

11 Cultural Heritage and Archaeology

Introduction

- 11.1 This chapter considers the potential effects of the proposed wind farm (as defined in **Chapter 4: Development Description**) on cultural heritage assets. The assessment was undertaken by CFA Archaeology Ltd using information provided by Historic Scotland, Dumfries and Galloway Council (DGC) Archaeology Service, and the results of previous reconnaissance field survey work carried out in 2006 by Headland Archaeology Ltd¹.
- 11.2 Cultural heritage assets include sites and monuments with statutory and non-statutory designations as set out in Scottish Planning Policy.
- 11.3 Assets with statutory designations include:
- Scheduled Monuments;
 - Listed Buildings; and
 - Conservation Areas.
- 11.4 Assets with non-statutory designations include:
- World Heritage Sites;
 - Gardens and Designed Landscapes;
 - Historic Battlefields; and
 - other historic environment interests.
- 11.5 The assessment evaluates the effects of the proposed wind farm on the following cultural heritage assets as other statutory and non statutory asset types are not present within the study area:
- Scheduled Monuments and other archaeological features;
 - Listed Buildings;
 - Conservation Areas; and
 - Non-Inventory Gardens and Designed Landscapes.
- 11.6 The assessment was conducted in accordance with the Institute for Archaeologists Code of Conduct (IfA 2010²), and Standard and Guidance for Archaeologist Desk-based Assessment (IfA 2009³). Reference was also made to the relevant statutory and planning framework for cultural heritage which is considered further in the next section. The methodology used for the assessment was approved by Historic Scotland and by DGC Archaeology Service.

¹ Solwaybank Environmental Statement 2009: Chapter 9 - Archaeology

² Institute for Archaeologists (IfA) (2010) 'By-Laws: Code of Conduct'. Institute for Archaeologists.

³ Institute for Archaeologists (IfA) (2009); 'Standard and guidance for archaeological desk-based assessment'. Institute for Archaeologists.

Legislation and Policy Context

National Legislation and Policy

- 11.7 Improving the state of Scotland's historic buildings, monuments and environment is identified as a national indicator and target under the Scottish Government's National Performance Framework⁴. The Scottish Historic Environment Policy⁵ (SHEP) sets out Scottish Ministers' policies for the historic environment. It provides policy direction for Historic Scotland and a framework that informs the day-to-day work of a range of organisations that have a role and interest in managing Scotland's historic environment. Through the implementation of the SHEP, Scottish Ministers wish to achieve three outcomes for Scotland's historic environment:
- That the historic environment is cared for, protected and enhanced for the benefit of our own and future generations.
 - To secure greater economic benefits from the historic environment.
 - That the people of Scotland and visitors to our country value, understand and enjoy the historic environment.
- 11.8 Scottish Planning Policy⁶ (SPP) requires that planning authorities ensure that Development Plans provide a framework for the protection, conservation and enhancement of the historic environment to allow the assessment of the effect of the proposed wind farm on the historic environment and its setting (para 112).
- 11.9 Planning Advice Note (PAN) 2/2011⁷: Planning and Archaeology advises that, in determining planning applications, planning authorities should take into account the relative importance of archaeological sites (para 5). It also notes that in determining planning applications that may have effects on archaeological features or their setting, planning authorities may on occasion have to balance the benefits of development against the importance of archaeological features (para 6). The desirability of preserving a monument (whether scheduled or not) is a material consideration and the objective should be to assure the protection and enhancement of monuments by preservation in situ, in an appropriate setting. When preservation in situ is not possible, recording and/or excavation followed by analysis and publication of the results may be an acceptable alternative (para 14).

Sites with Statutory Designations

Scheduled Monuments

- 11.10 Under the Ancient Monuments and Archaeological Areas Act 1979⁸ (1979 Act), the Scottish Ministers are required to compile and maintain a schedule of monuments considered to be of importance. The consent of the Scottish Ministers is required before any works are carried out which would have

⁴ The Scottish Government (2007) 'Scottish Budget Spending Review 2007' (Chapter 8)

⁵ Historic Scotland (2009) 'Scottish Historic Environment Policy'

⁶ The Scottish Government (2010) 'Scottish Planning Policy'

⁷ The Scottish Government (2011) 'Planning Advice Note 2/2011: Planning and Archaeology'

⁸ HMSO (1979) 'The Ancient Monuments and Archaeological Areas Act 1979' (Reprinted 1996)

the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Monument. In addition, effects of proposed development works upon the setting of a Scheduled Monument form an important consideration in the granting or refusal of planning consent to conduct development works.

Listed Buildings

11.11 Under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997⁹ (1997 Act), the Scottish Ministers are required to compile a list of buildings of special architectural or historic interest. Such buildings are classified into Categories A, B and C(S), in decreasing order of importance. Planning authorities and the Scottish Ministers are required to have special regard for the desirability of preserving Listed Buildings and their settings and any features of special architectural or historic importance they possess.

Gardens and Designed Landscapes

11.12 The effect of a development on a designated Garden or Designed Landscape listed in the 'Inventory of Gardens and Designed Landscapes in Scotland'¹⁰ is a material consideration in the determination of a planning application, although the designation is non-statutory in effect. Under the provisions of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008¹¹, planning authorities must consult Historic Scotland on any development that may affect a site contained in the Inventory. Non-Inventory historic Gardens and Designed Landscapes that do not merit inclusion in the Inventory are designated by local authorities and are included in Local Plans.

Conservation Areas

11.13 Under the 1997 Act¹², areas of special architectural or historic interest can be designated by local authorities as Conservation Areas, the character or appearance of which it is desirable to preserve or enhance. Planning authorities are required to consider planning applications affecting the appearance, character or setting of Conservation Areas.

Other Historic Environment Interests

11.14 There is a range of other non-designated archaeological sites, monuments and areas of historic interest, including battlefields, historic landscapes, other gardens and designed landscapes, woodlands and routes such as drove roads that do not have statutory protection. Assets without statutory protection are curated by the local authority, and SPP and PAN 2/2011 provide national planning policy guidance and advice on the treatment of such resources.

11.15 There are no World Heritage Sites, Historic Battlefields or Inventory status Gardens and Designed Landscapes within the 10 km radius study area (shown on Figure 11.2). However, in response to consultation with DGC Archaeology Service, some additional receptors outside the 10km study area, such as Hadians Wall and Caerlaverock Castle, have been included in the assessment.

⁹ The Scottish Government '(1997) The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997'

¹⁰ Historic Scotland (1987) 'Inventory of Gardens and Designed Landscapes in Scotland'

¹¹ The Scottish Government '(2008) The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008'

¹² See ref 16 above

Regional/Local Policy

11.16 Dumfries and Galloway Structure Plan (DGSP) 1999¹³ and the Annandale and Eskdale Local Plan (AELP) 2006¹⁴ contain policies that provide a framework for the conservation and enhancement of the urban and rural environment and protection of the diversity of the natural and cultural heritage. These policies are discussed in Chapter 2: Planning Policy Context.

Effects Assessed in Full

11.17 The following effects have been assessed in full:

- Direct effects on all cultural heritage assets, either designated or non-designated, within the site and 500 m from the site (defined on Figure 11.1).
- Indirect effects on designated cultural heritage assets (within a 10 km radius of the proposed wind farm, as shown on Figure 11.2) including: Scheduled Monuments; non-statutory register (NSR) sites potentially of schedulable quality; Listed Buildings; Conservation Areas; and Gardens and Designed Landscapes that have been identified from the Zone of Theoretical Visibility (ZTV) to have a theoretical intervisibility with the turbines.
- Cumulative effects on cultural heritage assets of the proposed wind farm in combination with other existing or proposed wind farm developments in the wider landscape as shown on Figure 11.3 which shows the cultural heritage assets considered by the assessment within a 10 km radius of the site and the cumulative ZTV for other wind farm proposals within the 35 km Landscape and Visual Amenity Impact Assessment (LVIA) study area.

Effects Scoped Out

11.18 Effects arising from the process of decommissioning have been scoped out since they are of a similar nature to construction issues, but of a smaller scale. No significant effects would occur during the decommissioning of the project, presuming that the same road infrastructure is used for the dismantling and removal of the built features of the proposed wind farm. The removal of the wind turbines would also have a beneficial effect, removing any adverse effects of the proposed wind farm on the settings of affected cultural heritage assets.

Issues Identified during Consultation

11.19 Consultation letters were sent (22/04/2011) to Historic Scotland and to the DGC Archaeology Service to obtain their opinion on the likely effects of the proposed wind farm and to obtain information on cultural heritage resources. A consultation letter (22/04/2011) was also sent to the Dumfries and Galloway Natural History and Antiquarian Society to obtain information on any unreported archaeological sites or finds within or in the vicinity of the study area, and to seek their opinion on the potential for the proposed wind farm to affect any local history or archaeological interest. No other cultural heritage consultees were identified.

11.20 The previous comments made from consultees on the application for the original Solwaybank ES submitted in 2009 have also been reviewed. The issues identified through all relevant consultation responses are summarised below.

¹³ Dumfries and Galloway Council (1999) 'Dumfries and Galloway Structure Plan'

¹⁴ Dumfries and Galloway Council (2006) 'Annandale and Eskdale Local Plan'

11.21 The methodology employed in the assessment was approved by Historic Scotland and DGC Archaeology Service.

Table 11.1: Issues Identified during Consultation

Consultee	Scoping/Other Consultation	Issue Raised	Response/Action Taken
Historic Scotland	Scoping Opinion (22.02.2009)	<p>Provided a list of sites impacts on whose settings should be considered in the ES:</p> <p>Scheduled Monuments:</p> <p>Callisterhall, farmstead 400m NNE of (Index No. 4520); Callisterhall, cairn 1100m NE of (Index No. 4519); Bloch Farm, enclosure 600m N of (Index No. 4690) Cleuchfoot, farmstead 1500 NE of (Index No. 4687)</p> <p>Gibb's Hill, unenclosed settlement, palisaded settlements and houses (index No. 4518); Callisterhall, cairn 2550m NNE of (Index No. 4535); Cockgair Hill, settlement (Index No. 4397) (alternate name: Greencleuch Cottage, settlement 1550m NNW of); Birrens Hill, fort 640m W of Carruthers, Waterbeck (Index No. 645); Timpanheck Cottage, cursus 340m WNW of (Index No. 11964); Kirkconnel old church and graveyard, 520m WNW of Springkell (Index No. 11988); Blacket House Tower (Index No. 10431); Chalkyhill Wood, settlement 320m SW of Cairnhill (Index No. 11990); Crawthat Cottage, fort 1600m SE of Paddockhole Bridge (Index No. 652); (Note: Site removed from Schedule - 22 September 2009) Newhall Hill, enclosures (Index No. 3963); Scots' Dike, boundary earthwork, Scotsdike Plantation (Index No. 660); Old Irvine, settlement 600m NNW of (Index No. 4406).</p> <p>Category A Listed Buildings:</p> <p>Springkell House (HB NUM 9805); Tarrasfoot Tile Works (HB NUM 3535); Hollows or Gilnockie Tower (HB NUM 3527).</p> <p>Also indicated that any Environmental Statement (ES) should contain an assessment of the potential indirect impact on all nationally important sites in the vicinity of the wind turbines. The analysis should contain appropriate visualisations.</p>	<p>Considered in Potential Effects Section below (Chapter 11).</p>
Historic Scotland	ES response (23/07/2009)	<p>Disputed the results of the 2009 assessment on the following Scheduled Monuments:</p> <p>Caerlaverock Castle and Old Castle, castles, courtyards and harbour (Index No 90046) - minor not minor/moderate;</p>	<p>A revised methodology for the assessment was supplied to Historic Scotland on</p>

Consultee	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		<p>Callisterhall, cairn 1100m NE of (Index No. 4519) - minor not negligible; and Callisterhall, cairn 2550m NNE of (Index No. 4535) - minor not negligible</p> <p>Expressed some concerns with the level of information contained in the 2009 ES for their statutory interests and, in particular, the methodology employed to assess effects on the settings of historic environment assets. However, broadly accepted the conclusions reached in the 2009 ES that any effects are not at such a level of significance to warrant an objection on their part.</p> <p>Concluded that the overall assessment of the effect on the settings of the designed landscapes (assessed in Chapter 8: Landscape and Visual) is negligible / minor.</p>	<p>22/04/2011.</p> <p>Effects on the sites highlighted have been re-evaluated in Potential Effects Section below (Chapter 11).</p> <p>Photomontages for (Caerlaverock Castle LVIA Viewpoint 16) presented.</p>
Historic Scotland	Response to 22/04/2011 consultation letter (13/05/2011)	<p>Did not wish to highlight any features beyond the 10 km setting assessment distance proposed, and would be content that particular attention be given to assessing effects on those sites previously identified in the response to the ES (23/07/2009).</p>	<p>10 km assessment radius for settings of heritage assets adopted.</p>
DGC Archaeology Service	Scoping Opinion(17/02/2009)	<p>Noted that at the time of the original Scoping Opinion (2005) no features of sufficient significance to pose an over-riding constraint to development were recorded within the site boundary in the Council's Sites and Monuments Record.</p> <p>Advised that this remains the position.</p> <p>Noted that just outwith the (then proposed) 5 km assessment zone is Burnswark complex of archaeological remains that have been identified as an Archaeologically Sensitive Area (ASA). Structure Plan Policy E13 and Local Plan Policy GP55 apply. Those policies indicate that the Council will safeguard the character and archaeological interest of these areas.</p> <p>Also, noted that, to the south is the World Heritage Site of Hadrian's Wall and that the proposal is outwith the outer visual envelope, defined by policy LA34.</p> <p>Noted that both Burnswark and Hadrian's Wall had been selected as viewpoints for the assessment of visual effects.</p> <p>Requested that the assessment should take account of the heritage interest of these locations.</p> <p>Drew attention to the fact that within the environs there are a number of archaeological and historic sites promoted as visitor destinations (ref: Stell 1996, Exploring Scotland's Heritage Dumfries and Galloway). These include Burnswark, Birrens Roman Fort complex, Merkland Cross, Arched House, Ecclefechan, Hoddom Castle and Repentance Tower.</p> <p>Recommended that the assessment of indirect effects consider these locations.</p>	<p>No action.</p> <p>Sites evaluated in Potential Effects Section below (Chapter 11).</p> <p>Photomontages for Burnswark ASA (LVIA Viewpoint 9) and Hadrian's Wall WHS LVIA Viewpoint 17) presented.</p>
DGC Archaeology Service	Response to 22/04/2011 consultation	<p>Confirmed that 10 km is an acceptable assessment distance for indirect/setting effects; the actual assessments necessary should be informed by a zone of</p>	<p>10 km assessment radius for settings of heritage assets</p>

Consultee	Scoping/Other Consultation	Issue Raised	Response/Action Taken
	letter (17/05/2011)	theoretical visibility (ZTV). Reiterated earlier advice regarding Burnswark complex (ASA), Hadrian's Wall World Heritage Site (WHS), Birrens Roman Fort complex, Merkland Cross, Arched House, Ecclefechan, Hoddom Castle and Repentance Tower; and all promoted as visitor destinations (Stell 1996). Recommended that the visual effects on the setting and significance of Burnswark and a location on Hadrian's Wall, (selected relative to ZTV), are assessed with photomontages presented.	adopted. Photomontages for Burnswark ASA (LVIA Viewpoint 9) and Hadrian's Wall WHS (LVIA Viewpoint) presented. Photomontages for Hoddom Castle and Repentance Tower (LVIA Viewpoint 12) presented. Other receptors considered in the Potential Effects section below.
DGC Natural History and Antiquarian Society	Consultation letter (22/04/2011)	No response received.	No action.

Assessment Methodology

Baseline Characterisation

11.22 The results of the original cultural heritage baseline study undertaken for the previous ES submitted in 2009 have been augmented by a further desk-based assessment (which covered the whole of the revised site) and included a 500 m buffer beyond the site boundary. The proposed wind farm layout has been developed incorporating the combined results of the two studies (refer to the Wind Farm Layout Considerations section below).

Study Area

11.23 The cultural heritage study area consists of two parts, as described below:

- The site covers over 663 ha and is comprised of roughly equal proportions of commercial conifer forest and open rough pasture and moorland (HLAmap¹⁵). This area, plus a 500 m buffer around it, was used as the study area for the identification of sites that may be directly affected by the construction of the proposed wind farm. Data for sites within 500 m of the site boundary was obtained as this ensured that any sites whose cited grid reference lay outwith the site boundary, but whose extent might partly lie within it, were identified. (None of the sites identified within the 500 m buffer extend into the site boundary).
- A wider study area, extending to a 10 km radius from the centre of the turbine group, provided the study area for the identification of cultural heritage assets with statutory protection (and those with national and regional non-statutory designations) whose settings may be affected by the proposed wind farm.

¹⁵ <http://hla.rcahms.gov.uk/>

- The cumulative effect assessment has taken account of the wind farm developments identified in the assessment of cumulative landscape and visual effects presented in **Chapter 8: Landscape and Visual**. It includes an assessment of those assets highlighted by Historic Scotland and DGC Archaeology Service (Table 11.1).

11.24 Figure 11.1 depicts the proposed wind farm layout and the locations of archaeological sites and historic environment features identified by the study. A gazetteer of those sites within the site boundary is provided in **Appendix 11.1**. **Appendix 11.2** lists those outwith the site boundary but within 500 m of the site boundary.

11.25 Figure 11.2 shows the proposed wind farm in its wider landscape setting together with the ZTV and the locations of key cultural heritage assets within a 10 km radius of the proposed wind farm that have theoretical views of the turbines. **Appendix 11.3** contains a list of those key assets within 5 km of the nearest turbine, where significant effects on the settings of receptors are considered most likely to occur due to the proximity of the proposed wind turbines and their visual prominence¹⁶, and provides a summary assessment of the predicted indirect visual effects, on a site by site basis. **Appendix 11.4** provides a list of the other key assets with predicted intervisibility of the turbines within a 10 km radius. For most receptors within the 5 km to 10 km zone it is considered that they are sufficiently far from the proposed wind farm and are afforded sufficient screening by either topography or other intervening obstructions to visibility (natural or man-made) that the impact on their settings will not be significant. Those sites or monuments cited in scoping and/or consultation responses (see Table 11.1 above) that have no predicted intervisibility with the proposed wind farm are not included in the assessment as there would be no resulting significant effect on their settings.

11.26 Figure 11.3 shows the locations of key cultural heritage assets within a 10 km radius of the proposed wind farm and that have theoretical views of the proposed Solwaybank turbines set against the cumulative ZTV for those other wind farms identified by the LVIA and that are within a 35 km radius of the site. **Appendix 11.5** provides a list of those key cultural heritage sites of national importance within 10 km of the proposed wind farm and any other relevant sites identified through consultation, and an indication of other wind farm visibility as predicted by the cumulative ZTV.

Data Sources

11.27 The results of the previous Archaeology and Cultural Heritage assessment (Headland Archaeology 2009¹⁷) carried out in connection with the 2009 ES and covering the site, were used to inform the baseline. The validity of the baseline data was checked with DGC Archaeology Service and data from the Historic Environment Records (HER) was re-acquired (data in the HER is only guaranteed valid for planning purposes for a maximum of six months). Information on sites of schedulable quality (NSRs), regionally important archaeological sites (ASAs) and locally important non-inventory designed landscapes (NIDLs) within 10 km of the proposed wind farm was also provided by DGC Archaeology Service.

11.28 Data for Scheduled Monuments, Listed Buildings and Gardens and Designed Landscapes within 10 km of the proposed wind farm was obtained from the Historic Scotland Spatial Data Warehouse¹⁸.

¹⁶ Planning Advice Note (PAN) 45 (Revised 2002) : Renewable Energy Technologies (Figure 8)

¹⁷ Solwaybank Wind Farm Environmental Statement 2009, Chapter 9 Archaeology.

¹⁸ <http://hsewsf.sedsh.gov.uk/gisd.html>.

Identification of External Receptors and Characterisation of their Setting

- 11.29 Details were obtained for previously recorded cultural heritage assets with statutory and non-statutory designations; and for undesignated assets of likely national importance, as identified in the HER, and in the landscape surrounding the site. The ZTV generated for the proposed wind farm was used to identify those cultural heritage receptors from where there would be theoretical visibility of one or more of the proposed wind turbines.
- 11.30 Based upon the character of these data, the consultees identified above were consulted to agree an approach to further assessment, i.e. within what radius of the proposed wind farm, effects on setting were to be assessed. It was accepted by both Historic Scotland and the DGC Archaeologist that a 10 km radius, informed by a ZTV, was a sufficient assessment distance for indirect/setting effects. However, five sites were specified in consultation responses that lie beyond 10 km; these are: Arched House, Ecclefechan (HBNUM 10065); Hoddum Castle (HBNUM 3558); Repentance Tower (Index No 706); Caerlaverock Castle and Old Castle, castles, courtyards and harbour (Index No 90046); and Hadrian's Wall WHS. Each of these is considered in the assessment, for potential effects on their settings.
- 11.31 Historic Scotland guidance (2010¹⁹) notes that *“setting should be thought of as the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated. Setting often extends beyond the immediate property boundary of a historic structure into the broader landscape”*. The guidance also suggests that if a proposed development is likely to impact on the setting of a cultural heritage asset, an objective written assessment should be prepared by the applicant to inform the decision-making process. The conclusions drawn by the assessment should take into account the significance of the historic asset and its setting and attempt to quantify the extent of any detrimental impact. The methodology and level of information should be tailored to the circumstances of each case.
- 11.32 The baseline setting of each relevant receptor or related group of receptors was characterised on a case-by-case basis. Characterisation of setting of a receptor has been based upon its properties and location, and takes into account the factors identified in the guidance issued by Historic Scotland. The baseline setting of each receptor is characterised principally in terms of the:
- Archaeological / historical context of the receptor;
 - Current landscape and visual surroundings of the receptor;
 - Aesthetic and experiential properties of the receptor within its surroundings; and
 - Social value (actual or potential) of the receptor as a recreational / leisure or educational resource.
- 11.33 Targeted field visits were undertaken to assess the character and sensitivity of the settings of selected assets (where potentially significant adverse effects were considered most likely to occur), and to assess the effects of the proposed wind farm on those settings.
- 11.34 Analysis of the ZTV indicates that there would be theoretical visibility of the turbines from 35 Scheduled Monuments; four Category A Listed Buildings, 57 Category B Listed Buildings and 33 Category C(S) Buildings; one Conservation Area; five Non-Inventory Gardens and Designed Landscapes, and two Archaeological Sensitive Areas. Those assets within 10 km of the proposed wind farm and predicted by the ZTV to have views of one or more turbines are listed in **Appendices 11.3 and 11.4** and their locations are shown on Figure 11.2.

¹⁹ Managing Change in the Historic Environment

Significance Criteria

- 11.35 The effects of the proposed wind farm on cultural heritage assets are assessed on the basis of their type:
- direct, physical effects affecting the fabric of an asset; and
 - indirect and cumulative effects, affecting the setting, of an asset.
- 11.36 The assessment takes into account the heritage value / sensitivity of the asset and the magnitude of the effect. Mitigation measures designed to prevent, reduce or offset significant adverse effects are proposed, and residual effects are presented taking into account the likely effectiveness of the mitigation proposed.
- 11.37 The assessment of the heritage value / sensitivity of archaeological and heritage assets reflects the relative weight which statute and policy attach to them, principally as published in SPP²⁰ and SHEP²¹. Table 11.2 summarises the relative heritage value / sensitivity of key cultural heritage assets.

Table 11.2 Sensitivity of Cultural Heritage Assets

Heritage Value / Sensitivity	Definition / Criteria
High	Sites of national or international importance, including: World Heritage Sites Scheduled Monuments and sites proposed for scheduling Undesignated archaeological sites and areas of likely national importance identified in HERs / SMRs Category A Listed Buildings Gardens and Designed Landscapes (Inventory sites) Outstanding Conservation Areas Historic Battlefields (Inventory sites) Designated Wreck Sites
Medium	Sites of regional importance, including: Archaeological sites and areas of distinctive regional importance Archaeologically Sensitive Areas (ASA) Category B Listed Buildings Conservation Areas
Low	Sites of local importance, including: Archaeological sites of local importance Category C(S) Listed Buildings Unlisted historic buildings and townscapes with local (vernacular) characteristics
Negligible	Sites of little or no importance, including: Sites of former archaeological features Unlisted buildings of minor historic or architectural interest Poorly preserved examples of particular types of features

²⁰ Scottish Planning Policy, Scottish Government 2010

²¹ Scottish Historic Environment Policy, Historic Scotland 2010

Assessment of Physical Effects

11.38 Criteria for assessing the magnitude of a direct physical effect, which measures the degree of change to the baseline condition of a feature that would result from the construction of one or more element of the proposed wind farm, are presented in Table 11.3.

Table 11.3 Magnitude of Physical Effects

Magnitude of Effect	Description
High	A fundamental material change to the baseline condition of the asset, leading to total or major alteration of character.
Medium	A change to the baseline condition of the asset, leading to a material, partial alteration of character.
Low	Slight, detectable alteration of the baseline condition of the asset.
Imperceptible	A barely distinguishable change from baseline conditions.

11.39 The heritage value / sensitivity of the asset and the magnitude of the predicted effect are then used to inform the professional judgement of the likely significance of the physical effect. Table 11.4 summarises the criteria for assigning significance of a physical effect. It should be noted that this table is a general guide to findings of significance; professional judgement will always be relied upon to determine the likely significance of effect and such findings may differ from those suggested by the table. Major and moderate effects are considered to be significant in terms of the EIA regulations.

Table 11.4 Significance of Physical Effects

Magnitude of Effect ▼	Heritage Value / Sensitivity of Asset▶			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Imperceptible	Minor	Negligible	Negligible	Negligible

Assessment of Effects on Setting

11.40 For each asset, where a potential effect on setting has been identified, the assessment of possible effects has followed a four-stage approach:

- Identification of the characteristics of the setting of the asset (see above).
- Assessment of the sensitivity of that setting.
- Identification of how the presence of the proposed wind farm will affect that setting (magnitude of effect).
- Assessment of significance of effect.

Criteria for Assessing Sensitivity of Setting

11.41 Sensitivity of setting has been assessed by considering two factors:

- The relative weight which statute and policy attach to the asset and its setting (its heritage value / sensitivity to change).
- The degree to which the baseline setting contributes to the understanding and / or appreciation, and thereby value, of the asset.

11.42 The relative weight that statute and policy attach to the asset and its setting is determined using the heritage value / sensitivity of heritage assets set out in Table 11.2. Where individual designated assets are present within larger designated areas (e.g. Listed Buildings within a Conservation Area; Scheduled Monuments within an ASA; the value / sensitivity is stated as the higher of the two designations. Also, where a single monument has two designations (e.g. a Listed Building that is also a Scheduled Monument) the value / sensitivity is stated as the higher of the two designations.

11.43 The degree to which the baseline setting contributes to the understanding and / or appreciation of the assets has been assessed according to the criteria set out in Table 11.5.

Table 11.5 Contribution of Setting to Understanding and Appreciation of a Cultural Heritage Receptor

Contribution of Setting	Definition
High	A setting which makes a strong positive contribution to the understanding and/or appreciation of the siting and/or historical/archaeological/architectural context of a receptor. (e.g. a prominent topographic location; surroundings that include related monuments in close association; surroundings that are believed to be little changed from those when the receptor was created).
Moderate	A setting which makes some positive contribution to the understanding and/or appreciation of the siting and/or historical/archaeological/architectural context of a receptor. (e.g. surroundings that complement the siting and appearance of a receptor, such as the presence of a feature of the rural past within a more recent farming landscape containing little or no urban or industrial development).
Low	A setting which makes little positive contribution to the understanding and/or appreciation of the siting and/or historical/archaeological/architectural context of a receptor. (e.g. where surroundings only partially complement the siting and appearance of a receptor, such as the presence of a feature of the rural past within a partly urbanised or industrialised landscape).
Negligible	A setting which does not contribute positively to the understanding and/or appreciation of the siting and/or historical/archaeological/architectural context of a receptor. (e.g. immediate surroundings, such as of a commercial coniferous single species woodland or an industrial development, that are not relevant to understanding the context of the receptor).

11.44 These two criteria are combined to assess the overall sensitivity of a setting, as set out in Table 11.6.

Table 11.6 Sensitivity of Setting of an asset

Heritage Value / Sensitivity to Change ▼	Contribution of Setting			
	High	Moderate	Low	Negligible
High	High	High	Medium	Low
Medium	High	Medium	Low	Low

Low	Medium	Low	Low	Low
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Identification of Magnitude of Effect on Setting

11.45 Where it has been identified that the setting of an asset is such that there is no potential for it to be affected by the presence of the proposed wind farm, the asset is not considered further in the assessment. For the remaining sites, the magnitude of the effect on the setting has been assessed according to the thresholds in Table 11.7.

Table 11.7 Magnitude of Effects on Setting

Level of Magnitude	Definition
High	Fundamental effects obviously changing the surroundings of a receptor, such that its baseline setting is substantially or totally altered.
Medium	Effects discernibly changing the surroundings of a receptor, such that its baseline setting is partly altered.
Low	Slight, but detectable effects that do not materially alter the baseline setting of the receptor.
Imperceptible	A very slight and barely distinguishable change from baseline conditions

Assessment of Effect Significance

11.46 The significance of an effect on setting depends on both the magnitude of the effect and the sensitivity of the setting of the asset. Table 11.8 presents a matrix that has been used to inform the assessment and is used in combination with professional judgement.

Table 11.8 Significance of Effects on Setting

Magnitude of Effect▼	Sensitivity of Setting►		
	High	Medium	Low
High	Major	Major	Minor
Medium	Major	Moderate	Minor
Low	Minor ²²	Minor	Negligible
Imperceptible	Negligible	Negligible	Negligible

11.47 Significance of effect is classified as major, moderate, minor or negligible, as defined in Table 11.9. Major and moderate effects are considered significant in accordance with the EIA Regulations²³.

Table 11.9 Significance Criteria

Significance of Effect	Definition
Major	A change to the fabric or setting that leads to a substantial and material effect on the character, quality or context of a receptor.

²² A non-material change to the baseline conditions cannot by nature lead to a significant effect. A significant effect arises from a material change to baseline conditions. This distinction explains why this particular significance assessment finding is not 'moderate'.

²³ The Town and Country Planning (Environmental Effect Assessment) (Scotland) Regulations 2011

Significance of Effect	Definition
Moderate	Changes to the fabric or a setting that lead to a partial and material effect on the character, quality or context of a receptor.
Minor	Changes to the fabric or a setting that lead to a detectable but non-material effect on the character, quality or context of a receptor.
Negligible	Changes to the fabric or a setting that lead to, at most, a negligible effect on the character, quality or context of a receptor.

Limitations

11.48 A large part of the site is currently a commercial forest plantation and no detailed field survey has been carried out in this area. Whilst it is unlikely that significant hitherto undiscovered sites or features are well-preserved within the forestry, the possibility cannot be entirely discounted.

Baseline Conditions

Current Baseline within Proposed Wind Farm Site

11.49 There are no Scheduled Monuments and no NSR sites of potential national importance within the site. No part of the proposed wind farm lies within a Conservation Area or Garden and Designed Landscape. Pingle farmhouse (11) is a Category C(S) Listed Building.

11.50 The NMRS and Dumfries and Galloway HER provided records of eight sites (3, 4, 6 - 11) within the site (**Appendix 11.1**) and 17 within 500 m of the site boundary (**Appendix 11.2**).

11.51 One additional site (1) was identified from examination of historical maps and two additional sites (2 and 5) were identified from examination of aerial photographs.

11.52 Details of the 11 sites and features identified within the site are provided in **Appendix 11.1**, their locations are shown on Figure 11.1 and they are discussed thematically below. Numbers in brackets refer to the site numbers as listed in **Appendix 11.1** and shown on Figure 11.1.

Prehistoric Sites

11.53 There are no records pertaining to, and no visible remains of, prehistoric sites or features within the site.

Medieval and Later Settlement Sites

11.54 Woodside (8) appears as a roofed farmhouse on the Ordnance Survey 1st Edition map (1862) along with associated farm buildings that no longer survive and is evidently of at least early 19th century date. The house is currently a private residence. The associated rig and furrow (9), which would have been part of the cultivated arable ground around the farm, is no longer visible on the ground, although its alignment can still be seen on modern aerial photographs. The farmhouse is judged to be of local historic environment importance and of low sensitivity; the former rig is of negligible heritage value / sensitivity.

11.55 Pingle farmhouse and farmsteading (11; 16969) appears as a roofed farmsteading, comprising two ranges of buildings around a central courtyard with a farm track running through the group, on the Ordnance Survey 1st Edition map (1862). The main farm house, which sits alongside and to the south-east end of, the steading is not shown on the 1862 map and is of a later date. The farmsteading survives as depicted on the 1862 map with a later farm building appended to the

north-west end. The farmhouse is a category C(S) Listed Building and is of local historic environment importance and of low sensitivity.

Other sites and features

- 11.56 A bloomery mound (7) is located in Bloomery Wood, approximately 500 m north of Solwaybank Farm (MDG10226). Bloomeries range in date from the Iron Age to near the end of the medieval period, in varying numbers, although some later examples may have survived into the post-medieval period for small ad hoc use²⁴. In this instance, it is likely that the bloomery was in use in the later medieval/post-medieval periods for local purposes associated with the Solwaybank and Pingle farmsteads. The site is of local archaeological importance and low heritage value / sensitivity.
- 11.57 A rectangular sheepfold (1) is depicted on the Ordnance Survey 1st Edition map (1862). Its location is now within commercial forest and its present condition is unknown. If there are any surviving remains, it is judged that they would be of little or no importance and of negligible sensitivity.
- 11.58 Three other enclosures (4, 5 and 10) are the remains of fields of probable post-medieval date and are of lesser than local importance and of negligible heritage value / sensitivity.
- 11.59 Two areas of former rig and furrow cultivation (3 and 6) which no longer survive as visible features on the ground are most probably of post-medieval date and are of little or no importance and of negligible heritage value / sensitivity.
- 11.60 A possible circular enclosure (2), identified as being visible on aerial photographs, was not identified on the ground by the previous survey (Headland 2006); therefore, if it is archaeological in origin, it must be preserved as a buried feature. As its character and condition could not be ascertained, it is of unknown importance. However, as there are numerous records, in the NMRS and SMR, of 'ring enclosures', for which no detailed descriptions are provided, it could be that this feature is another example of this site type. The feature is judged to be potentially of local archaeological importance and of low heritage value / sensitivity.

Assessment of Archaeological Potential of the Site

- 11.61 The land-use pattern and character within the site is of three types²⁵:
- The southernmost part of the site, along the south-east boundary. This area is in use as improved pasture grassland and is divided into regular polygonal fields.
 - The area to the immediate north-west of the above area, comprising the central part of the site. This area is a mixture of drained and un-drained rough pasture moorland.
 - The north-western part of the site. This area is currently covered by a commercial conifer forestry plantation.
- 11.62 Roy's Military Survey Map (1747-54) shows the site as uninhabited and uncultivated hill country. The farmstead at Pingle (11; 16969) is shown and a second farmstead, 'Achinabrig' (Auchinbetrig) (DG7848), which has two large hedged enclosures depicted to the north of it, is also depicted. A possible location for Auchinbetrig is given as being within a shelterbelt woodland 400 m south of Solwaybank farmhouse. An early 18th century (or earlier) origin for these two farmsteads would be consistent with the occurrence, a short way from both, of the bloomery mound (7) for the small scale production of iron for employment in a farming context; an association with 'Auchinbetrig', believed to be of at least 17th century date, seems highly likely. The Ordnance Survey 1st edition

map (1862) shows the area between Gowd Hill, in the north, and Allfornought Hill, in the south, as largely unenclosed uncultivated moorland and rough pasture. To the north of Solwaybank Farm (MDG10226) and north-east of Allfornought Farm (which lies about 1 km to the west-north-west of Solwaybank Farm) the map shows a series of hedged fields along the south-facing slopes of Allfornought Hill; these may be the remains of the enclosures depicted on Roy's map and hint at early land enclosure associated with agricultural improvements in the 18th century. The evidence points to pastoral and limited agricultural exploitation and the potential for archaeological features to survive in this area is higher than in the commercial forestry further north, where planting and tree root activity is likely to have degraded any surviving features that may once have been present either as upstanding features that have not been recognised or as buried features.

- 11.63 The wider landscape, particularly to the north, provides evidence for a prehistoric presence from at least the Bronze Age; for example, burial cairns of that date have been found on Cocklaw, to the west of Westwater Farm (Scheduled Monument 4519; NMRS ref. NY28SE 12), and there is a probable prehistoric settlement north of Bloch Farm (Scheduled Monument 4619; NMRS ref. NY38SW 2). Elsewhere, to the north of the site, there are recorded prehistoric sites along the south-facing slopes from Birny Hill in the west to Tansy Hill in the east. Altitude across the site varies from 114 m AOD (above Ordnance datum) at Solwaybank Farm to 247 m AOD on Gowd Muir and it is likely that this area, close to the Solway Firth, was an attractive location for settlement from early prehistoric times. The archaeological potential of that part of the site which has been unaffected by forestry is therefore judged to be moderate, whilst the archaeological potential of the afforested areas is judged to be low-negligible.
- 11.64 The earlier assessment (Headland 2006) noted that there are small areas of peat recorded in the northern and central parts of the site. The earlier assessment also noted however that the peat is degraded by drainage and forestry and, as such, has low palaeo-environmental potential. The data obtained in 2011 from peat probing along the proposed access route from Pingle, at the proposed locations of the turbines within the open moorland area, and within open rides within the forestry (Chapter 12: Geology, Hydrology and Hydrogeology, Figure 12.1) suggests that, for the most part, peat depths are shallow (less than 0.5 m) but that there are small pockets of deeper peat (up to 3 m deep). Two such areas were identified, within and at the edge of the forestry; one at the head of the Palling Burn close to Turbine 1, where the peat is up to 2.9 m deep, and another at the head of the Collin Burn, between Turbines 2 and 8, where the peat is up to 2.3 m deep (Figure 12.4). Peat depth of 1.9 m was recorded at the location of Turbine 5 and a depth of 1.7 m at the location of Turbine 10, both of which lie in the open moorland areas (although Turbine 10 would be sited in an area that has been subject to modern drainage). The archaeological potential of these areas is judged to be no higher than for elsewhere within the open moorland areas (i.e. moderate).

External Receptors

- 11.65 Those assets within 10 km of the proposed wind farm and predicted by the ZTV to have views of one or more turbines are listed in Appendices 11.3 and 11.4 and their locations are shown on Figure 11.2. Appendix 11.3 provides a summary assessment of the predicted effects on assets within 5 km of the nearest proposed turbine on a site-by-site basis, using the criteria detailed in paragraphs 11.41-11.49.
- 11.66 Analysis of the ZTV indicates that there would be theoretical visibility of the turbines from 35 Scheduled Monuments; four Category A Listed Buildings, 57 Category B Listed Buildings and 33

²⁴ www.Keystothepast.info (Durham and Northumberland County Councils) glossary

²⁵ HLAmap

Category C(S) Buildings; one Conservation Area; five Non-Inventory Gardens and Designed Landscapes, and two Archaeological Sensitive Areas.

- 11.67 There are four operational wind farms in the wider landscape and which are part of the baseline environment within which the heritage assets noted above are located. These are Minsca, Craig (Carlesgill), Dalswinton and Great Orton Wind Farms.

Future Baseline ('Do-nothing' Scenario)

- 11.68 Should the proposed wind farm not proceed, it is unclear what development pressures there would be on this landscape and on the archaeological potential of the site. The southern part of the site is currently exploited only as rough grazing whilst the northern part of site is used for commercial forestry. This situation could change and forestry proposals brought forward to extend across the southern part of the site. Although there are no such forestry proposals in place or in draft form at present, if such proposals were taken forward, there would be an adverse effect on any buried archaeological remains that might be preserved as buried features. If the current land-use were to persist however, there would be no significant short to medium term change to the archaeological potential of the site as only natural erosion and weathering processes would be active.
- 11.69 If the proposed wind farm were not to be constructed, the settings of the heritage assets may still change dependent upon the progress of other wind farm proposals either currently being brought forward or that may be proposed at some future date. There is also continuing exploitation of the surrounding hills and moorland for forestry developments which can also affect the settings of heritage assets.

Wind Farm Layout Considerations

- 11.70 Notwithstanding the 2009 Scoping Opinion of DGC which stated that there are no features of sufficient significance recorded within the site to pose an over-riding constraint to development, the layout of the proposed wind farm has been designed to avoid, as far as possible, any direct effect on the archaeological potential of the site. The majority of turbines are sited within the forest area which, as described above, is of lower archaeological potential. Only five turbines are proposed within the southern, moorland, area.
- 11.71 The results of the 2009 reconnaissance field survey, updated through additional desk-based study, were provided to the wind farm design team, with the locations and extents of cultural heritage sites and features demarcated. Sites and features were recorded as (i) point locations: for individual features; (ii) linear representation: for field boundaries; or (iii) areas: where a site was found to cover a definable extent.
- 11.72 The layout of the wind farm, including the positioning of the turbines, access tracks and other infrastructure elements, has been designed through a series of iterative stages to develop the best layout within the context of all environmental and technical constraints. The layout shown on Figure 11.1 therefore embeds design based mitigation into the siting of the turbines and ancillary development constraints wherever possible. The final design has avoided all known cultural heritage sites.

Potential Effects

Potential Construction Effects

- 11.73 The layout of the proposed wind farm has avoided all identified cultural heritage features and, as a result, there will be no direct effect on any previously recorded sites or features of historic environment interest.
- 11.74 There is some unavoidable potential for direct effects on any hitherto undiscovered, buried archaeological sites, features or deposits. A direct effect on any buried remains that may be encountered during construction works, and which cannot be preserved in situ, is likely to be of high magnitude; and it is likely that any features are likely to be of low sensitivity. The resulting effect would be of moderate significance, but would be reduced by appropriate mitigation (see below).

Potential Operational Effects

- 11.75 Cultural heritage receptors within a 10 km radius of the proposed wind farm and predicted by the ZTV to have views of one or more turbines are shown on Figure 11.2. Hoddon Castle (3558) and Repentance Tower (Index No 706; 3570), both of which lie just beyond 10 km of the proposed wind farm and to the south-west, are included on Figure 11.2 as they were identified by DGC Archaeology Service as promoted visitor sites and the ZTV shows that both have some degree of intervisibility. Caerlaverock Castle and Old Castle, castles, courtyards and harbour (Index No 90046) and Hadrian's Wall WHS, both of which lie almost 30km from the proposed wind farm, are not shown on Figure 11.2. Caerlaverock is on the Solway coast 30 km to the south-west and 10 km south-south-east of Dumfries. Hadrian's Wall WHS lies across the border with England, is 30 km to the south-south-east of the proposed wind farm, and runs eastwards from Carlisle. Four of the sites identified by Historic Scotland in the 2009 Scoping Opinion (Gibbs Hill, enclosed settlement (4518), Crawthat Cottage, fort (652) (descheduled in September 2009), Old Irvine, settlement (4406) and Hollows or Gilnockie Tower (3527)) have no predicted visibility of any turbines and so are not assessed.
- 11.76 Appendix 11.3 contains a list of those key receptors within 5 km of the outermost turbines, where significant effects on the settings of receptors are considered most likely to occur²⁶. This appendix provides a tabulated, summary assessment of the predicted effects using the criteria and approach detailed above (Tables 11.2 and 11.5 - 11.9). Receptors between 5 km and 10 km are listed in Appendix 11.4. For most receptors within this 5 km to 10 km zone, it is considered that they are sufficiently far from the proposed wind farm and are afforded sufficient screening by either topography or other intervening obstructions to visibility (natural or man-made) that the impact on their settings will not be significant. Those receptors specifically identified by Historic Scotland and/or by Dumfries and Galloway Archaeology Service in their responses to the 2009 ES and in their 2011 consultation responses are addressed in detail below.
- 11.77 Historic Scotland (13/05/2011) expressed the view that it was content that particular attention be given to assessing effects on those sites previously identified in the response to the ES (23/07/2009)(see Table 11.1). The DGC Archaeology Service additionally highlighted a number of promoted sites, including Burnswark ASA (Index No 667), Birrens Roman Fort complex (Index No 666), Merkland Cross (Index No 90217), Arched House, Ecclefechan (HBNUM 10065), Hoddon Castle

²⁶ Planning Advice Note (PAN) 45 (Revised 2002) : Renewable Energy Technologies (Figure 8)

- (HBNUM 3558) and Repentance Tower (Index No 706). These sites are considered in the following paragraphs.
- 11.78 Analysis of the ZTV shows that there would be no visibility of the proposed wind farm either from Merkland Cross (Index No 90217) or from Arched House, Ecclefechan (HBNUM 10065), therefore these are not considered further.
- 11.79 The assessment of magnitude of effect is provided in Appendix 11.3. The significance of effect predicted has been based on analysis of the blade tip ZTV, taking into account the distance of the assessed receptor from the proposed wind farm and the number of turbine blade tips visible, combined with an appraisal of the receptor's character and current landscape setting. The ZTV model is, however, a coarse predictive tool, based on bare-earth surface topography and maximum blade-tip heights. It takes no account of obstructions to intervisibility caused by existing forest and other vegetation or buildings and other man-made features. Therefore, professional judgement has been used to arrive at the final conclusions drawn in the following assessments.
- 11.80 The Scheduled Monument **Callisterhall, cairn 1100m NE of (4519)** lies in rough pasture moorland approximately 2 km north of the nearest proposed turbine. The monument comprises the mutilated turf-covered remains of a Bronze Age burial cairn that lies just off the east side of the summit area of a sloping ridge. It is around 8 m in diameter and stands 0.6 m high. The cairn has been cut by a 1.8 m wide, 0.7 m deep trench. Views to the west and north from the cairn are largely constrained by topography and the best and longest views are towards the south-east. The proposed wind farm would be visible beyond the near horizon formed by the ridge on which the cairn lies and set against the skyline to the south-south-west. The nearest turbine would be 2 km distant and all 15 turbines would be visible. The cairn stands in a fairly prominent topographic location and lies in an area where there are related monuments of probable similar date, especially a group to the north (e.g. 4397, 4518, 4535 and 12762, and other, non-scheduled features). On this basis, the setting of the monument provides a strong contribution to its value and its setting therefore has a high sensitivity to change. However, the effect of the proposed wind farm on the setting and value of the monument would be of low magnitude. Whilst the proposed wind farm would be a detectable new development in the landscape, the wider landscape is already subject to change, in its development for commercial forestry and with the operational Minsca and Craig wind farms already present within the wider setting of, and visible from, the cairn. The introduction of the proposed wind farm would therefore not represent a material change to the setting of the cairn and the effect would be of minor significance.
- 11.81 **Callisterhall, cairn 2550m NNE of (4535)** is the remains of a Bronze Age burial cairn 6 m in diameter and 0.3 m in height, situated on a gently sloping shelf on the southern flank of Cockgair Hill. Views to the north are considerably constrained by rising ground but views southwards are long and strongly focussed down the valley of the Glentenmont Burn towards lower lying ground in the distance. The cairn stands amidst a group of related sites and monuments of probable similar date. As the setting of the cairn provides a positive contribution to its value, its setting has a high sensitivity to change. However, the effect of the proposed wind farm on the setting and value of the cairn would be of low magnitude. The nearest proposed turbine would be approximately 4 km from the cairn, towards the south-south-west, and the proposed wind farm as a whole would be partly screened by the high ground of Raes Knowes and Standingstone Edge. Whilst the wind farm would be a detectable new development in the landscape, the wider landscape is already subject to change, in its development for commercial forestry and with the operational Minsca and Craig wind farms already present within the wider setting of the cairn. The introduction of the proposed wind farm would therefore not represent a material change to the setting of the cairn and the effect would be of minor significance.
- 11.82 **Burnswark ASA** is described as “*a flat-topped hill, visible throughout Lower Annandale, and the setting for an excellent suite of archaeological remains. On the summit there is a Bronze Age cairn, the region's largest prehistoric fortification and an artillery redoubt, probably dating to the late 17th century. The lower slopes are occupied by Roman siegeworks and camps. To remain meaningful the open setting, allowing views both from and to the hill in order to appreciate its strategic importance and thus to give the monuments meaning, must be maintained*” (information from DGC Archaeology Service). The forts on the hill top and the Roman siegeworks on the lower slopes are Scheduled Monuments (667) although a wider area, including other remains, is covered by the ASA designation. From the summit of Burnswark Hill, there are wide sweeping views in all directions, most notably to the south along the Solway coastline. Minsca Wind Farm is prominent in views to the north-east, both from the hill top (LVIA viewpoint 9) and from the eastern slopes and the Roman siegeworks and camps. The Minsca turbines are around 4 km from the monument and the Craig Wind Farm can also just be made out in the far distance beyond the Minsca turbines. The proposed wind farm would be approximately 10 km from the monument (9.7 km to the nearest turbine) and, although a detectable new feature in the wider landscape, would not materially alter the setting of the monuments nor detract substantially from appreciation of the ASA as a whole and its setting. The effect on the setting of Burnswark ASA would be of low magnitude and minor significance.
- 11.83 The **Birrens Roman Fort complex** includes a Roman fort (666), Roman fortlet (2613) and Roman camps (2746) and a number of other sites and features, both Roman, and native, clustered either side of the Mein Water around the small hamlet of Satur. The complex is divided by the West Coast mainline railway. The main Roman Fort (666), to the north of the railway, is well preserved with upstanding ramparts and external vallum ditches; a short section of surviving Roman road extends out to the north towards Burnswark. The complex's setting provides some positive contribution to its value and appreciation, in particular its association with Burnswark approximately 5 km to the north. The complex commands views in all directions, although those to the north-east, towards the proposed wind farm, are partly screened by a line of deciduous trees and modern, single storey, buildings along the roadside. The nearest proposed turbine would be 8 km distant, to the north-east, and although a detectable new feature in the wider landscape, would not materially alter the setting of the monuments nor detract substantially from appreciation of the complex as a whole and its setting. The effect on the setting of Birrens Roman Fort complex would be of low magnitude and minor significance.
- 11.84 Category A listed **Hoddom Castle (3558)** and the scheduled and category A listed **Repentance Tower (706 / 3570)** both lie to the south-west of the proposed wind farm (14 km and 15 km respectively), beyond the A74(M) and the small town of Ecclefechan and on the south side of the River Annan. The LVIA Viewpoint 12 shows the existing and predicted views from Repentance Tower and overlooking Hoddom Castle. Minsca Wind Farm is visible in the middle distance (10 km), to the right of Burnswark Hill, and Craig Wind Farm is detectable but not distinct in the far distance (21 km). The nearest of the proposed wind farm turbines would be 14.8 km from Repentance Tower and a little less from Hoddom Castle. Although the proposed wind farm would be visible (in views to the east only), the effect would be of no more than low magnitude, a detectable but not material change to the baseline and the effect on the two sites and their setting would be of minor significance.

- 11.85 **Caerlaverock Castle and Old Castle, castles, courtyards and harbour** (Index No 90046) lies on the Solway coast at the mouth of the River Nith approximately 30 km from the proposed wind farm (29.2 km to the nearest turbine). The castle occupies a prominent and strategic location from whose position it is possible to monitor and control traffic along the northern Solway coast and inland along the River Nith. Being close to the border, Caerlaverock was also of strategic importance in the many historical border conflicts with England. The castle's setting is dominated by its coastal location and its commanding views and provides a strong positive contribution to the castle's value and appreciation. The proposed wind farm would be detectable on the far horizon in views towards the north-east (see for example **LVIA viewpoint 16**), but not in other directions. In addition, the proposed wind farm would not be prominent in any views of the castle, either from land or sea. The overall effect on the setting of the castle from the introduction of the proposed wind farm would be of imperceptible magnitude, representing a very slight and barely distinguishable change to its baseline setting. At worst, the effect would be of low magnitude. The effect on its setting would, therefore be at worst of minor significance.
- 11.86 At the request of DGC Archaeology Service, a photomontage (**LVIA viewpoint 17**) is included showing the view from a rural location on the **Hadrian's Wall WHS**. The photomontage clearly shows that although the proposed wind farm would be theoretically visible from the Wall, it would be no more visible than the operational Minsca Wind Farm. The proposed wind farm would be some 30 km distant (29.3 km to the nearest turbine) and under most circumstances would be barely visible on the skyline. It lies well beyond the protective buffer zone of the WHS and the effect on the setting of the WHS would be of imperceptible magnitude, a barely detectable change to its present setting. The effect on the Hadrian's Wall WHS would be of negligible significance.

Mitigation

Potential Construction Effects

- 11.87 In accordance with the guidance contained in PAN 2/2011 and in Structure Plan policy E 12 (see **Chapter 2: Planning Policy Context**) the preferred option for mitigation is preservation of important remains in situ where practicable and by record where preservation is not possible. The scope of any archaeological mitigation set under any planning condition would be agreed in consultation with DGC Archaeology Service. An appropriate strategy for archaeological mitigation would be presented in a Written Scheme of Investigation (WSI) and agreed in advance of construction with DGC Archaeology Service.

Potential Operational Effects

- 11.88 No further mitigation would reduce or offset the predicted operational effects.

Residual Effects

Residual Construction Effects

- 11.89 The consideration of cultural heritage interests in developing the wind farm design has resulted in the preservation in situ of known sites of some historic environment interest within the proposed wind farm site. There would, therefore, be no residual effect on any of the previously identified features which will all be avoided and preserved in their present condition.

- 11.90 There may be residual effects on any hitherto undiscovered buried features or deposits that might be discovered during any watching brief required. In line with the requirements of national and regional planning policy, any archaeological remains that are identified will be either preserved in situ (where this may be justified by their importance) or excavated and recorded to a standard agreed with the Dumfries and Galloway Council Archaeology Service, leading to the accrual of archaeological information and preservation by record. Any residual effect, through loss of any in situ remains, is likely to be of minor significance.

Residual Operational Effects

- 11.91 During its operational lifetime, the residual effects of the proposed wind farm on the settings of the various sites and monuments within the study area will be the same as the predicted effects. Upon decommissioning and the removal of the turbines the effects on the settings of heritage assets resulting from the presence of the proposed wind farm would be removed and there would be no residual effect from that development on their settings.

Cumulative Effects

Potential Operational Effects

- 11.92 This section considers the indirect cumulative effects of the proposed wind farm on the setting of cultural heritage features. The cumulative assessment considers the additional effects of the proposed wind farm, assuming all other operational and consented wind farms and also submitted wind farm applications within 35 km are present. These wind farm developments are set out in **Chapter 8: Landscape and Visual**, Figure 8.27). The Ewe Hill and Newfield overhead line (hereafter referred to as the Ewe Hill and Newfield OHL) is also considered given its proximity to Solwaybank Wind Farm (refer to Figure 8.27).
- 11.93 The cumulative wind farm ZTV extends to 35 km as, beyond this, the LVIA considers that significant cumulative effects with the proposed wind farm are not considered likely. The assessment considers those sites that lie within the 10 km radius study area and those identified by either Historic Scotland or DGC Archaeology Service as key receptors, as beyond this distance, significant effects are considered unlikely.
- 11.94 The cumulative ZTV includes the following within 35 km of the proposed wind farm:
- Four operational wind farms: Craig, Minsca, Great Orton and Dalswinton.
 - Three consented wind farms: Ewe Hill; Craig Phase 2 and Harestanes.
 - Seven wind farms where applications have been submitted: Ewe Hill, Craig (Phase 3), Beck Burn, Newfield, Minnygap, Hallburn and Hell Rig.
- 11.95 Beck Burn, Great Orton, Hallburn and Hell Rig Wind Farms are all located to the south of the proposed wind farm. Beck Burn Wind Farm is the closest at 11.7 km from the site. Ewe Hill, Ewe Hill application, Craig and Craig Extension are just over 5 km north from the site. The other wind farms: Minsca, Newfield, Minnygap, Harestanes and Dalswinton are all in an arc to the west-north-west and between 5 km and 35 km from the site (**Chapter 8: Landscape and Visual**, Figure 8.27).
- 11.96 There is also a current proposal by SP Transmission Ltd (SPT) to connect the proposed Ewe Hill and Newfield wind farms to its existing grid substation at Gretna via a single 132kV overhead

transmission line²⁷ (the Ewe Hill and Newfield OHL) as shown on Figure 8.27). The Ewe Hill and Newfield OHL is for a 13.5m high wooden pole mounted transmission line with an average span between support poles of 75 m. The cumulative effect of the proposed wind farm in combination with the proposed Ewe Hill and Newfield OHL would be of low magnitude and negligible significance for all sites within the study area and is therefore not considered further.

- 11.97 Figure 11.3 shows the distribution of sites considered in the cultural heritage assessment as being within 10 km of, and having intervisibility with, the proposed wind farm, set against the cumulative ZTV. Appendix 11.5 provides a list of the nationally important heritage assets within the 10 km assessment zone and a column identifying the number of other wind farms theoretically visible from each location, based on blade tip heights. It should be noted that this represents the maximum, worst case scenario as in reality not all of each of these wind farms will be visible.
- 11.98 From the location of **Callisterhall, cairn 1100m NE of** (Index No. **4519**) analysis of the cumulative ZTV indicates that, in addition to the proposed wind farm, turbines of four other wind farms would be visible. The closest of the other wind farms to this monument is the consented Ewe Hill Wind Farm, 3.5 km to the north-west. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those other wind farms that would be visible from the cairn would be of low magnitude and minor significance. D
- 11.99 Similarly, from the location of **Callisterhall, cairn 2550m NNE of** (Index No. **4535**) analysis of the cumulative ZTV predicts that in addition to the proposed wind farm, turbines of five other wind farms would be visible. Two of these are operational wind farms (Minsca and Craig). Given the location of the cairn, the three others would comprise Ewe Hill and Ewe Hill Extension and Craig Phase 2. The proposed wind farm would be the closest scheme. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those other wind farms that would be visible from the cairn would be of low magnitude and minor significance.
- 11.100 From **Burnswark ASA (667)**, the cumulative ZTV predicts that in addition to the proposed wind farm, turbines of seven other wind farms would be visible. Two of these are operational wind farms (Minsca and Craig) which are part of the baseline setting. From Burnswark, it is likely that the cumulative wind farm visibility would come from those either consented (Harestanes) or from applications that lie in an arc from north-east to north-west. Minsca is the closest scheme, Newfield Wind Farm would be the next closest, then Solwaybank and Ewe Hill; both roughly the same distance away. In views to the north-east from Burnswark, Ewe Hill and Craig wind farms would lie in the line of sight behind, and beyond, Minsca. The proposed wind farm would stand visually apart and separately from these others. An indication of the degree of cumulative visibility from Burnswark in the view to the north-east is given in LVIA Viewpoint 9. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those other wind farms that would be visible from Burnswark ASA would be of low magnitude and minor significance. From around **Birrens Roman Fort complex (666)**, the cumulative ZTV predicts that in addition to the proposed wind farm, turbines of two other wind farms would be visible. The operational Minsca Wind Farm (to the north) is one of these and the closest to the monuments; the proposed wind farm would be the next closest, lying to the north-east. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those other

wind farms that would be visible from Birrens Roman Fort complex would be of imperceptible magnitude and minor significance.

- 11.101 From **Hoddom Castle (3558)**, the cumulative ZTV predicts that in addition to the proposed wind farm, turbines of six other wind farms would be visible, whilst from **Repentance Tower (706 / 3570)**, turbines of 12 other wind farms would be visible. From the locations of these two receptors, the operational Minsca Wind Farm is the closest of the schemes; Newfield would be the next closest, then the proposed wind farm. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those other wind farms that would be visible from Hoddom Castle would be of imperceptible magnitude and minor significance.
- 11.102 From **Caerlaverock Castle and Old Castle, castles, courtyards and harbour** (Index No **90046**), the cumulative ZTV predicts that in addition to the proposed wind farm, turbines of 12 other wind farms would be visible. The closest of these would be the Hell Rig Wind Farm in Cumbria, 17 km to the south-east. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those others that would be visible from the receptor would be of imperceptible magnitude and minor significance.
- 11.103 **Hadrian's Wall WHS** is a long, linear monument stretching the width of Britain between the Solway in the west and the Tyne. At this eastern end, the cumulative ZTV predicts that turbines of all wind farms considered in the cumulative assessment could be theoretically visible from various locations. The closest scheme to the section of wall extending eastwards from Carlisle would be the Hallburn Wind Farm, around 9 km to the north. Whilst the receptor is of high sensitivity, the cumulative effect from the addition of the proposed wind farm to those others that would be visible from Hadrian's Wall would be of imperceptible magnitude and minor significance.
- 11.104 Whilst it is likely that there will be some cumulative effect from the addition of the proposed wind farm when added to the various other schemes up to 35 km distant; the effect on the setting of the various sites discussed above would not be significant when judged against their baseline settings.

Residual

- 11.105 During its operational lifetime, the residual cumulative effect on the settings of the various sites and monuments in the study area resulting from the proposed wind farm will be the same as the predicted effects (i.e. not significant).

Summary

- 11.106 Table 11.10 below summarises the predicted effects of the proposed wind farm on cultural heritage assets.

Table 11.10: Summary of Potential Effects, Mitigation and Residual Effects

Likely Significant Effect	Mitigation Proposed	Means of Implementation	Outcome/Residual Effect
Construction			
Disturbance to and loss of hitherto unidentified buried archaeological remains due to ground disturbing excavation associated with construction works	Archaeological monitoring in sensitive areas and follow up mitigation if important new discoveries are made	Watching brief	Minor (Not significant)

²⁷ Scottish Power Transmission Ltd 2011 'Gretna Substation to Ewe Hill and Newfield Windfarms 132kV Transmission Line - Environmental Statement and NTS'

Likely Significant Effect	Mitigation Proposed	Means of Implementation	Outcome/Residual Effect
Operation			
Indirect effects on the setting of Scheduled Monuments, NSR sites, Listed Buildings, Conservation Areas and Gardens and Designed Landscapes	None	Not applicable	Minor - Negligible (Not significant)
Cumulative			
Indirect cumulative effects on the setting of Scheduled Monuments, NSR sites, Listed Buildings, Conservation Areas and Gardens and Designed Landscapes	None	Not applicable	Minor - Negligible (Not significant)