible from the cairns in views to the south-east. Proposed solar PV panels would be visible across the ground between T3 & T5, and slightly further up slope from T5. The nearest proposed turbine would be T4, located 2.5 km away.

10.6.57. **Wireline CHVP03** (Volume 3c, **Figure 10.6**) from the summit of Dirrington Little Law indicates that the full height of all six of the proposed turbines would be visible from the cairn in views to the south-east, beyond an intervening plateau of the hill's wide summit. The nearest proposed turbine would be T4, located 3.0 km away.

10.6.58. The Proposed Development would not interfere with intervisibility between the cairns upon the two Dirrington Laws.

10.6.59. In terms of views from the cairns on the Dirrington Laws, for the most part (330 of 360 degrees), the view would remain unchanged. The view of the Proposed Development from these hilltops, however, would represent a material change in that 30 degree angle of view. The visualisations demonstrate that the Proposed Development would be located at a sufficient distance from the cains that they would not compete for prominence with the cairns, largely due to the elevated viewing position, looking down on the proposed turbines.

10.6.60. The Proposed Development would however be located within an area where contemporary settlement may have been located. The views to this area are considered to represent an adverse impact on understanding, appreciation and experience of the monument's cultural significance.

Conclusion: Impact of the Proposed Development upon Cultural Significance

10.6.61. Considering the precautionary approach to assessment which identifies above the aspects of setting potentially contributing to the significance of the cairns on the Dirrington Laws:

10.6.62. The Proposed Development would also appear in the interim space looking from the eastern and south-eastern side of the Proposed Development Site and would compete for prominence with SM4626 Dirrington Great Law, three cairns and SM4638 Dirrington Little Law, cairn on summit of. In addition, the Proposed Development would be located within an area where contemporary settlement of the society who raised the cairns may have been located, both in views towards the cairns and in views from the cairns. These are considered adverse impacts upon the cultural significance of the scheduled monuments.

10.6.63. In the main, however, in all other views and from all other directions, the Proposed Development would not appear in the majority of views from or towards the monuments, and their prominence would on the whole remain unaffected.

10.6.64. Intervisibility between the cairns on each of the Laws, and this group value, would remain unaffected. Similarly, the associative group value with SM4548 Hen Law, cairn 1550m WNW of Langtonlees would remain unaffected.

10.6.65. Intervisibility with other hilltop cairns is considered to contribute little to the overall cultural significance of the cairns on Dirrington Laws. There is no evidence that such views were intentional. The only view in which the Proposed Development would compete for prominence with the cairns is from Twin Law as shown in **Photomontage CHVP04** (Volume 3c, **Figure 10.7**) where T2 and T3 would backdrop Dirrington Little Law at a distance of over 10 km. In this view the cairn SM4638 is located 6.5 km away and is barely visible. It cannot be considered prominently visible from this distance such that its prominence could be adversely affected by the Proposed Development and no impact is concluded. The direct line of sight between the hilltop cairns would not be obscured and it would remain possible to academically debate the relevance of their theoretical intentional intervisibility.

SM4626 Dirrington Great Law, three cairns

10.6.66. All elements of the monument's cultural significance being considered, it is concluded that the Proposed Development would have a slight adverse impact on the cultural significance of

SM4626 Dirrington Great Law, three cairns, an asset of high (national) importance, resulting in an adverse effect of **Minor Significance** which is **Not Significant**.

10.6.67. In the terms NPF4 Policy 7(h) the understanding, appreciation and experience of Scheduled Monument SM4626 Dirrington Great Law, three cairns would be adequately retained such that the integrity of setting would not be significantly adversely affected.

SM4638 Dirrington Little Law, cairn on summit of

10.6.68. All elements of the monument's cultural significance being considered, it is concluded that the Proposed Development would have a slight adverse impact on the cultural significance of SM4638 Dirrington Little Law, cairn on summit of, an asset of high (national) importance, resulting in an adverse effect of **Minor Significance** which is **Not Significant**.

10.6.69. In the terms NPF4 Policy 7(h) the understanding, appreciation and experience of Scheduled Monument SM4638 Dirrington Little Law, cairn on summit of would be adequately retained such that the integrity of setting would not be significantly adversely affected.

SM12507 Dunside Hill, cairn 1225m S of Byrecleugh

10.6.70. SM12507 Dunside Hill, cairn 1225m S of Byrecleugh comprises a low grass-and stone-covered burial cairn built on a low, grass-covered, stony platform c. 12 m across (probably the remains of its base and a later stell that was visible in the early 1920s). The stone mounding that represents the above-ground structure of the cairn has been disturbed by the intersection of a disused dyke that runs from the south-west to the cairn's centre. Abutting this is a tall, modern marker cairn. The List Description places the monument as likely to date to the Neolithic or Bronze-Age, although it has not been excavated and scientifically dated.

10.6.71. The monument's intrinsic significance is derived from its physical remains. Specifically, the later adaption for reuse makes it more unusual and significant as excavation of similar monuments has indicated that these adaptions are unlikely to have fully disturbed the prehistoric remains; there is therefore a potential for the preservation of *in situ* artefact assemblages that might include cist settings, pottery, flintwork, and skeletal remains. There is also associative value from its comparability with other burial monuments which demonstrate considerable diversity in SE Scotland in the practice of burial and design of burial monuments and this cairn represents just one of the many ways in which communities dealt with their dead.

10.6.72. Contextually, the monument is experienced at the south-west edge of the summit to Dunside Hill on moorland and rough pasture at 435 m above sea level. By virtue of being preserved on a hilltop, there are open views in all directions. The List Description cites that the Twin Law cairns 2 km to the south-south-west and the Mutiny Stones long cairn 2 km to the north-north-west are clearly visible from this commanding vantage point. There is, however, no current evidence that it was placed to have intentional invisibility with any other specific contemporary monuments, or if it was, which monuments these may have been which were potentially significant in the prehistoric period. Whilst the prominent natural topography of the Dirrington Laws and Dunside Hill are appreciable from each other, at a distance of c.7 km in each case, the cairns themselves on the tops of these hills are not discernible as constructed features (Dunside Hill cairn is not discernible beyond a distance of c.3 km, and viewshed analysis indicates that the cairns on Dirrington Great Law are predominantly obscured by topography in views from the west).

10.6.73. As a hilltop cairn it was evidently intentionally situated by the prehistoric society who constructed it to be at a high elevation. The reasons for this are not fully understood, however, speculation includes positioning of the dead in elevated positions; positioning of the ancestors so as to overlook and protect the society's territory, and/or; positioning of

prominent constructions in prominent positions so as to either be visible from as wider area as possible, or to have as long-distance views as possible from the monument itself. In the case of SM12507 Dunside Hill cairn, the fact that the cairn is situated on the south-west contour beneath the summit of Dunside Hill suggests it may have been placed to be visible from, and overlooking, the lower agricultural land to the south and west of the Watch Water (and its tributaries) watershed in which a number of other potentially contemporary prehistoric monuments also remain preserved. This area, with water resources and slopes suitable for agriculture, is likely the territory of those who constructed the cairn. It is possible that the hilltop cairns placed across this wider landscape were intended to be visible to lay claim to discrete territories by being visible from each neighbouring territory. Further cairns that are preserved on the lower ground between Dunside Hill and the Dirrington Laws for example demonstrate that the interim area was occupied in the prehistoric period. SM12507 Dunside Hill cairn therefore likely functioned to prominently lay claim to ownership of this surrounding landscape setting, which in turn contributes to its cultural significance as it is currently understood.

10.6.74. **Wireline CHVP05** (Volume 3c, **Figure 10.8**), indicates that the nearest proposed turbine would be T4, located 9.4 km to the south-east. In views from Dunside Hill, T5 would appear behind Dirrington Great Law. The solar panel ZTV (Volume 3a**, Figure 10.3**) indicates that solar PV panels would not be visible from SM12507 Dunside Hill, cairn 1225m S of Byrecleugh.

10.6.75. As noted in the List Description Statement of National Importance, 'The monument's loss would impede our ability to understand the placing of such monuments within the landscape and the position of death and burial in prehistoric life.' The monument would not be lost as a result of the Proposed Development.

10.6.76. Despite the juxtaposition of the Proposed Development relative to the Dirrington Laws in views towards them from SM12507 Dunside Hill, cairn 1225m S of Byrecleugh, it is considered that it would remain possible to appreciate that intervisibility between these hilltops is possible. Whether intentional or not, intervisibility with Twin Law cairns, the Mutiny Stones, and the Dirrington Laws would be unaffected. The Dirrington Laws would also remain prominent landscape features as viewed from Dunside Hill.

10.6.77. With regards to factors of setting that are considered to contribute to the cultural significance of the cairn, in views from the west, in the valley of the Dye Water, the Proposed Development would not be visible in views towards the cairn as it would be shielded from view by Dunside Hill itself. Visibility from the surrounding landscape setting that is likely to have comprised the territory of those who constructed the cairn would be unaffected. It would remain possible to speculate as to the possible location of contemporary settlement of those who built the cairn. The prominence of the hilltop location of SM12507 Dunside Hill, cairn would remain unaffected.

10.6.78. It is considered that the Proposed Development would have no impact on the cultural significance of SM12507 Dunside Hill, cairn 1225m S of Byrecleugh, an asset of high (national) importance, resulting in an effect of **No Significance** which is **Not Significant**.

10.6.79. In the terms NPF4 Policy 7(h) the understanding, appreciation and experience of Scheduled Monument SM12507 Dunside Hill, cairn 1225m S of Byrecleugh would be adequately retained such that the integrity of setting would not be significantly adversely affected.

HER 57449 Twin Law, Twinlaw Cairns

10.6.80. Standing on the crest of the hill to which they give a name, at an elevation of 437 m, after having been badly damaged during the war these two cairns have been reconstructed, each surmounted by a conical pillar which are 3.0 m high and 3.5 m diameter. They are circular in

outline, formed of rough drystone whinstones and both have narrow passage stairs built into them for access to the beacons. Beneath, the west cairn has a diameter of c.18 m, and the east a diameter of c.21 m, each with a height of up to 1.8 m. Both have been excavated in the late 19th and early 20th centuries and as such a date has not been scientifically determined. Based on their form it is likely that they are of Neolithic or Bronze-Age origin. It is stated (G S Thomson 1872; J Walker 1868) that each contained a cist, but an eye-witness, Mr J Edington, who assisted at the excavations, stated that the only relics found were "some rusty button-like metal objects" found beneath the stones of cairn 'B'. Lady John Scott however, who conducted the excavations, records that she "opened the Twinlaw Cairns and found a cist (which had been ransacked before) in each" (J H Craw 1923). The monuments' intrinsic significance is therefore compromised, and likely the reason that the prehistoric remains are not designated.

10.6.81. Associatively they form a group (pair) c. 50 m apart and contextually they are prominent and conspicuous objects in the landscape. The associative and contextual significance is again compromised given their modern reconstructions obscuring their original form. Their intentional hilltop location is however apparent and therefore remains some associative value from its comparability with other burial monuments in SE Scotland and the (albeit potentially limited) contribution to academic study of the ways in which prehistoric communities dealt with their dead.

10.6.82. As with other hilltop cairns assessed in this chapter, the location affords open views in all directions. The situation of the Twinlaw Cairns is comparable with SM4626 Dirrington Great Law, three cairns in that they are examples constructed on the very highest points of the natural topography. There is, however, no evidence that the pair of cairns were placed to have intentional invisibility with any other specific contemporary monuments. Whilst the prominent natural topography of the Dirrington Laws and Twin Law are appreciable from each other, the cairns themselves on the tops of these hills are not discernible as constructed features, being located 6.5 km away from each other.

10.6.83. The Twinlaw Cairns may have been positioned to be as close to the sky as possible, and/or potentially with intentional extensive views in all directions. The Twinlaw Cairns are likely to have been placed to be visible from, and overlooking, the lower land with water resources and slopes suitable for agriculture beneath, likely the territory of those who constructed them. The cairns likely functioned to prominently lay claim to ownership of this surrounding landscape setting, which in turn contributes to its cultural significance as it is currently understood. It is possible that the hilltop cairns placed across this wider landscape were intended to be visible to lay claim to discrete territories by being visible from each neighbouring territory. Further cairns that are preserved on the lower ground between Twin Law and the Dirrington Laws for example demonstrate that the interim area was occupied in the prehistoric period.

10.6.84. **Photomontage CHVP04** (Volume 3c, **Figure 10.7**) is positioned on Twin Law. All six of the proposed turbines would be visible between the Dirrington Laws and backdropping Dirrington Little Law. The nearest proposed turbine would be T4, located 9.5 km away. The positions of SM4626 Dirrington Great Law, three cairns, SM4638 Dirrington Little Law, cairn on summit of are indicated on the wirelines (**Figure 10.7d**). The photomontage indicates that the proposed T2 and T3 would backdrop Dirrington Little Law in views from non-designated HER 57449 Twin Law, Twinlaw Cairns. At a distance of 6.5 km away cairn SM4638 is barely visible and certainly not prominently visible, particularly as it is not skylined from this position. It is considered that the cairn on Dirrington Little Law is very unlikely to have been constructed in order to be viewed from this, or other hilltops. The solar PV panel ZTV (Volume 3a**, Figure 10.3**) indicates that solar PV panels would not be visible from HER 57449 Twin Law, Twinlaw Cairns.

10.6.85. Despite the juxtaposition of the Proposed Development relative to the Dirrington Laws in views towards them from HER 57449 Twin Law, Twinlaw Cairns, it is considered that it would remain possible to appreciate intervisibility between these hilltops. Whether intentional or not, intervisibility with the Dirrington Laws and other prominent hills such as Dunside Hill would be unaffected. The direct line of sight between the hilltop cairns would not be obscured and it would remain possible to academically debate the relevance of this.

10.6.86. With regards to factors of setting that are considered to contribute to the cultural significance of the cairns, the ZTV indicates no visibility of the Proposed Development from the west of the HER 57449 Twin Law, Twinlaw Cairns, such that it would not backdrop in views towards them. Visibility from the surrounding landscape setting that is likely to have comprised the territory of those who constructed the cairn would be unaffected. It would remain possible to speculate as to the possible location of contemporary settlement of those who built the cairns. The prominence of the hilltop location of HER 57449 Twin Law, Twinlaw Cairns would remain unaffected. The pair of monuments' group value would remain unaffected.

10.6.87. It would remain possible to appreciate and speculate as to whether the Twinlaw Cairns were positioned to be as close to the sky as possible, and/or potentially with extensive views in all directions. The Proposed Development would appear as a relatively distanced feature in a very small part of the overall view from the cairns themselves.

10.6.88. Whilst the Proposed Development would be visible from these cairns, in part due to the fact that the cairns are located on hilltops with extensive views in all directions, the change in view is not considered an effect upon the cultural significance of these cairns, which has largely been lost given the modern reconstructions over their locations, their original form is difficult to interpret.

10.6.89. It is therefore considered that the Proposed Development would have no impact on the cultural significance of HER 57449 Twin Law, Twinlaw Cairns, an asset of low (local) importance, resulting in an effect of No Significance which is Not Significant.

10.6.90. In the terms NPF4 Policy 7(o) 57449 Twin Law, Twinlaw Cairns and its setting would be protected and preserved.

Forts

10.6.91. Hillforts generally begin to appear in the Iron Age although some may be built on the sites of earlier Bronze Age enclosures. As a class of monument these comprised settlements or places of refuge, intentionally placed on hilltops, ridges, spurs or promontories and surrounded by one or more constructed circuits of banks and ditches. There are examples of prehistoric forts which are situated on the lower or middle foothills and which are less prominent in the landscape. Their visual prominence over parts of their landscape setting is primarily thought to relate to defence, but theories also include additional purposes such as a display of power and influence.

10.6.92. Prehistoric forts derive much of their cultural significance from preserved intrinsic archaeological remains and archaeological potential. If subject to archaeological excavation, the forts have the potential to further elucidate the particular construction methods and dating of these monuments and provide insight into the nature of prehistoric society and how the forts interrelated. Contextually, prehistoric hillforts can in some cases derive their cultural significance from their prominent positions which overlook and control a hinterland through being clearly visible over long distances. They may have been placed in the landscape to be intervisible beyond communities/territories, although contemporaneity cannot always be assumed. Prosaically, forts also derive contextual significance from their locations generally close to good free-draining arable land and close to a water source, and it is access to these resources that the hillfort was likely constructed in order to control/defend. Local arable land

and access to water generally form the hinterland which forts overlook and control and are an important contributory contextual element in how they are understood within the wider landscape. These elements of setting therefore contribute to the forts' cultural significance.

SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head, SM4580 Raecleugh Head, fort 150m W of

10.6.93. SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head, and SM4580 Raecleugh Head, fort 150m W of comprise a group of Later Prehistoric (Iron Age) forts at the south edge of the Lammermuirs. The three forts are located in sequence, aligned generally north-south on a southerly-projecting spur beneath the summit (315 m aOD) of Raecleugh Head Hill. The southerly two forts, SM377 and SM4580 are situated either side and at the top of a steep dry ravine 'Guile Howe' and may be a pair. SM378 overlooks the pair. From the north, SM378 is located at 299 m aOD, 280 m north of SM377 at 250 m aOD, which in turn is only 80 m north of SM4580 at 229 m aOD.

10.6.94. SM378 is visible as three concentric, sub-circular earth and stone banks and two corresponding ditches. The fort is under improved pasture. This hillfort covers a roughly circular space 100 m in diameter and its defensive works protect an inner space around 66m in diameter. The defensive works include two inner earth and stone banks between which a central ditch survives. Two gaps in the circuit on the east and south-east indicate probable entrances. In places the banks and ditch are over 1 m high and deep respectively. They are blocked by an outer circular bank and this has been modified in the north-east arc by a later, outer earthwork that has enhanced the outer rampart. Archaeologists have suggested the surviving remains of the fort are the results of at least three phases of building, each one expanding the outer perimeter of the fort with further apparently defensive works. This suggests a significant development sequence in the fort at various points in its use when the emphasis on its function or symbolism may have shifted to suit the needs of those using it.

10.6.95. SM377 occupies a promontory formed by a deep gully known as Guile Howe to the south and another dry ravine to the northeast and east. The fort is enclosed by two large ramparts with external ditches on its north and west sides. The entrance is to the west southwest and is carried over the inner ditch by a causeway. The defences of the fort comprise two ramparts with external ditches barring access from the northwest and southwest. The outer ditch continues along the foot of the scarped north flank of the promontory dropping into the dry gully. The inner rampart is a massive feature, measuring as much as 9 m in thickness by 2 m in height, and to its rear there is a quarry-ditch some 15 m in breadth by between 1.2 m and 2 m in depth. The interior is roughly triangular and is featureless apart from the remains of medieval ploughing.

10.6.96. SM4580 is also bounded by Guile Howe on its north-east and north-west sides with gently sloping ground to the south-east and south-west. Its defences have been reduced by agricultural activities but survive as a low lip around the northern perimeter with a steep scarp up to 5 m high dropping down to a terrace cut into the steep slopes of Guile Howe. A small section of defences survives on the southern arc of the perimeter and is visible on aerial imagery. The eastern corner of the fort has been mostly destroyed through the encroachment of a farm steading. The interior of the fort is an elongated oval measuring 105 m north-east to south-west by at least 45 m transversely and is featureless. There is no clear entrance which suggests it was located to the south where the approach is a gentle slope.

10.6.97. The forts gain group value through their association with each other i.e., there is added interest in that research may elucidate the nature of their interrelationships, such as their potential contemporaneity (and possible different functions), or possible development one from the other (and why this might have been). It is unlikely, given the distance between them, that the forts were occupied by different communities.

10.6.98. In terms of wider associations, the forts follow the distinct pattern for forts and other substantial later prehistoric settlements elsewhere which occupy locally prominent sites within the transitional zone between lower-lying farmland and the Lammermuir Hills.

10.6.99. In addition to the extensive significance derived from the intrinsic potential of the preserved physical remains, the List Description describes the group of forts' contextual significance [amalgamated from the List Descriptions]:

'This is one of a local complex of three similar fortified settlements that overlook the low lying lands to the south of the Lammermuirs. It is part of a Scotland-wide group of Iron-Age hilltop enclosures that appear to have been built with defence specifically in mind. Researchers have suggested that some of these forts (including later examples dating to the early historic period) were built as symbols of status and power in geographically and strategically significant locations. It is clear from their position that the forts at Raecleugh Head could certainly control progress north and southwards through the Lammermuirs and their visibility from the south might indicate a more symbolic, less functional use. Although the relationship of this fort to the other two (less than 300m to the south) is unclear, their proximity indicates just how important this position was to those that built them. Their location marks a very distinctive landscape transition from the uplands to the north to the fertile lands of the Merse to the south.

[SM377 & SM4580 occupy] a prominent landscape position on the southern slopes of Raecleugh Head Hill. It is positioned above the dry gully known as Guile Howe where it overlooks the neighbouring fort. The monument has extensive views southwards across the Merse toward the Cheviot Hills.'

10.6.100. It is considered therefore that the position of the fort(s) was intended to present a prominent display to clearly demonstrate over a wide area the occupation of a defensible position which also enabled monitoring and/or control of the lower-lying farmland of the Merse to the south and potentially access through to the Lammermuir Hills to the north. SM377 and SM4580 are, however, significantly less prominent than SM378. Additionally, the group of forts is of interest in that there are no apparent hillforts on the summit of Raecleugh Head Hill, nor the nearby higher Harden Hill (360 m aOD), which would have afforded even further vantage views over the Merse, and accordingly becoming even more visible on approach from the same area of the landscape. There may therefore be an intentional situation of the forts with Guile Howe, possibly to control east – west access through the local landscape.

10.6.101. **Photomontage CHVP06** (Volume 3a, **Figure 10.9**) generated from SM378 indicates that the full height of all six of the proposed turbines would be visible from the fort in views to the west and south-west. The nearest proposed turbines would be T5 and T6, located 1.9 km away. The proposed solar PV panels and other infrastructure would also be visible from this vantage point, albeit at a low-profile, with many of this infrastructure obscured from view by existing woodland belts within the Proposed Development Site.

10.6.102. The proposed infrastructure is not located in immediately adjacent fields, and there is a discernible hinterland of agricultural land visible retained around the forts.

10.6.103. The view from SM378 and SM4580 would be similar to **CHVP06**, however, it is noted that, perhaps significantly, these forts are topographically positioned on the eastern side of the spur on which the group of forts are situated. Views towards the Proposed Development Site are therefore restricted from these forts, and the view from SM378 is considered to be the 'worst-case' view from the forts, being in an elevated position of the three.

10.6.104. **Photomontage CHVP07** (Volume 3c, **Figure 10.10**) has therefore also been chosen as the 'worst-case' view on the easterly approach to SM377 & SM4580 as it is from this orientation that the prominent earthworks of the forts are skylined; it is considered that these forts may

have been constructed to control access through Guile Howe, in which case this view would represent an important sightline along the route on which they would have been approached. This visualisation shows that the hub and blades of T1 would be visible over the horizon above SM378, and the blade tips of T2 would be visible above SM4580. The proposed solar PV panels and other infrastructure are not visible on the visualisation, obscured by topography.

10.6.105. On approach towards the forts from the south, as indicated in the List Description as potentially significant views, **Photomontage LVIA VP12** (Volume 3c, **Figure 6.23**) indicates that the group of forts are not visible from this distance (6.3 km). **Photomontage LVIA VP06** (Volume 3c, **Figure 6.17**), however, does show that the forts are prominently visible on approach from this orientation and proximity (2.2 km). The Proposed Development would also be visible in these views, offset to the west. This view is representative of views from along the A6105 northwards towards the forts, from the lower ground over which the forts overlook.

10.6.106. The association between the forts themselves (group value), as well as with comparable forts in the wider region would remain preserved for academic study. Vantage views southwards from the forts as far as the Cheviot Hills would remain unaffected by the Proposed Development. It would remain possible to understand and appreciate the intentional prominent display over a wide area, and that a huge workload was expended in order to make this location defensible. The ability to understand the monuments' possible function, currently interpreted as intended to control access through the transitional zone from the Merse and on to the Lammermuirs would remain evident. It would similarly remain possible to explore other possible reasons for the forts' landscape situation. **Photomontage LVIA VP06** (Volume 3c, **Figure 6.17**) demonstrates that on approach from the south, the Proposed Development is sufficiently separated (1.9 km), and of comparable scale such that the prominent position of the forts would not be significantly dwarfed, with the prominence of the monuments' earthworks and landscape position remaining readily appreciable.

10.6.107. The view of the Proposed Development from the elevated vantage point of the forts themselves as shown in **Photomontage CHVP06** (Volume 3c, **Figure 10.9**) would represent a material change in the view. It is considered that the Proposed Development would be located at a sufficient distance from the forts that they would not dominate them or appear overbearing, a function in part due to the elevated viewing position, looking down on the proposed turbines. The same assessment applies to visibility of the proposed solar PV panels, albeit to a lesser degree due to the relative smaller scale. Nevertheless, the Proposed Development would be located within an area that was likely suitable for agriculture at this time, and therefore a resource that the fort may have been positioned to monitor and control. Whilst this is considered to represent an adverse impact on understanding of the monument's cultural significance, the Proposed Development Site represents only a very small area of the Merse and the occupants of the forts' likely territory.

10.6.108. The presence of the Proposed Development over the horizon on approach from the east towards SM377 & SM4580 via Guile Howe as shown in **Photomontage CHVP07** (Volume 3c, **Figure 10.10**) would also represent a material change in the view. This is also considered to represent an adverse impact on understanding of the monument's cultural significance, however, this would not be to the extent that it would no longer be possible to understand the forts' intentional prominence in views from this location, nor an understanding of this as a possible access route.

10.6.109. All elements of the group of monuments' cultural significance being considered, it is concluded that the Proposed Development would have a slight adverse impact on the cultural significance of each of SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head, and SM4580 Raecleugh Head, fort 150m W of,

assets of high (national) importance, resulting in an adverse effect of **Minor Significance** on each which are **Not Significant**.

10.6.110. In the terms NPF4 Policy 7(h) the understanding, appreciation and experience of Scheduled Monuments SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head, and SM4580 Raecleugh Head, fort 150m W of would be adequately retained such that the integrity of setting would not be significantly adversely affected.

Designed Landscapes

10.6.111. Inventory Gardens and Designed Landscapes (GDLs) derive cultural significance through designed views and vistas, and inter-relationships between heritage assets within their boundary. Long-range views towards historic or natural features located outwith the boundary can sometimes also contribute to significance, although in the case of the two GDL assessed here, this is not the case. The significance of a Listed Building or group of Listed Buildings located within a GDL is often contributed to or enhanced by the setting as provided by the GDL design or layout.

10.6.112. This assessment has found that there would be very limited visibility of the Proposed Development from within the two GDL boundaries, and as such a proportionate assessment is presented.

GDL161 Duns Castle, LB4108 Duns Castle, with screen walls and sundial

10.6.113. LB4108 is a four-storey, 10-bay Gothic crenelated, sandstone ashlar house. Originating as a c.1320 tower house, it incorporates substantial later additions and alterations, principally by James Gillespie Graham in 1818-1822, and was altered again in 1966. The curving and crenelated screen walls are located to the west of the main house and the stone free-standing sundial is located in front of the south elevation. The cultural significance of the house primarily lies in its architecture, however, is also derived through associations with its architects and owners, and the associated features of interest within its designed landscape grounds.

10.6.114. Contextually, Duns Castle also derives significance from its landscape setting, designed to highlight its grandeur and impress wealth and influence upon its visitors. The GDL is an interesting example of early 19th-century parkland design by Thomas White Jnr. Surviving maps, plans and correspondence provide insight into the sequential development of the policies and the changing aesthetic fashions of the day.

10.6.115. Duns Castle lies within the valley of the Cumledge Burn. Undulating parkland encircles the castle and extends up the lower western flank of Duns Law. Mature trees line the long established field divisions in this area, known as The Bruntons, and grow in small, tightly-planted clumps. Elsewhere, broadleaf specimens grow individually and in more substantial clumps, particularly in the parks to the south of the Castle. Here, some of the original design features as conceived by Thomas White Jnr. in the early 19th century can be appreciated: Curving perimeter woodland behind a ha-ha forms a sinuous outer edge to the parks. The sunken drive ensures uninterrupted panoramic views towards Duns Law, and the abundant canopy of lime, sycamore, horse chestnut and copper beech frame views to and from Duns Castle. From the castle principal façade the parkland layout can be appreciated and it is from the castle that designed views appear to be focussed upon. Looking south from the porch there is a naturalistic glimpse through the parkland clumps allowing a relatively long view as far as, but not beyond, the GDL policies allowing an appreciation of its extent. The sundial is framed in the foreground. This designed view is represented by **Photowire CHVP08** (Volume 3c, **Figure 10.11**).

10.6.116. The GDL List Description describes that of all the landscape components at Duns Castle, the woodland is perhaps most important. The thick, curving, perimeter strip around the south and west gives form to the parks while the mixed canopy of Duns Wood enriches the quality of the local scenery by virtue of its sheer extent. The core woods of the designed landscape, situated to the west of the Hen Poo loch, retain a mixed deciduous character with occasional stands of larch and Scots pine. These woods prevent views beyond the policies and viewshed tools employed for this assessment indicate that the Proposed Development will not be visible from within the GDL boundaries.

10.6.117. There are three approaches towards the castle. The principal approach (c.1820) leads to the east façade of the castle from Castle Street in Duns, through an arched gate at the north lodge, and onto the grand lime avenue towards the castle where the impressive veteran trees (c.1690-1720) form an important and historic element of the design. The Pavilion Lodge (Category B Listed LB4111) (1774-1777) frames a revealed view of the castle, with the trees in the view. This designed view is represented by **Photowire CHVP09** (Volume 3, **Figure 10.12**) as it is roughly naturally orientated towards the Proposed Development. To the south of the castle, a further drive was established in the early 19th century with a lodge and gateway forming an elaborate entry point into the woods and parks. Unlike others designed by Thomas White, this drive traverses an unusually straight line, however, it has a dog-leg at its northern end which means the castle itself is screened from view by trees lining the approach at distance. It is thus impressively 'revealed' once a visitor using this approach is at a suitable close distance from the castle to be able to appreciate its architecture fully. There would be no visibility of the Proposed Development from this approach. A service entrance also approaches the castle from the south-west. This is within the perimeter woodland which is present around the south and west of the policies, and no visibility of the Proposed Development is possible along this approach.

10.6.118. A site visit for this assessment inspected the western façade of the house and identified no large windows or balcony indicative of a principal entertaining room, with intentional views facing in the direction of the Proposed Development. Whilst there may be views of proposed turbines from elevated positions such as on the house's roof at a distance of 5.2 km to the proposed T5, such views are not considered elements that contribute to the cultural significance of the house or the garden design. The octagonal ashlar lantern with openings, cornice and ornamental open-crown with ashlar finial over the entrance to the stables (Category B LB42497) through the screen walls is ornamental and not accessible. The solar PV panel ZTV (Volume 3a, **Figure 10.3**) indicates that solar PV panels would not be visible from GDL161 or LB4108 Duns Castle.

10.6.119. The character of the GDL is one of intentional enclosure by the extensive woodlands, with no designed views beyond its policies. This character would remain unaffected by the Proposed Development.

10.6.120. **Photowire CHVP09** (Volume 3c, **Figure 10.12**) illustrates there would be no visibility of the Proposed Development on approach to LB4108 Duns Castle through LB4111 the Pavilion Lodge due to screening by policy woodlands. Similarly, **Photowire CHVP08** (Volume 3c, **Figure 10.11)** illustrates there would be no visibility of the Proposed Development from LB4108 Duns Castle itself.

10.6.121. Considering potential impacts upon the wider non-inventory designed landscape (NIDL); this is the productive wider agricultural estate of the GDL, and being a functional landscape does not include designed elements or sightlines. Although there may be visibility of the Proposed Development from within the NIDL boundaries, no adverse impacts are predicted upon the contribution to historical significance that the NIDL makes to the overall significance of the GDL as the setting of LB4108 Duns Castle.

10.6.122. It is considered that the Proposed Development would have no impact on the cultural significance of GDL161/Category A Listed LB4108 Duns Castle, assets of high (national) importance, resulting in an effect of **No Significance**, which is **Not Significant**.

10.6.123. In the terms NPF4 Policy 7(c), the Proposed Development would preserve the character, special architectural or historic interest of LB4108 Duns Castle.

10.6.124. In the terms NPF4 Policy 7(i), the Proposed Development would preserve the cultural significance, character and integrity of GDL161 and would not significantly impact on important views to, from and/or within the GDL, or its setting.

GDL724 Marchmont, LB15386 Marchmont House, including garden walls, stairs and sundial, LB15388 Dovecot

10.6.125. LB15386 Marchmont House is a large symmetrical classical mansion flanked by two outer, lower wings. Originally executed to designs by Thomas Gibson in 1750-54 for the 3rd Earl of Marchmont, the house was altered in the 1830s and extensively remodelled in 1913-20 by Sir Robert Lorimer. To the rear, low balustraded garden walls enclose the lawns, which feature stone stairs linking the two terraces, and, closer to the house, a sandstone sundial with octagonal base. The cultural significance of the house primarily lies in its architecture. Interest is also derived through association with its owner, the Earl. It was converted to a residential home in the late 20th century.

10.6.126. The List Description 'Statement of Special Interest' identifies associative interest also from an apparent mystery regarding its architect: '*As built in the early 1750s, Marchmont bears some affinity with the work of William Adam, leading some to assume he was indeed, its architect. However, no drawings by Adam exist for the house and that which does, is signed 'Thos. Gibson Archt.' … The fact that so little is known about Gibson, perhaps leads to [the] suggestion that he was no more than a draughtsman and clerk of works, responsible for executing the Earl's own ideas*.'

10.6.127. There is further associative interest in, and interrelationships between, the built features within its designed landscape grounds, as well as the garden walls, stairs and sundial: the group comprises Marchmont House, Adam Bridge, the Cottages near the Remains of Redbraes Castle, the Dovecot, Gamekeeper's Cottage, Ice House, The Kennel House, 1 & 2 Marchmont Estate Cottages, Redbraes, Stable Courtyard and the Walled Garden.

10.6.128. Contextually, LB15386 Marchmont House also derives considerable significance from its landscape setting. Marchmont House itself is situated on almost the highest part of the immediate landscape and commands impressive, long-ranging views, not only down the tree-lined avenue to the north-east, but also to the more distant Eildon and Cheviot Hills to the south-west and south. The remarkable tree-lined Great Avenue is described in the List Description as 'an epic landscape feature' which stretches 1.3 miles (2.1 km) north-east from Marchmont House, and is a rare and impressive component of this early to mid-18th century landscape, planted by the 2nd Earl and notable for its balanced symmetry. The avenue provides an extravagant south-west aligned approach to the house, with reciprocal north-east views from the house which terminate with the Category A Listed Dovecot LB15388. Roy's Military Survey of the 1750s indicates that originally, from the dovecot, tree-lined linear space extended even further east, albeit on a slightly different alignment. The great avenue formed the main entrance drive until 1816. Today, the avenue is lined mostly by veteran beech with some breaks appearing as older trees die off, particularly towards the dovecot. The designed view from the dovecot is represented by **Wireline CHVP11** (Volume 3c, **Figure 10.14**).

10.6.129. The forecourt of LB15386 Marchmont House was briefly visited for this assessment, along with a perambulation of parts of the avenue approach, however the current curators of the property and GDL would not allow photography to be taken to illustrate the assessment or for

the generation of supporting photomontages. During this visit it was noted that thick tree cover (described below) around the house prevents any views beyond the house's forecourt.

10.6.130. In addition to the Great Avenue, Armstrong's map of 1771 depicts two further approaches to LB15386 Marchmont House. Entering from the south-west from the direction of Greenlaw, a drive lined with beech hedges enters woodland south of Hardens Park before curving around sloping parkland towards Marchmont House. The other approach enters from the north-west through woodland over the Adam bridge on a track that crosses perpendicular to the great avenue (allowing impressive views both up and down the avenue) before leading to the estate buildings and stables at Redbraes. Roy's Military Survey map of the 1750s indicates that during the mid 18th century, the designed landscape was rather more extensive with a further long avenue, perpendicular to the present one, stretching north-west from the site of the old Redbraes Castle, (to the east of Marchmont House) as far as a woodland plantation on Kyle's Hill. Perhaps initiated at the same time as the great avenue, it was subsequently interrupted with woodland plantations after the demolition of Redbraes Castle in the later 18th century. By 1826, when Sharp, Greenwood and Fowler's map was published, a short fragment of it survived as a linear, tree-lined space where it crossed the long axis of the great avenue in front of the house. Further to the north-west, its alignment is preserved by the track called Craw's Entry. By the opening decades of the 19th century this avenue had been removed and the distinction between the designed inner core and the rest of the estate (then comprising farmland, and beyond, a large area of grouse moorland) had been established. By tradition, a path using the remnant of the defunct avenue leading from Redbraes but diverting north-east to Polwarth church, is known as 'Lady's Walk', after the secret nightly trips made by Lady Grisell Hume bringing food to her father Patrick Hume during his month of concealment in the vaults during the winter of 1684. The perpendicular intersection of the Great Avenue with this earlier approach/historical avenue/Lady's Walk is considered to be a historically significant view and roughly naturally orientated towards the Proposed Development Site to the north-west. From this location, the point on approach along the Great Avenue, the architecture of LB15386 Marchmont House comes into view and can be fully appreciated. This view is therefore represented by **Wireline CHVP10** (Volume 3c, **Figure 10.10**).

10.6.131. The List Description describes that the perimeter woodlands retain a structure established during the first half of the 19th century and comprise mainly conifers to the south, west and north-east. Mixed deciduous species along the Swardon and Rumblingstone Burn valleys have grown unchecked and the area around the Adam Bridge is now heavily overgrown. The mixed deciduous woodlands around the house developed partly from veterans originally planted as specimens in the 18th century, together with 19th century planting. This description can be confirmed following a visit to Marchmont House forecourt carried out for this assessment. These woods prevent views beyond the policies and viewshed tools employed for this assessment indicate that the Proposed Development will not be visible from within the GDL boundaries.

10.6.132. **Wireline CHVP10** (Volume 3c, **Figure 10.10**) indicates that on approach along the Great Avenue to LB15386 Marchmont House, at the point at which its architecture becomes appreciable, the orientation of approach (to the south-west) is perpendicular to the location of the Proposed Development. However, the orientation of the earlier approach/historical avenue/Lady's Walk from Redbraes would, theoretically, be in the general direction of the Proposed Development. The wireline indicates theoretical visibility from this position of four turbine hubs and a further two blade tips, with the turbine towers screened from view by topography. The proposed solar PV panels would not be visible, again due to topography. However, due to the proximity of mature and historical policy woodlands to either side of Swardon Burn, the overgrown parklands in the fields to the north-east of the house, and the

southern end of the tree-lined Great Avenue, there would be no visibility of the Proposed Development. Although no permission was granted by the curators of Marchmont House to produce supporting visualisations for this assessment, a ZTV and the site visit to the house forecourt carried out for this assessment can confirm that from the intersection of the current and historical avenues, there are no outward views in the direction of the Proposed Development due to the presence of the thick policy woodlands. The trees here are up to 30 m high and located only 30 m from the **Wireline CHVP10** position (Volume 3c, **Figure 10.10**). Due to the orientation, views towards LB15386 Marchmont House from this position, from which its architecture is revealed and appreciated, would remain unaffected.

10.6.133. Similarly, the ZTV demonstrates that there would be no visibility of the Proposed Development along the south-westerly approach due to the presence of existing screening from policy woodlands. Whilst the ZTV indicates that there would be theoretical visibility of the Proposed Development from an elevated pasture field within the GDL to the west of the house, woodland belts prevent any view of the house from this location, and this viewpoint is not considered to be a significant or designed view.

10.6.134. **Wireline CHVP11** (Volume 3c, **Figure 10.14**) illustrates the relative positions of LB15386 Marchmont House and the Proposed Development from LB15388 Dovecot at the distal (north-east) end of the Great Avenue. There is a significant degree of separation. The site visit to the locale of the Great Avenue, as well as the List Description, has also confirmed that the Great Avenue is tree-lined, further breaking up theoretical views of the Proposed Development from this significant viewpoint. Whilst the architecture of the house is not readily discernible from this distance (the full length of the Great Avenue is over 2 km), it is clearly the intentional focus from this position, with the trees lining the avenue channelling the view to this as a terminating point.

10.6.135. During the visit, the curators confirmed that the northern façade of the house has no windows facing in the direction of the Proposed Development. Whilst there may be views of proposed turbines from elevated positions such as on the house's roof, it is considered that any such views are not significant elements of the house or the garden design. Although access to LB15386 Marchmont House was not permitted by the curators for the purposes of the assessment, it is acknowledged that there may potentially be a view of the Proposed Development from the elevated first floor balcony positioned above the front entrance, above the policy woodlands to the north. It is uncertain what the function of this room may have been, or whether access to the balcony is possible. Given the significant degree of separation between the location of the Proposed Development and the alignment of the Great Avenue (with T1 of the Proposed Development located 3.8 km north of Marchmont House), it is considered that any impact of visibility of the Proposed Development from this position would be negligible.

10.6.136. Considering potential impacts upon the wider non-inventory designed landscape (NIDL); this is the productive wider agricultural and moorland estate of the GDL beyond its defined 'inner core', and being a functional landscape does not include designed elements or sightlines. Although there may be visibility of the Proposed Development from within the NIDL boundaries, no adverse impacts are predicted upon the contribution to historical significance that the NIDL makes to the overall significance of the GDL as the setting of LB15386 Marchmont House.

10.6.137. It is considered that the Proposed Development would have no impact on the cultural significance of GDL724/LB15386 Marchmont House and LB15388 Dovecot, assets of high (national) importance, resulting in an effect of **No Significance**, which is **Not Significant**.

10.6.138. In the terms NPF4 Policy 7(c), the Proposed Development would preserve the character, special architectural or historic interest of LB15386 Marchmont House and LB15388 Dovecot.

10.6.139. In the terms NPF4 Policy 7(i), the Proposed Development would preserve the cultural significance, character and integrity of GDL724 and would not significantly impact on important views to, from and/or within the GDL, or its setting.

LB15384 Polwarth Church, including graveyard, boundary walls and gates

10.6.140. LB15384 Polwarth Church is included in the assessment as it is prominently sited and constructed, intended to be visible across a wide area within its parish. There is therefore a potential for the prominence to be adversely affected by the Proposed Development.

10.6.141. The building's cultural significance derives from its fabric and architecture. It was rebuilt 1703, incorporating an earlier structure. The interior was recast in 1928. Originally a rectangular-plan church, made T-plan with a projecting gabled aisle to the north. It is four-stage with a square-plan tower to the west. Whitewashed harl with red sandstone ashlar dressings. The church also gains associative interest with Marchmont Estate, with a former Marchmont aisle to the east and burial vault below. It is also the focus of the secret nightly trips made by Lady Grisell Hume in 1684.

10.6.142. The church is approached from the north or the south along Packman's Brae. **Photomontage CHVP12** (Volume 3c, **Figure 10.15**) illustrates that on approach to the church from the south, in the direction of the Proposed Development and a representative view from a historically relevant and public vantage point in which the church appears prominently, the Proposed Development would appear offset and in the distance. All six turbines would be visible above a tree line on the horizon. The nearest proposed turbine would be T1, located 3.4 km to the north-west of the church.

10.6.143. Views from the church itself are not anticipated to be affected due to the presence of vegetation screening within the graveyard, with long distance views not contributing to significance.

10.6.144. Associations with Marchmont House would remain unaffected by the Proposed Development.

10.6.145. Contextually it would remain possible to understand LB15384 Polwarth Church as an intentionally prominent building on approach from the south. The Proposed Development would not be visible on approach from the south where Packman's Brae turns to the west, nor on approach from the north.

10.6.146. It is considered that the Proposed Development would have no impact on the cultural significance of LB15384 Polwarth Church, including graveyard, boundary walls and gates, an asset of high (national) importance, resulting in an effect of **No Significance**, which is **Not Significant**.

10.6.147. In the terms NPF4 Policy 7(c), the Proposed Development would preserve the character, special architectural or historic interest of LB15386 Polwarth Church.

10.7. Cumulative Effects

Cumulative Construction Effects

10.7.1. In terms of direct physical impacts, there is no potential for cumulative construction effects on any known or unknown and previously unrecorded cultural heritage assets. Any effects will be contained within the Proposed Development Site such that none would be further physically impacted by any other developments outside this area.

Cumulative Operational Effects

10.7.2. Cumulative operational effects can occur when the contribution made to the cultural significance of a heritage asset by its setting is directly altered by the Proposed Development

in combination with other developments. The assessment of cumulative effects uses the same methodology applied in considering the likely effects of Proposed Development alone. All analysis of asset significance and the contribution made by setting remains unchanged. All that is altered is the nature of change predicted for the one or more scenarios under consideration.

10.7.3. Cumulative operational effects are considered in cases where an effect of **Minor or greater significance** has been predicted on the setting of a heritage asset as a result of the Proposed Development.

10.7.4. In terms of operational impacts upon the cultural significance of heritage assets in the study area through development within their setting, an adverse effect of **Minor Significance** is anticipated upon six Scheduled Monuments:

- SM4548 Hen Law, cairn 1550m WNW of Langtonlees
- SM4626 Dirrington Great Law, three cairns
- SM4638 SM4638 Dirrington Little Law, cairn on summit of
- SM377 Raecleugh Head, fort 275m NW of
- SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head
- SM4580 Raecleugh Head, fort 150m W of

10.7.5. For the cumulative assessment, other proposed developments are considered where they also feature prominently within views of or towards these assets as demonstrated by visualisations (**CHVPs 01-12**, **Figures 10.4-10.15** and **LVIA VPs 01, 02, 06, 09, 12, 14 & 16**, **Figures 6.12, 6.13, 6.17, 6.20, 6.23, & 6.27**).

10.7.6. In summary, with detailed consideration presented below, **no significant cumulative impacts** have been identified.

SM4548 Hen Law, cairn 1550m WNW of Langtonlees

10.7.7. Visible from SM4548, there are one scoping (Wedderlie, 5.7 km to the west), one application (Dunside, 10.1 km to the west), and one consented (Crystal Rig IV, 12.7 km to the north) wind developments.

10.7.8. The cumulative developments shown on **CHVP01** (Volume 3c, **Figure 10.4**) would not impact upon the cultural significance of SM4548 Hen Law, cairn 1550m WNW of Langtonlees.

10.7.9. An assessment considering the combined visibility of the cumulative developments would not increase the assessed impact magnitude concluded for the Proposed Development in isolation. No cumulative effects are predicted.

SM4626 Dirrington Great Law, three cairns / SM4638 Dirrington Little Law, cairn on summit of

10.7.10. Visible from SM4626 and SM4638 , there are one scoping (Wedderlie, 3.8/2.8 km to the west), one application (Dunside, 7.9/7.4 km to the west), and one consented (Crystal Rig IV, 9.7/12.7 km to the north) wind developments.

10.7.11. In terms of views from the Dirrington Laws, the cumulative developments shown on **CHVP02** (Volume 3c, **Figure 10.5**) would not impact upon the cultural significance of SM4626 Dirrington Great Law, three cairns or SM4638 Dirrington Little Law, cairn on summit of.

10.7.12. In terms of views towards SM4626 Dirrington Great Law, three cairns and SM4638 SM4638 Dirrington Little Law, cairn on summit of, **CHVP04** (Volume 3c, **Figure 10.7**), from HER 57449 Twinlaw, Twinlaw Cairns indicates that in addition to the Proposed Development being visible behind Dirrington Little Law, the Wedderlie Farm Wind Farm which is at scoping stage would be visible in the space between the two ranges of hills. Regardless of the final Wedderlie

Farm Wind Farm layout, given the position of this proposed development site, turbines would be visible in this view. It is acknowledged that as the project is at scoping stage, this application may not ultimately be submitted. Considering the two proposed development cumulatively, it is considered that views from Twin Law do not contribute to the cultural significance of SM4626 Dirrington Great Law, three cairns and SM4638 Dirrington Little Law, cairn on summit of. At a distance of 6.5-7.3 km, they are barely visible. It would remain possible to appreciate that hilltops were sometimes used for the raising of funerary monuments in the Bronze Age period, and that intervisibility between these hilltops would remain possible should both the proposed developments be constructed. The same conclusion is drawn in views from Dunside Hill as indicated on **Wireline CHVP05** (Volume 3c, **Figure 10.8**) from SM12507 Dunside Hill, cairn 1225m S of Byrecleugh.

10.7.13. An assessment considering the combined visibility of the cumulative developments would not increase the assessed impact magnitude concluded for the Proposed Development in isolation. No cumulative effects are predicted.

SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head and SM4580 Raecleugh Head, fort 150m W of

10.7.14. Visible from SM377, there are one scoping (Wedderlie, 8.3 km to the west) and one application (Dunside, 12.6 km to the west) wind developments.

10.7.15. The cumulative developments shown on **CHVP06** (Volume 3c, **Figure 10.9**) would not impact upon the cultural significance of SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head and SM4580 Raecleugh Head, fort 150m W of.

10.7.16. In terms of views towards SM377 Raecleugh Head, fort 275m NW of, SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head and SM4580 Raecleugh Head, fort 150m W of on approach from the south, **Photomontage LVIA VP06** (Volume 3c, **Figure 6.17**), indicates that no cumulative developments would be visible. Similarly, no cumulative developments would be visible from viewpoint **CHVP07** (Volume 3c, **Figure 10.10**), the potential easterly approach towards the forts.

10.7.17. An assessment considering the combined visibility of the cumulative developments would not increase the assessed impact magnitude concluded for the Proposed Development in isolation. No cumulative effects are predicted.

10.8. Mitigation and Residual Effects

Embedded Mitigation

10.8.1. The preferred mitigation option in respect of direct physical impacts is always to avoid or reduce impacts through design (embedded mitigation), followed by precautionary measures such as fencing off of heritage assets during construction works. Impacts which cannot be eliminated in these ways will lead to residual effects.

10.8.2. See design evolution and the embedded mitigation measures by design in **Chapter 3: Site Selection and Design Evolution**.

10.8.3. Direct physical impacts upon known heritage assets within the Proposed Development Site have been minimised through the design process. The proposed infrastructure layout including the OEMP has been designed to avoid as far as possible known heritage assets identified through the Cultural Heritage Baseline and Stage 1 Setting Assessment (Volume 4, **Appendix 10.1**).

10.8.4. In relation to the setting of heritage assets and the operation of the Proposed Development, following engagement and consultation with HES, the Applicant committed to a redesign as reflected in the submitted layout which aimed to mitigate potential adverse impacts upon SM4638 Dirrington Little Law, cairn on summit of as viewed from HER 57449 Twin Law, Twinlaw Cairns. The Applicant considers that through the relocation of Turbine 2 100 m to the north, such that it would not directly backdrop SM4638, any perceived adverse impacts upon the cultural significance of heritage assets assessed has been minimised as far as reasonably possible, to a magnitude that is not significant in EIA,

Additional Mitigation

Mitigation During Construction

10.8.5. Construction impacts on Foul Burn rig and furrow earthworks (159624) and Well Cleugh cultivation remains (87537) are of **Negligible Significance** and no mitigation is proposed. It is considered that as surface earthworks, their extent is effectively recorded through LIDAR data and that excavation of below ground remains is unlikely to yield data of archaeological significance.

10.8.6. Mitigation is proposed to be secured by condition to ensure that any accidental damage to Scheduled Monument SM4548 Hen Law, cairn 1550m WNW of Langtonlees, located within the Proposed Development Site, is avoided during construction works. Accidental impacts will be mitigated by fencing off the asset with free standing (non-intrusive) fencing prior to construction commencing. The Scheduled Monument will be marked on project plans, and contractors will be given a toolbox talk to provide information on the legally protected status of the monument and the requirement to avoid this area. Specification for the fencing of SM4548 would be agreed through a Written Scheme of Investigation (WSI) produced in consultation with HES (and SBC if necessary) in advance of construction.

10.8.7. Impacts on currently undiscovered archaeological remains within the Proposed Development Site may occur during the construction phase. A programme of archaeological fieldworks implemented in advance of and/or during construction would identify any archaeological remains and allows for impacts upon them to be mitigated by avoidance and preservation *in situ* where possible, or otherwise by excavation and recording. Archaeological monitoring required by condition over some or all construction groundworks for the Proposed Development would be agreed through a Written Scheme of Investigation (WSI) produced in consultation with SBC in advance of construction. Appropriate mitigation will be agreed in accordance with the guidance in Part 6 (Historic Environment/Archaeology) of NatureScot's Good Practice During Wind Farm Construction (NatureScot, 2019).

10.8.8. Construction impacts will therefore be offset by excavation and recording of the remains in accordance with PAN2/2011, sections 25-27, and SBC LDP1 Policy EP8.

Mitigation During Operation

10.8.9. Adverse operational effects of **Minor Significance** are predicted upon:

- SM4548 Hen Law, cairn 1550m WNW of Langtonlees
- SM4626 Dirrington Great Law, three cairns
- SM4638 Dirrington Little Law, cairn on summit of
- SM377 Raecleugh Head, fort 275m NW of
- SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head
- SM4580 Raecleugh Head, fort 150m W of

10.8.10. These effects are **Not Significant** in EIA terms and no additional mitigation beyond the applied mitigation embedded in the design of the Proposed Development is proposed.

Residual Effects

Construction

10.8.11. No mitigation is proposed for identified direct physical construction impacts on Foul Burn rig and furrow earthworks (159624) and Well Cleugh cultivation remains (87537) therefore residual physical construction phase effects for these assets would remain of **Negligible Significance**.

10.8.12. Following implementation of the proposed additional mitigation (implementation of a programme of archaeological fieldworks in accordance with a WSI) for the protection with fencing of SM4548 Hen Law, cairn 1550m WNW of Langtonlees during construction, and for potential direct physical construction impacts upon hitherto unknown remains within the Proposed Development Site ('archaeological potential') there would be **no residual physical construction phase effects**.

10.8.13. Overall, there would be no significant residual physical construction phase effects.

Operation

10.8.14. In respect of the setting of heritage assets, no additional mitigation is proposed and therefore residual adverse operational effects which are **Minor** and **Not Significant** are predicted upon six Scheduled Monuments:

- SM4548 Hen Law, cairn 1550m WNW of Langtonlees
- SM4626 Dirrington Great Law, three cairns
- SM4638 SM4638 Dirrington Little Law, cairn on summit of
- SM377 Raecleugh Head, fort 275m NW of
- SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head
- SM4580 Raecleugh Head, fort 150m W of

10.8.15. Overall, there would be no significant residual operational phase effects.

10.9. Conclusions

10.9.1. A desk-based baseline assessment including a 'Stage 1' setting assessment was undertaken to identify known heritage assets and the potential for currently unrecorded assets to be present within the Proposed Development Site, as well as assets in the wider landscape which may be impacted by the Proposed Development through changes to their setting. A final list of receptors was agreed with Historic Environment Scotland and Scottish Borders Council and taken forward for assessment as part of this Environmental Impact Assessment Report.

10.9.2. The assessment of effects has considered potential direct/indirect physical impacts related to construction of the Proposed Development on the fabric of a heritage asset and impacts on the setting of a heritage asset that could affect its cultural significance.

10.9.3. There are 19 known heritage assets located within the Proposed Development Site (**Table 10.5**) (Volume 3a, **Figure 10.1**). Impact assessment identifies that c.4 ha of a total 5.7 ha area of an area of rig and furrow (Foul Burn 159624), rig and furrow earthworks, of low (local) importance, would be covered over by the proposed solar development area and would be physically impacted where the footings require ground contact for foundations and for cable routes, inverters/transformers. Alongside Wellcleugh Burn, the HER records 87537 Well Cleugh Cultivation Remains and Sheepfold (HA09). Surface earthworks comprising embanked field boundaries enclosing rig and furrow earthworks are visible in LIDAR data; these extend beyond the area as defined by the HER to cover an area of c.1.2 ha. The

earthwork remains are of low (local) importance. Impact assessment identifies that the area would be covered entirely by OEMP woodland planting, except for the sheepfold HA09 which would be preserved in a clearing with a 10 m buffer. There is a potential for the planting of trees and subsequent root action to damage the surface earthworks, however, the extent of physical damage would be minimal. It is expected that it would remain possible to appreciate the presence of the earthworks within the woodlands, and any artefactual remains present would remain in situ. OEMP would result in an adverse impact of slight magnitude and **Negligible Significance** which is **Not Significant**. No impact is anticipated upon sheepfold HA09. Construction phase direct physical impacts upon known heritage assets are of **Negligible Significance** which are **Not Significant**.

10.9.4. No construction phase indirect impacts are predicted as a result of the Proposed Development.

10.9.5. The Proposed Development Site is considered to hold a general low archaeological potential for hitherto unknown archaeological remains. This potential is increased slightly in the vicinity of the Scheduled Monument SM4558 Hen Law, Cairn 1550m WNW Of Langtonlees. Direct physical construction impacts on previously unknown heritage assets in the Proposed Development Site is therefore unlikely but possible. Any adverse effect resulting from a direct physical impact upon archaeological remains discovered during construction-phase may be of up to **Minor Significance**, which is **Not Significant**.

10.9.6. Construction impacts on Foul Burn rig and furrow earthworks (159624) and Well Cleugh cultivation remains (87537) are of **Negligible Significance** and no mitigation is proposed. Mitigation is proposed to be secured by condition to ensure that any accidental damage to Scheduled Monument SM4548 Hen Law, cairn 1550m WNW of Langtonlees, located within the Proposed Development Site, is avoided during construction works by fencing off the asset with free standing (non-intrusive) fencing prior to construction commencing. Impacts on currently undiscovered archaeological remains within the Proposed Development Site may occur during the construction phase. A programme of archaeological fieldworks implemented in advance of and/or during construction would identify any archaeological remains and allows for impacts upon them to be mitigated by avoidance and preservation *in situ* where possible, or otherwise by excavation and recording. Archaeological monitoring required by condition over construction groundworks for the Proposed Development and a specification for the fencing of SM4548 would be agreed through a Written Scheme of Investigation (WSI) produced in consultation with HES and SBC in advance of construction. Following implementation of the proposed additional mitigation for construction impacts upon hitherto unknown remains within the Proposed Development Site ('archaeological potential') there would be **no residual physical construction phase effects**. Overall, there would be **no significant residual physical construction phase effects**.

10.9.7. A Stage 1 Setting Assessment (Volume 4, **Technical Appendix 10.1**) found the potential for operational effects as a result of the Proposed Development through changes within their setting on the cultural significance of two Inventory Gardens and Designed Landscapes, seven Scheduled Monuments, four Listed Buildings, and one non-designated heritage asset (**Table 10.7**). In respect of the setting of heritage assets, no additional mitigation is proposed and therefore residual adverse operational effects of **Minor Significance** are predicted upon:

- SM4548 Hen Law, cairn 1550m WNW of Langtonlees
- SM4626 Dirrington Great Law, three cairns
- SM4638 SM4638 Dirrington Little Law, cairn on summit of
- SM377 Raecleugh Head, fort 275m NW of
- SM378 Raecleugh Head Hill, fort 690m NNW of Raecleugh Head

- SM4580 Raecleugh Head, fort 150m W of

10.9.8. Overall, there would be no significant residual operational phase effects.

10.9.9. No significant cumulative effects are predicted.

10.9.10. **No significant residual effects** upon cultural heritage have been identified through EIA as presented in this chapter. In terms of Policy 7(h) of NPF4, the integrity of the setting of the six Scheduled Monuments assessed in this chapter would not be significantly adversely affected as a result of the Proposed Development. In terms of Policy 7(o) of NPF4, the non-designated heritage assets within the Proposed Development Site have been avoided as far as practicable; where direct impacts are predicted, appropriate mitigation has been proposed.

10.10. Statement of Competence

10.10.1. This assessment was undertaken by Headland Archaeology (UK) Ltd, a Registered Organisation with the Chartered Institute for Archaeologists, an audited status which ensures that it operates to the highest professional standards in the historic environment. Author, Owen Raybould BSc (Hons) MCIfA IHBC has 21 years of professional experience in the historic environment sector. He leads on wind farm work at Headland and has undertaken responsible work in Environmental Impact Assessment and historic environment consultancy since 2007. Through the management of projects relating to the historic environment, and the provision of supporting planning documentation over this period, Owen has an in-depth understanding of legislation, policy, regulation and guidance and approach to EIA. Owen is currently actively involved in the management and delivery of multiple wind farm EIA projects in Scotland.

10.10.2. This assessment has been reviewed by Dr Stephen Carter BSc (Joint Hons) PhD MCIfA FSA Scot. Stephen has 34 years of professional experience in the historic environment sector and has been involved in environmental impact assessment since 1998. He has specialised in onshore wind energy projects since 2008, developing considerable experience of projects in all parts of the UK. He has particular experience of the analysis of setting of heritage assets and has acted as an expert witness in over 50 hearings and public inquires for onshore wind projects.