



Chapter 11

Archaeology & Cultural Heritage

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Chapter 11

Archaeology and Cultural Heritage

11.1 Introduction

1. This chapter considers the likely effects on cultural heritage associated with the construction and operation of the proposed Development. The chapter describes the results of a desk-based assessment and field surveys undertaken by CFA Archaeology Ltd (CFA), and draws on comments provided by Historic Environment Scotland (HES), South Ayrshire Council (SAC) and Dumfries and Galloway Council (D&GC) in Scoping Opinions and through additional, post-scoping, consultations. The assessment considers the potential direct effects on assets within the Site (Inner Study Area) and the indirect effects of the proposed Development on the settings of heritage assets in the wider landscape (Outer Study Area).
2. The specific objectives of the chapter are to:
 - Describe the cultural heritage baseline.
 - Describe the assessment methodology and significance criteria used in completing the impact assessment.
 - Describe the potential effects, including direct, indirect and cumulative effects.
 - Describe the mitigation and, where appropriate, monitoring measures proposed to address likely significant effects.
 - Assess the residual effects remaining following the implementation of mitigation.
3. This chapter is supported by the following figures and technical appendices:
 - **Figure 11.1:** Cultural Heritage: Inner Study Area.
 - **Figure 11.2:** Cultural Heritage: Outer Study Area.
 - **Figure 11.3:** Cultural Heritage: Cumulative Schemes.
 - **Figure 11.4 to 11.11:** Cultural Heritage Visualisations.
 - **Technical Appendix 11.1:** Heritage Assets within the Inner Study Area.
 - **Technical Appendix 11.2:** Assets within Outer Study Area and within 5 km of the proposed Development.
 - **Technical Appendix 11.3:** Assets within Outer Study Area and between 5 km and 10 km of the proposed Development.
4. Where relevant, cross-reference is also made to Landscape and Visual Impact Assessment (LVIA) viewpoints, where these coincide with the locations of heritage assets in the wider landscape.
5. Figures and technical appendices are referenced in the text where relevant.

11.2 Legislation, Policy and Guidelines

11.2.1 Legislation

6. Legislation relevant to archaeology and cultural heritage that has been considered as part of this assessment includes:
 - The Ancient Monuments and Archaeological Areas Act 1979.
 - Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

11.2.2 Planning Policy

7. Planning policy relevant to archaeology and cultural heritage that has been considered as part of this assessment includes:

- National Planning Framework for Scotland 3 (NPF3).
- Scottish Planning Policy (SPP) Paragraphs 135-151.
- Historic Environment Policy for Scotland (HEPS) 2019
- Planning Advice Note 2/2011 (PAN 2) (2011).
- Dumfries and Galloway Council (DGC) Local Development Plan (LDP2) 2019.
 - Policy HE1: Listed Buildings.
 - Policy HE2: Conservation Areas.
 - Policy HE3: Archaeology.
 - Policy HE4: Archaeological Sensitive Areas.
 - Policy HE6: Gardens and Designed Landscapes.
 - Policy IN1: Renewable Energy.
 - Policy IN2: Wind Energy.
 - LDP2 Draft Supplementary guidance (2018): Historic Built Environment.
 - LDP2 Draft Supplementary guidance (2018): Wind Energy Development; Development Management Considerations. (F. Historic Environment and Cultural Heritage).
 - LDP Draft Supplementary guidance (2018): Part 1 Wind Energy Development; Development Management Considerations – Appendix C – Landscape capacity Study.
- South Ayrshire Council (SAC) Local Development Plan (LDP) 2014.
 - LDP Policy: Renewable Energy.
 - LDP Policy: Wind Energy.
 - LDP Policy: Historic Environment.
 - LDP Policy: Archaeology.
 - LDP Policy: Estates.
 - Supplementary Guidance (2014): Historic Environment (Part 1).
 - Supplementary Guidance (2014): Wind Energy.

11.2.3 Guidance

8. Guidance relevant to archaeology and cultural heritage that has been considered as part of this assessment includes:
 - SNH & HES (2018) 'Environmental Impact Assessment Handbook'.
 - Chartered Institute for Archaeologists (2014) 'Standard and Guidance for Historic Environment Desk-Based Assessment'.
 - HES (2019) Designation Policy and Selection Guidance.
 - HES (2016) 'Managing Change in the Historic Environment: Setting'.

11.3 Consultation

9. The relevant stakeholders were consulted regarding the potential effects of the proposed Development as part of the scoping process. A summary of consultation is provided in **Table 11.3.1**.

Table 11.3.1 Consultation Responses

Consultee	Response	Action
HES (16/04/19) Scoping Opinion	Advised that there is potential to impact on the fabric and setting of designated heritage assets.	Direct impacts have been avoided through design and setting impacts are assessed in this chapter (Section 11.6.1.1)
	Advised that the proposed [5 km] study area is too restrictive. The application of a ZTV model should help to identify such sites beyond this distance.	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below).
	Advised that any works within the scheduled area (Cairnderry, chambered cairn (SM1007)) would require Scheduled Monument Consent (SMC). It is unlikely that SMC would be granted.	The proposed Development has been designed to avoid the scheduled area and mitigation is proposed to avoid any direct impact on the scheduled monument.
	Advised that if the proposal necessitated widening of the existing forestry track, this could have a significant setting impact on Cairnderry, chambered cairn (SM1007) and this should therefore be taken into consideration when planning the works and assessed in the EIA.	Routing of the track at the site entrance has been designed to avoid the scheduled area. Mitigation measures would be put in place to ensure that there is no direct impact on the scheduled monument (Section 11.7).
	The following scheduled monuments could receive the most significant setting impacts: Balmalloch, chambered cairn (SM2503) Sheuchan's Cairn, chambered cairn, Highlandman's Rig (SM1041) Cairn Kinna, two cairns 960m ESE of Corrafeckloch (SM1008) Impacts on any other heritage assets identified through the ZTV analysis should also be considered.	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below). The assessment in this chapter (Section 11.6.1.1) describes the predicted effect on the settings of each of these assets. Impacts on other assets are described in tabulated form in Technical Appendices 11.2 and 11.3 .
SAC (02/05/19) Scoping Opinion	Provided no comment on archaeology/cultural heritage	Post-scoping consultation was undertaken with WoSAS and other consultees on the approach to the assessment (see below).
West of Scotland Archaeology Service (WoSAS) (28/03/19) Scoping Opinion	Advised that some non-designated sites within the part of the application area that falls within South Ayrshire are likely to be of at least regional, and potentially national, significance, despite not currently being scheduled.	Data was obtained from the Historic Environment Record (HER) and appraised for the relative sensitivities attributed in the records (see Section 11.5 and Technical Appendices 11.2 and 11.3).
	Advised that WoSAS would generally expect an outer study area employed in relation to a large windfarm to employ a study area extending to at least 10 km from the boundaries of the development.	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below). A 10 km Outer Study Area was agreed through consultation.
	Agreed that the assessment should consider the impact of the development on the setting of undesignated assets of more than local importance that fall within the outer study area.	The assessment includes consideration of impacts on the setting of heritage assets with non-statutory designations in the HER (non-statutory register sites (NSR) codes C and V) (see below).
	Advised that consideration should be given to sites that were identified as being of potentially schedulable quality in the old Non-Statutory Register (NSR).	The assessment includes consideration of impacts on setting of assets of heritage assets with non-statutory designations in the HER (non-statutory register sites (NSR) codes C and V).
	Although the NSR is no longer referenced in current planning guidance, sites that were assessed to be of potentially worthy of inclusion in the schedule at the time that it was compiled are likely to continue to be of at least regional significant (unless their condition has materially changed in the intervening period).	For consistency with the approach to NSRs taken by DGCAS, all assets with attributed codes C or V are treated as being of High sensitivity (Table 11.2; Technical Appendices 11.2 and 11.3).
	Advised that the range of sources that will be consulted as part of the desk-based element of the assessment appears to be appropriate.	See Methodology and Baseline Sections for details (Section 11.4.2 and Section 11.5.1).
	Advised that WoSAS would generally recommend that any walkover survey should cover the full extent of the application site, rather than simply target specific areas of disturbance, as this provides a more comprehensive picture of the archaeological baseline, and allows a greater understanding of the type, range and distribution of archaeological material present.	The field survey visited all areas of ground not presently covered by commercial forestry and the locations of assets identified through desk-based assessment that lie in proximity to proposed infrastructure (Tracks, compounds, turbines, borrow pits, etc.). Field survey within plantation compartments and in recently felled areas was not undertaken for Health and Safety reasons. Assets identified from the desk-based assessment that lay within forestry compartments and near proposed Development infrastructure were visited where access was possible.
	Noted that most of the ground within the application area is either currently or has been under commercial forestry plantation, which is likely to make a systematic walkover survey of the entire area more difficult. Would nevertheless be wary of placing too much reliance on a walkover survey that looks only at a relatively small sub-section of the application area, as this is unlikely to provide an adequate assessment of the true impact of the proposal on the cultural heritage of the area.	A detailed desk-based assessment was undertaken prior to the field surveys. The field surveys visited all areas of ground not presently covered by commercial forestry and the locations of assets identified through desk-based assessment that lie in proximity to proposed infrastructure (Tracks, compounds, turbines, borrow pits, etc.).
Agree that the range of mitigation options proposed in this section appears likely to be appropriate to address possible direct impacts on archaeology and the historic environment.	Details of mitigation measures proposed are set out in Section 11.7.	

Consultee	Response	Action
D&GC (undated) 19/0479/ENQ; Section 3, Dumfries and Galloway Council Archaeology Service, (DGCAS) Scoping Opinion	Advised that both direct and indirect effects will need to be assessed.	Direct impacts have been avoided through design and setting impacts are assessed in this chapter (Section 11.6.1.1).
	Advised that impacts on the setting of significant historic environment assets, should be led by the Zone of Theoretical Visibility (ZTV), with the greatest effects likely to be experienced by sites of national (note that not all are designated), or greater significance closest to the site.	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below).
	Advised that the scoping proposal for an Inner Study Area of 2 km, and an Outer Study Area of 5 km is considered too restrictive. The norm for assessment of indirect effects within Dumfries and Galloway is that nationally significant sites (Scheduled Monuments, Inventory Designed Landscapes, A-listed buildings and unscheduled sites considered by the local authority to be of national significance) should be assessed out to 10 km, as well as regionally significant Non-Inventory Designed Landscapes and Archaeologically Sensitive Areas. Regionally significant historic assets out to 5 km should also be included. Promoted heritage sites along the Southern Upland Way should also be assessed where these fall within the ZTV.	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below).
	On the information available it is advised that indirect effects on the following assets must be included in any assessment: Cairnderry cairn (SM1007), White Cairn (SM1048), Loch Maberry Castle (SM1991)	Post scoping consultation was undertaken with HES and other consultees to agree an appropriate study area and the approach to the assessment (see below). The assessment in this chapter describes the predicted effect on the settings of Cairnderry Cairn (Section 11.6.1.1.1).
	Advised that, after preliminary assessment, a finalised list of illustration for inclusion in the EIA should be agreed with the Council Archaeologist.	Following further consultation with DGCAS, the requirement to include assessment of White Cairn and Loch Maberry Castle (both of which lie more than 10 km from the proposed Development) was withdrawn. A list of viewpoints was agreed through consultation HES, DGCAS and WoSAS.
	Advised that the Planning Case Officer will confirm the developments that need to be considered in the cumulative assessment.	The cumulative assessment includes schemes agreed by the LVIA consultants in consultation with SNH and the relevant Council case officers. Cumulative developments are shown on Figure 11.3 and, where they are visible from cultural heritage viewpoints, are shown on the visualisations.
	Advised that a comprehensive walkover survey will be required to assess the extent and condition of remains within the footprint of the proposed development.	A detailed desk-based assessment was undertaken prior to the field surveys. The field surveys visited all areas of ground not presently covered by commercial forestry and the locations of assets identified through desk-based assessment that lie in proximity to proposed infrastructure (Tracks, compounds, turbines, borrow pits, etc.).
Advised that the designated Scheduled Monument of Cairnderry Cairn lies immediately adjacent to the forestry access road from the A714. The designated area runs right up to the western boundary of the road itself. Any proposed alteration to the entry off the A714 must avoid direct impacts on the cairn itself, and any road improvement schemes be confined to the eastern side of the existing forest road. Mitigation proposals will be required.	Routing of the track at the site entrance has been designed to avoid the scheduled area. Mitigation measures would be put in place to ensure that there is no direct impact on the scheduled monument (Section 11.7).	
HES (25/07/2019) Post-scoping consultation	Advised that there are no assets covered by HES remit beyond 10 km that are likely to be significantly affected by the proposals for our interests.	An Outer Study Area of 10 km from the outermost turbines has been adopted for the assessment of impacts on setting (Section 11.6.1.1).
	Advised that HES is content with the list of proposed visualisations.	Visualisations are provided for eight heritage assets.
	Advised that HES consider the proposed methodology appropriate for their interests. HES had some minor comments on terminology.	An amended methodology, compliant with SNH/HES guidance (2019) was submitted for approval and approved via email on 08/08/2019.
WoSAS (05/07/2019) Post-scoping consultation (email response)	Advised that WoSAS is content with the proposed 10 km study area from the outermost turbines, and with the proposal to use the ZTV to identify sites within this area whose setting could be subject to change. This should include non-designated NSR sites.	An Outer Study Area of 10 km from the outermost turbines has been adopted for the assessment of impacts on setting (Section 11.6.1.1).
	Advised that WoSAS is not aware of any monuments beyond the proposed 10 km study area that should be assessed for possible setting impacts.	
DGCAS (02/08/2019) Post-scoping consultation (email response)	Suggested assessment of Category B Listed Buildings within 5 km as they are usually regarded as regionally significant.	Category B Listed Buildings up to 10 km from the outermost turbines are included as these can sometimes be the principal building within a designed landscape setting.

11.4 Assessment Methodology and Significance Criteria

11.4.1 Study Area

10. Two study areas have been used for the assessment:

- The Inner Study Area (**Figure 11.1**): the application boundary (the Site) forms the study area for the identification of heritage assets that could receive direct impacts arising from the construction of the proposed Development. **Figure 11.1** shows the extent of the Site, the proposed Development layout and the locations of heritage assets identified and described in the gazetteer (**Technical Appendix 11.1**).
- The Outer Study Area (**Figure 11.2**): a 10 km study area, extending from the outermost finalised proposed turbine locations, has been used for the identification of cultural heritage assets whose settings may be affected by the proposed Development (including cumulative effects). The study area extent was agreed by statutory consultees as being appropriate and no assets beyond 10 km were identified, either by the consultees, or through preliminary assessment of the 45 km blade tip Zone of Theoretical Visibility (ZTV), as requiring inclusion in the assessment. **Figure 11.2** shows the proposed Development, together with the blade tip height ZTV and the location of heritage assets up to 10 km from the proposed Development from which there would be a theoretical view of the turbines and which are included in the assessment. Lists of these heritage assets is provided in **Technical Appendices 11.2** and **11.3**, which also provide tabulated summary assessments of the predicted impacts on their settings on a case-by-case basis. **Figure 11.2** also highlights the locations of the assets for which visualisations are provided.

11. The consideration of cumulative effects on the settings of heritage assets also uses the 10 km study area. **Figure 11.3** shows the proposed Development in its wider landscape context, together with the blade tip height ZTV. The locations of the heritage assets that have theoretical visibility of one or more turbines of the proposed Development and the locations of other wind energy development in the wider area are also shown. The cumulative developments included in the assessment are those agreed with consultees and listed in **Chapter 6: Landscape and Visual Impact**.

11.4.2 Desk Study

12. The following information sources were consulted as part of the desk-based assessment:

- HES Spatial Data Warehouse: provided up-to-date data on the locations and extents of Scheduled Monuments, Listed Buildings, Conservation Areas, Inventory status Garden and Designed Landscapes and Inventory status Historic Battlefields;
- WoSAS Historic Environment Record (HER for SAC): provided a digital database extract in GIS for all assets within South Ayrshire;
- DGC Historic Environment Record (HER for DGC): provided a digital database extract in GIS for all assets within Dumfries and Galloway;
- The National Record of the Historic Environment (NHRE) database (Canmore): for any information additional to that contained in the HERs;
- Map Library of the National Library of Scotland: for Ordnance Survey maps and other historical map resources; and,
- Historic Land-Use Assessment Data for Scotland (HLAMap): for information on the historic land use character of the Site and the surrounding area.

11.4.3 Field Surveys

13. A walk-over field survey of the Site was carried out in June 2019, with the following aims:

- Assess the baseline condition of the known heritage assets identified through the desk-based assessment.
- Identify any further features of cultural heritage interest not detected through the desk-based assessment that could be affected by construction of the proposed Development.
- Identify areas with the potential to contain currently unrecorded buried archaeological remains.

14. All areas of the open rough pasture grazing hillside were surveyed in full and all cultural heritage assets that were identified through the desk-based assessment were visited. Sites identified by the desk-based assessment and located within areas of commercial forestry were visited, where access was possible, where they were identified as being close to proposed Development infrastructure.

15. Field visits were undertaken to heritage assets in the Outer Study Area in June 2019 in order to assess their baseline settings.

11.4.4 Criteria for the Assessment Effects

16. The effects of the proposed Development on heritage assets have been assessed based on their type (direct effects, impacts on setting and cumulative impacts) and nature (adverse or beneficial). The assessment takes into account the relative value/sensitivity of the heritage asset, and its setting, and the magnitude of the predicted impact.

- Adverse impacts are those that detract from or reduce cultural significance or special interest of heritage assets.
- Beneficial impacts are those that preserve, enhance or better reveal the cultural significance or special interest of heritage assets.

11.4.5 Criteria for Assessing the Sensitivity of Receptors

17. Cultural heritage assets are given weight through the designation process. Designation ensures that sites and places are recognised by law through the planning system and other regulatory processes. The level of protection and how a site or place is managed varies depending on the type of designation and its laws and policies (HES 2019).

18. **Table 11.4.1** summarises the relative sensitivity of cultural heritage assets relevant to the proposed Development.

Table 11.4.1 Sensitivity of Heritage Assets

Sensitivity of Asset	Definition / Criteria
High	Assets valued at an international or national level, including: Scheduled Monuments Category A Listed Buildings Inventory Gardens and Designed Landscapes Inventory Historic Battlefields Non-designated assets that meet the relevant criteria for designation
Medium	Assets valued at a regional level, including: Archaeological sites and areas that have regional value (contributing to the aims of regional research frameworks) Archaeologically Sensitive Areas (ASA) (where these are identified in Local Authority records) Non-Inventory Designed Landscapes (NIDL) (where these are identified in Local Authority records) Category B Listed Buildings Conservation Areas
Low	Assets valued at a local level, including: Archaeological sites that have local heritage value Category C listed buildings Unlisted historic buildings and townscapes with local (vernacular) characteristics
Negligible	Assets of little or no intrinsic heritage value, including: Artefact find-spots (where the artefacts are no longer in situ and where their provenance is uncertain) Poorly preserved examples of particular types of minor historic landscape features (e.g. quarries and gravel pits, dilapidated sheepfolds, etc)

11.4.6 Criteria for Assessing the Magnitude of Change

19. The magnitude of impact (adverse or beneficial) has been assessed in the categories, high, medium, low and negligible as described in **Table 11.4.2**.

Table 11.4.2 Magnitude of Change

Level of Magnitude	Definition	
	Adverse	Beneficial
High	<p>Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of the asset's cultural significance.</p> <p>Changes that substantially detract from how a heritage asset is understood, appreciated and experienced.</p>	<p>Preservation of a heritage asset in situ where it would otherwise be completely or almost completely lost.</p> <p>Changes that appreciably enhance the cultural significance of a heritage asset and how it is understood, appreciated and experienced.</p>
Medium	<p>Changes to those elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this quality is appreciably altered.</p> <p>Changes that appreciably detract from how a heritage asset is understood, appreciated and experienced.</p>	<p>Changes to important elements of a heritage asset's fabric or setting, resulting in its cultural significance being preserved (where this would otherwise be lost) or restored.</p> <p>Changes that improve the way in which the heritage asset is understood, appreciated and experienced.</p>
Low	<p>Changes to those elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this quality is slightly altered.</p> <p>Changes that slightly detract from how a heritage asset is understood, appreciated and experienced.</p>	<p>Changes that result in elements of a heritage asset's fabric or setting detracting from its cultural significance being removed.</p> <p>Changes that result in a slight improvement in the way a heritage asset is understood, appreciated and experienced.</p>
Negligible	Changes to fabric or setting of a heritage asset that leave its cultural significance unchanged and do not affect how it is understood, appreciated and experienced.	

11.4.7 Assessment of Effects on Setting

20. Historic Environment Scotland's guidance document, 'Managing Change in the Historic Environment: Setting' (HES 2016), notes that:

"Setting can be important to the way in which historic structures or places are understood, appreciated and experienced. It can often be integral to a historic asset's cultural significance."

"Setting often extends beyond the property boundary or 'curtilage' of an individual historic asset into a broader landscape context".

21. The guidance also advises that:

"If proposed development is likely to affect the setting of a key historic asset, an objective written assessment should be prepared by the applicant to inform the decision-making process. The conclusions should take into account the significance of the asset and its setting and attempt to quantify the extent of any impact. The methodology and level of information should be tailored to the circumstances of each case".

22. The guidance recommends that there are three stages in assessing the impact of a development on the setting of a historic asset or place:

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

23. The turbine blade tip and hub height ZTVs for the proposed Development have been used to identify those heritage assets from which there would be theoretical visibility of one or more of the proposed wind turbines and the degree of potential visibility. Consideration was also given to designated heritage assets where there is no predicted visibility from the asset but where views of or across the asset are important factors contributing to its cultural significance. In such cases, consideration was given to whether the proposed Development could appear in the background to those views. No assets were identified where this might be the case for this proposed Development.

24. Scheduled Monuments, non-designated assets identified in HER records as 'potentially of schedulable quality' (NSR sites) where long distance views and intervisibility are an important aspect of their settings, Category A and B Listed Buildings, Conservation Areas, Inventory Gardens and Designed Landscapes and Inventory Historic Battlefields, where present within the blade tip height ZTV and within 10 km of the outermost turbines, have been included in the assessment.

25. Regionally significant archaeological assets (ASAs and Non-Inventory Designed Landscapes (NIDLs)) and Category C Listed buildings within the blade tip height ZTV and within 5 km of the outermost turbines have been included in the assessment.

11.4.8 Criteria for Assessing Significance

26. The sensitivity of the asset (**Table 11.4.1**) and the magnitude of the predicted impact (**Table 11.4.2**) have been used to assess the potential significance of the resultant effect. **Table 11.4.3** summarises the criteria for assigning significance of effect. Where two outcomes are possible through application of the matrix, professional judgement supported by reasoned justification, has been employed to determine the level of significance.

Table 11.4.3 Magnitude of Change

Magnitude of Change	Sensitivity of Asset			
	High	Medium	Low	Negligible
High	Major	Major / Moderate	Moderate / Minor	Minor
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate / Minor	Minor	Minor / Negligible	Minor / Negligible
Negligible	Minor	Minor / Negligible	Minor / Negligible	Negligible

27. Major and Moderate effects are considered to be 'significant' in the context of Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations). Minor and Negligible effects are considered to be 'not significant'.

11.4.9 Requirements for Mitigation

28. Planning Advice Note 1/2013: Environmental Impact Assessment (PAN1/2013) describes mitigation as a hierarchy of measures: prevention, reduction, compensatory (offset) measures. Prevention and reduction measures can be achieved through design, whilst compensatory measures can offset impacts that have not been prevented or reduced through design.

29. The emphasis in Planning Advice Note (PAN) 2/2011: Planning and Archaeology (PAN2) is for the preservation of important remains in situ where practicable and by record where preservation is not possible. The mitigation

measures presented below (Section 11.7) therefore take account of this planning guidance and provide various options for protection or recording and ensuring that, where practical, surviving assets are preserved intact to retain the present historic elements of the landscape.

30. Historic Environment Policy for Scotland 2019 (HEPS) also contains policies (notably HEP2 and HEP4) that are relevant for conservation and preservation of the historic environment. HEP2 requires that decisions affecting the historic environment should ensure that its understanding and enjoyment as well as its benefits are secured for present and future generations. HEP4 requires that changes to specific assets and their context should be managed in a way that protects the historic environment. Opportunities for enhancement should be identified where appropriate. If detrimental impact on the historic environment is unavoidable, it should be minimised. Steps should be taken to demonstrate that alternatives have been explored, and mitigation measures should be put in place.

11.4.10 Assessment of Residual Effect Significance

31. The assessment of the significance of residual effects takes into account the mitigation proposed and the effectiveness of that mitigation to avoid, reduce or offset the predicted effects. Where a predicted impact is avoided, through micro-siting the proposed Development to avoid the impact, this would result in no residual effect. Where an asset cannot be avoided but where the proposed mitigation would ensure that the affected asset is subject to an appropriate level of archaeological investigation and recording, resulting in its preservation by record, the significance of residual effect is accordingly reduced. Where an asset (usually one of little or no heritage importance and negligible sensitivity) is lost without any mitigation, the residual effect remains the same as the predicted effect; in all such cases the residual effect (high magnitude change (Table 11.4.2)) on an asset of negligible sensitivity (Table 11.4.1) would be no more than minor adverse (i.e. not significant in EIA terms).

11.4.11 Limitations and Assumptions

32. The desk-based assessment draws on the records in the HER, provided in a digital GIS dataset acquired in May 2019 ahead of the field survey. It is assumed that those records were up-to-date at the time of acquisition.
33. The desk-based assessment draws on evidence taken from historic maps and the grid co-ordinates attributed to those taken from them in particular are approximations only, based on a professional interpretation of topographic relationships derived from examination of the maps. Where possible, these variations have been evaluated using modern maps and modern aerial photography to compensate for the historic mapping inaccuracies and to provide an accurate grid co-ordinate and, where possible, extent for the assets identified from such sources.
34. Designated heritage assets within the Outer Study Area have been identified from the HES database downloaded from the HES website in May 2019. That data is assumed to have been current and up-to-date at the time of acquisition.

11.5 Baseline Conditions

11.5.1 Heritage Assets within the Inner Study Area

35. Numbers in brackets in the following text refer to heritage asset numbers as shown on Figure 11.1 and listed and described in Technical Appendix 11.1.

11.5.1.1 Prehistoric Archaeology

36. Cairnderry Chambered Cairn (1) is a prehistoric burial cairn with three large rectangular chambers, situated beside the main Site access road, adjacent to the Site entrance. The cairn is 30 m in diameter and 1 m high. The site was excavated between 2002 and 2004, when several Bronze Age cremation burials were discovered along with fragments of pottery, complete burial urns, lithics and stone tools. Cairnderry is a Scheduled Monument (SM1007) valued at the national level and of high sensitivity.
37. Cairn Hill Cairn (12), is 17 m in diameter and 1.6 m high and has extensive views to the south east, south west, west, north west and north. It is regarded by WoSAS as being almost certainly of national importance (NSR code C) and is accordingly assessed as being of high sensitivity.

11.5.1.2 Medieval/Post-Medieval Settlement

38. Two named historic farmsteads are recorded in the HER within the Site: Fardin (8) and Little Shalloch (17) each surviving to varying degrees of preservation in areas of afforestation. These two farms are depicted on Roy's 'Military Survey of Scotland' map (1747-55) and they also appear on Blaeu's map of 1654, named as 'Ferdingrewy' and 'M.Schellach' indicating that they are originally of at least of 16th century date.
39. These farmsteads evidently have some antiquity, but they are not well preserved, and their landscape settings have been drastically altered through commercial afforestation.
- Fardin (8) does not survive well. There was no trace of the former farmhouse found during the field survey although the remains of its outer enclosure, along with the foundations of some unroofed ancillary structures depicted on the first edition map could be seen.
 - The present unoccupied building at Little Shalloch (17) is of 19th century date, and there are no obvious remains of any earlier settlement visible in its proximity.

40. As poorly preserved sites of former historic farming settlement, the remains of these farmsteads are each assessed as having value at the local level, potentially containing archaeological information about domestic life and farming activities from the time of their occupation. Accordingly, they are assessed as being of low sensitivity.

11.5.1.3 Cultivation and Fields

41. A field at Fardin (9) is recorded on the HER. A hay ree with associated enclosure (19) is recorded next to Little Shalloch. There are also three enclosures (5, 6 and 13) within the Site that are related to upland farming activity. These sites are depicted on the first edition Ordnance Survey map (1858) and are now within commercial forestry plantation. Any remains that survive could have some value at a local level, as relic features of the historic farming landscape. Accordingly, they are assessed as being of low sensitivity.

11.5.1.4 Sheep Rees, Sheep Folds, Enclosures & Miscellaneous Agricultural Buildings

42. There are a number of features within the Site relating to animal husbandry. These include two sheepfolds (3 and 11) and four sheep rees (10, 14, 15 and 18), all of which are associated with stock management. A possible shieling (16) is likely to be associated with summer pasturing. These recorded sites are now located in afforested areas and any remains that survive could have some value at a local level, as relic features of the historic farming landscape. Accordingly, they are assessed as being of low sensitivity.

11.5.1.5 Miscellaneous Features

43. Two unroofed buildings (2), an unroofed building (4) and a small croft site (7), consisting of two buildings and a length of wall, are depicted on the first edition Ordnance Survey map (1858) but are all now located within commercial forestry plantation compartments. Any remains that may still survive of these former farm buildings could have some value at a local level as relics of the historic farming landscape, potentially containing archaeological information about domestic life and farming activities from the time of their occupation. Accordingly, they are assessed as being of low sensitivity.

11.5.2 Historic Landscape Character

44. The Site covers an upland area that is now dominated by commercial forestry plantation with only small areas of unplanted open ground. The only significant area of original moorland/rough pasture is in the northern part of the Site, around the southern slopes of Cairn Hill and Polmaddie Hill.
45. The desk-based assessment indicates that the area was settled and used for pastoral farming since the 16th century. Two farms in the area (Fardin (8) and Little Shalloch (17)) are recorded on Blaeu's map (1654) (a mapping project that used data derived from Timothy Pont's manuscript maps of c.1580-1614). These farms and their associated features continued in use throughout the 18th and into the 19th centuries but have been abandoned and left in ruins and the remains are now encroached upon by commercial forestry. Along with, and probably associated with the former farmsteads, there were other features in the landscape relating to animal husbandry. Most of these have also been lost due to the present-day commercial forestry land use.
46. The evidence for a pastoral landscape, prior to the afforestation, is supported by the description of the parish in the Old Statistical Account that states that the land "consists principally of pasture grounds" (OSA p84). The author of

the New Statistical Account, writing in 1837, was not positive about the upland agricultural landscape describing how little of it was under cultivation and describing the state of the farm buildings as being "very indifferent; the dwelling-houses not suitable, except in a few cases of recent erection; and the offices inconvenient, and often dirty" (NSA p411).

47. Alongside the early modern pastoral landscape and the associated archaeological features there are three Bronze Age burial cairns within the Site indicating a presence in the landscape during the later prehistoric period. Overall however, it appears that the landscape was not overly exploited before the early modern period.

11.5.3 Archaeological Potential Within the Inner Study Area

48. The Inner Study Area is dominated by commercial forestry, with some limited areas of open moorland, in the northern part around Cairn Hill, Pinbreck Hill and Craigenreoch. The baseline assessment has found some limited evidence for a low-density pastoral exploitation of the landscape from the late 16th century to late 19th century, as well as some limited use during the Bronze Age for burial. Most of the Site has been extensively disturbed by commercial afforestation (ploughing, drainage works, planting, felling and replanting) and the potential for further archaeological discoveries within the Site is assessed as being low. One exception to this assessment is the area immediately around Cairnderry Chambered Cairn (1; SM1007), where the potential for further archaeological discoveries is assessed as being moderate to high and where previous excavations (Cummings & Fowler 2003) have found evidence for archaeological remains outside the perimeter of the chambered cairn.

11.5.4 Heritage Assets within the Outer Study Area

49. Numbers in brackets in the following text refer to heritage asset numbers as shown on **Figure 11.2** and listed and described in **Technical Appendices 11.2** and **11.3**.
50. Based on analysis of the blade tip height ZTV, there are nine Scheduled Monuments within the Outer Study Area from which there is some degree of theoretical visibility of the proposed Development. In addition, there are seven Category B Listed Buildings, 12 Category C listed Buildings, one Conservation Area and 35 NSR sites from which there is some degree of predicted theoretical visibility of the proposed Development.
51. There are no Category A Listed Buildings, no Inventory Garden and Designed Landscapes and no Inventory Historic Battlefields within the Outer Study Area from which there is any degree of theoretical visibility of the proposed Development.
52. The Scheduled Monuments and NSR sites include burial monuments of Neolithic and Bronze Age date and prehistoric settlement remains (including one hillfort). Many of these remains lie within the extensive commercial forestry plantations that characterise the landscape immediately surrounding the proposed Development. Some of the Bronze Age burial cairns (notably those on Cairn Hill (11677), Pinbreck Hill (11676) and Auchensoul Hill (11632)) occupy the summits of high ground and from these locations they have wide ranging views and may have been intended to be seen a prominent features in the landscape. Others are set in low-lying locations, often close to watercourses, and do not appear to have been intended to be so widely visible; many of these now lie within areas of commercial forestry. The one hillfort (Maxwellston Hill (SM2201)) occupies a prominent hilltop location and has wide ranging visibility and which was evidently intended to be both visible from and prominent in the surrounding landscape.
53. Most of the Listed Buildings are relatively modest Country Houses or Farmhouses, or other residential dwellings with localised settings. There are two religious buildings (Kirk Dominal (LB1027), a former chapel, and Barr Parish Church (LB1037)) and a former Inn (The Jolly Shephard Hotel (LB102) in Barr).
54. Barr Conservation Area lies within the Stinchar valley, at the confluence of the River Stinchar and Water of Gregg.

11.6 Potential Effects

11.6.1 Construction

55. Any ground-breaking activities associated with the construction of the proposed Development (such as those required for turbine bases and crane hard-standings, access tracks, cable routes, compounds, borrow pits, etc.) have the potential to disturb or destroy features of cultural heritage interest. Other construction activities, such as vehicle movements, materials storage, soil and overburden storage and landscaping also have the potential to cause permanent and irreversible effects on the cultural heritage.
56. The proposed Development has been designed to avoid all of the heritage assets identified by the baseline study. At only two locations does the proposed development intersect with or pass close to the site of a recorded heritage asset, where the asset lies within the micro-siting allowance:
- Cairnderry Cairn (1 (SM1007)) lies close to the existing forestry haul road that would require upgrading as part of the proposed Development. Without mitigation, there is the possibility of a medium magnitude direct impact on a Scheduled Monument of high sensitivity, potentially resulting in an effect of **major** significance. Mitigation measures are proposed to avoid the predicted impact (Section 11.7.1).
 - Fardin, field and sheepfold (9), the site of a large amorphously shaped field and sheep ree depicted on the first edition Ordnance Survey map (1858), is cut through by an existing forestry haul road. The north easternmost extent of the remains of the enclosure lie 40 m to the south west of a proposed new section of access track and within the micro-siting allowance. Without mitigation, there is the possibility of a low magnitude direct impact on the remains of an asset of low sensitivity, potentially resulting in an effect of **minor** significance. Mitigation measures are proposed to avoid the predicted impact (Section 11.7.1).
57. In two other cases (5 and 10) the recorded heritage assets lie 50 m or more from the centreline of the proposed site access tracks that would be upgraded as part of the proposed Development. The required upgrading work would have no direct impact on these assets, which are of no more than low sensitivity. All other identified heritage assets lie more than 100 m from the proposed Development infrastructure, outwith the proposed micro-siting allowance, and would not be adversely affected by the proposed Development.

11.6.1.1 Operation

58. The proposed Development could result in adverse effects on the setting of cultural heritage assets both within the Inner Study Area and in the Outer Study Area. Beyond 10 km, the proposed Development would not be a dominant feature in the landscape and the effect on the settings of heritage assets would not be significant; with any potential effects diminishing with distance from the Site. No assets beyond 10 km have been identified by HES or by WoSAS or DGCAS as requiring consideration for potential effects on their settings. **Technical Appendices 11.2** and **11.3** contain tabulated assessments of the predicted effects.
59. The assessment of operational effects on the settings of heritage assets has been carried out with reference to the layout of the proposed Development and locations of the cultural heritage assets shown on **Figure 11.2**. The criteria detailed in **Tables 11.2.1** to **11.4.1** have been used to assess the nature and magnitude of the effects which are set out in summary in **Technical Appendices 11.2** and **11.3**.
60. The following discussion addresses those assets identified by HES or by WoSAS or DGCAS as requiring detailed consideration, even where the significance of the predicted effect is assessed as being not significant in EIA terms. The assessments are supported with visualisations (**Figures 11.4 - 11.11**) and reference is made to photomontages, prepared in support of the LVIA chapter, where these are useful in representing the visual impact on the settings of heritage assets. One other (non-designated) asset, an NSR site, identified by the HER as potentially of national importance and of high sensitivity (Cairn Hill Cairn (11677)), is also discussed in detail.

11.6.1.1.1 Cairnderry, chambered cairn (SM1007)

61. The remains of the chambered cairn lie within rough moorland close to the Goat Burn (a tributary of the River Cree) and directly adjacent to an existing forestry haul road near the A714 Barrhill to Bargrennan road. The cairn is a low-lying mound around 30 m in diameter and little more than 1 m in height. It is not a prominent landscape feature and its setting appears to be most likely directly associated with the nearby watercourse (Goat Burn), which lies less

- than 100 m to the west and which flows south west to join the River Cree, around 600 m south west of the cairn. The cairn is one of a group of burial monuments of prehistoric date within the River Cree catchment, of both Neolithic (e.g. SM2503, SM1041 and SM1030) and Bronze Age (e.g. SM1008, 11477-8, 11499, 11534, 11660, 11661, 11663 and 11677) date.
62. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 18 proposed turbines, the nearest turbine being 8.1 km distant. The photomontage (**Figure 11.4**) shows the predicted degree of visibility of the proposed turbines in the view from the cairn, which currently includes commercial forestry that entirely screens any visibility of the proposed turbines (**Figure 11.4g**). Even in the absence of the current forestry screening, the proposed turbines would not be visually dominant in the wider landscape view to the north from the cairn (**Figures 11.4c** and **11.4f**) and would be seen in the wider context of commercial forestry and the operational Mark Hill Windfarm. The proposed turbines would not be physically dominant in relation to the scale of the cairn. The proposed construction compound (CC1) would be sited 130 m to the north east of the cairn and would be a new construction within the setting of the cairn. The existing forestry haul road would also be upgraded as part of the proposed Development and there would be an increase in the amount of traffic passing the cairn for the duration of the construction phase. The construction compound would be a temporary facility, providing temporary offices and car parking facilities close to the Site entrance and would be decommissioned upon completion of the construction phase. It is proposed that part of the compound area would then be used as permanent car parking for visitors wishing to access the forestry tracks for recreational purposes.
63. Upgrading of the existing track and use of the construction compound would have a noticeable impact on the setting of the cairn, albeit of short-term duration. The character of the cairn's current setting would be slightly altered, but not to a degree that would substantially affect its cultural significance in the long-term. The proposed Development would not detract from the ability for any visitor to appreciate and understand the landscape context of the cairn and it will remain possible to understand and appreciate the cairn and its setting, and its contribution to the local landscape character would be retained. The cairn's evident association with the Goat Burn would not be adversely affected as the proposed Development would only affect the ground to the east of the cairn. The cairn's current moorland setting (including its proximity to the existing track) would not be materially different, and the small recreational car park that is proposed in the long-term would provide an opportunity to promote the heritage value of the cairn and to inform visitors of its cultural significance.
64. Nevertheless, the setting of the cairn would be changed, and it is assessed that the proposed Development would have a low magnitude impact on an asset of high sensitivity, giving rise to an effect of moderate significance (significant in EIA terms) in the short-term, but of **minor** significance (not significant in EIA terms) in the long-term.
- 11.6.1.1.2 Balmalloch, chambered cairn (SM2503)**
65. The remains of the chambered cairn lie within a clearing within an area dominated by commercial forestry. It occupies an elevated position to north east of the Cumnock Burn (a tributary of the River Cree), with an open aspect to south west. Higher ground to north east limits views in that direction. The Cumnock Burn is a little over 50 m to the north west of the cairn and flows south west to join the River Cree, around 270 m south west of the cairn. The cairn is one of a group of burial monuments of prehistoric date within the River Cree catchment, of both Neolithic (e.g. SM1007, SM1041 and SM1030) and Bronze Age (e.g. SM1008, 11477-8, 11499, 11534, 11660, 11661, 11663 and 11677) date.
66. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 18 proposed turbines, the nearest turbine being 3.3 km distant. The wireline visualisation (**Figure 11.5**) shows the predicted degree of visibility of the proposed turbines in the view from the cairn, in the absence of surrounding forestry. The proposed turbines would not be visually dominant in the wider landscape view to the north from the cairn and would be seen in the context of extensive commercial forestry and the operational Mark Hill Windfarm, which lies much closer (around 600 m to the nearest turbine) to the location of the cairn. The proposed turbines would not be physically dominant in relation to the scale of the cairn and no other aspect of the infrastructure would be seen from the cairn. The open aspect views to the south and south west, currently obscured by the commercial forestry surroundings, and the cairn's association with the nearby Cumnock Burn would not be adversely affected by the proposed Development. The proposed Development would not detract from the ability for any visitor to appreciate and understand the landscape context of the cairn and it will remain possible to understand and appreciate the cairn and its setting, and its contribution to the local landscape character would be retained.
67. Overall, taking into account the cairn's baseline setting, it is assessed that the proposed Development would have an impact of no more than low magnitude on an asset of high sensitivity, and that this would give rise to an effect of **minor** significance (not significant in EIA terms).
- 11.6.1.1.3 Sheuchan's Cairn, chambered cairn, Highlandman's Rig (SM1041)**
68. The remains of the chambered cairn occupy north east end of low ridge on Highlandman's Rig, in a clearing within an area dominated by commercial forestry. The open aspect view is directed to the north east, towards Loch Moan, and the cairn lies close to the head of a minor watercourse that joins an un-named burn that flows into the loch, 1.5 km to the north east of the cairn. Loch Moan is the water body out of which flows the River Cree. The cairn is one of a group of burial monuments of prehistoric date within the River Cree catchment, of both Neolithic (e.g. SM1007, SM2503 and SM1030) and Bronze Age (e.g. SM1008, 11477-8, 11499, 11534, 11660, 11661, 11663 and 11677) date.
69. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 18 proposed turbines, the nearest turbine being 5.1 km distant, in views to the north west. The wireline visualisation (**Figure 11.6**) shows the predicted degree of visibility of the proposed turbines in the view from the cairn, in the absence of surrounding forestry. The proposed turbines would not be visually dominant in the wider landscape view to the north west from the cairn and would be seen in the context of extensive commercial forestry and with the operational Mark Hill Windfarm in the same view and in the background of the proposed Development. The proposed turbines would not be physically dominant in relation to the scale of the cairn and no other aspect of the infrastructure would be seen from the cairn. The open aspect views to the north east, wider landscape views in other directions, and the cairn's association with Loch Moan would not be adversely affected by the proposed Development. The proposed Development would not detract from the ability for any visitor to appreciate and understand the landscape context of cairn and it will remain possible to understand and appreciate the cairn and its setting, and its contribution to the local landscape character would be retained.
70. Overall, taking into account the cairn's baseline setting, it is assessed that the proposed Development would have an impact of no more than a low magnitude on an asset of high sensitivity, and that this would give rise to an effect of **minor** significance (not significant in EIA terms).
- 11.6.1.1.4 Cairn Kinna, two cairns 960m ESE of Corrafeckloch (SM1008)**
71. The remains of two round cairns, probably of Bronze Age date lie on the south west facing slope of Balunton Hill closely surrounded by commercial forestry along a forest ride. The cairns lie around 50 m west of an un-named watercourse that is a tributary of the Cairnderry Burn, which is a tributary of the River Cree. The two cairns overlook the River Cree valley, although the visual link is currently obscured by commercial forestry. The cairns are part of a group of burial monuments of prehistoric date within the River Cree catchment, of both Neolithic (e.g. SM1007, SM2503 and SM1030) and Bronze Age (e.g. 11477-8, 11499, 11534, 11660, 11661, 11663 and 11677) date.
72. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of 11 proposed turbines, the nearest turbine being 8.3 km distant, in views to the north west. The wireline visualisation (**Figure 11.7**) shows the predicted degree of visibility of the proposed turbines in the view from the cairn, in the absence of surrounding forestry. The proposed turbines would not be visually dominant in the wider landscape view to the north west from the cairns and would be seen in the context of extensive commercial forestry and with the operational Mark Hill Windfarm in the same view and in the background of the proposed Development. The proposed turbines would not be physically dominant in relation to the scale of the cairns and no other aspect of the infrastructure would be seen from the cairns. The open aspect views to the south west, currently obscured by the commercial forestry surroundings, and the cairns' association with the nearby watercourse and the Cree valley would not be adversely affected by the proposed Development. The proposed Development would not detract from the ability for any visitor to appreciate and understand the landscape context of cairns and it will remain possible to understand and appreciate the cairns and their setting, and their contribution to the local landscape character would be retained.
73. Overall, taking into account the cairns' baseline setting, it is assessed that the proposed Development would have an impact of no more than a low magnitude on an asset of High sensitivity, and that this would give rise to an effect of **minor** significance (not significant in EIA terms).

11.6.1.1.5 Cairn Hill Cairn (11677)

74. The remains of a large burial cairn, probably of Bronze Age date, occupy the summit of Cairn Hill (481 m), from which location there are wide ranging views in all directions. The main open aspect view from the cairn is to the north east towards the sea and includes views of Ailsa Craig, Arran and the Kintyre peninsular. A slight rise in the ground to the south of the cairn on the summit of Cairn Hill (e.g. **Figures 11.9b & c**) directs views more towards the north and north east (**Figures 11.9c, d & e**), along the Lead Mine Burn and towards the Laggan Burn/Water of Gregg valley (**Figure 11.9d**). It is possible that those northerly views are more relevant to the contemporary social context of the cairn; that the valley landscape to the north was the greater focus for the builders of the cairn. The cairn occupies the summit of a hill that marks the watershed between the catchments for the River Stinchar, to the north, and the River Cree, to the south but it is not a prominent feature in views from the wider landscape and is best appreciated at close quarters, where it is seen as a distinct but mutilated and modified cairn on stones on the hill summit. It is also one of a group of burial monuments of prehistoric date linked with the River Cree catchment, of both Neolithic (e.g. SM1007, SM2503 and SM1030) and Bronze Age (e.g. 11477-8, 11499, 11534, 11660, 11661 and 11663) date.
75. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 18 proposed turbines, the nearest turbine (T13) being 836 m from the cairn, on the lower slopes of Cairn Hill. The photomontage (**Figures 11.9i & j**) shows the predicted degree of visibility of the proposed turbines in the view from the cairn. The proposed turbines would be set at a lower altitude than the cairn and the associated infrastructure would be hidden from view, below the skyline in views to the south. The proposed Development would be seen in the context of extensive commercial forestry, which surrounds Cairn Hill, and with operational windfarms in the same view and in the background in views to the south; views to the north from the cairn would be unaffected by the proposed Development. Other operational windfarms (Hadyard Hill and Assel Valley) are visible from the cairn, in views to the north.
76. Although the proposed Development would be seen in the foreground of views to the south from the cairn, it would still be possible for any visitor to appreciate the wider landscape views from the cairn. Views to the coast to the west and to the lower lying valley landscape to the north would not be interrupted by the proposed Development. The cairn's immediate hilltop surroundings would not be affected by the proposed Development and the open aspect views over the wider landscape would be retained. The proposed Development would not detract from the ability for any visitor to appreciate and understand the landscape context of the cairn, although it may have an effect on a visitor's experience and the sense of place. It will however remain possible to understand and appreciate the cairn and its setting, and its contribution to the local landscape character would be retained. The cairn's inherent cultural significance would not be compromised by the proposed Development.
77. The setting of the cairn would be changed by the introduction of the proposed Development and the current sense of place and the experience of visiting the cairn would be adversely affected to some degree. Nevertheless, it would still be possible to understand and appreciate the cairn's setting and the wide-ranging views from the cairn. Overall, it is assessed that the proposed Development would have a medium magnitude impact on an asset of High sensitivity, giving rise to an effect of **moderate** significance (significant in EIA terms).

11.7 Mitigation

11.7.1 Construction Phase Mitigation

78. All mitigation works presented in the following paragraphs take note of the advice in PAN2 and HEPS. The mitigation proposed would take place prior to, or, where appropriate, during, the construction of the proposed development. All works would be conducted by a professional archaeological organisation, and the scope of works would be detailed in one or more Written Scheme(s) of Investigation (WSI) developed in consultation with (and subject to the agreement of) WoSAS or DGCAS, acting on behalf of the relevant Council.
- #### 11.7.1.1 Preservation in situ
79. Surviving heritage assets that are within 50 m of any proposed access track or turbine location and crane hardstanding would be marked out for avoidance during the construction phase. The 50 m limit is adopted to correspond with the micro-siting allowance and would allow for flexibility to relocate turbines, tracks or other infrastructure components as necessary to accommodate the range of likely constraints.

80. Marking out would be achieved using high visibility marker posts set 5 m from the edge of the identified heritage assets and these markers would be retained for the duration of the construction phase. Assets for marking out would be identified on the ground by a qualified archaeologist using the baseline information provided in **Technical Appendix 11.1**. Marking out of the assets would be undertaken by the appointed main contractor.

81. Heritage assets identified as requiring marking out are:

- Cairnderry Cairn (1). Cairnderry is a Scheduled Monument and it is protected by statute. Any direct impact on the cairn or works required to be undertaken within the scheduled area, as demarcated on the Scheduled Monument entry, requires the consent of the Scottish Government (Scheduled Monument Consent (SMC) administered through HES). The extent of the Scheduled Area will therefore be fenced off for the duration of the construction phase with secure fencing (to a specification to be agreed through consultation with HES) placed along the edge of the existing forestry haul road for a distance of not less than the full extent of the edge of the scheduled area adjacent to the forestry haul road and a buffer of 10 m at either end. The fencing would be marked in order to make it clear that the ground to the west is a Scheduled Monument and is not to be encroached upon in any circumstance.
- Fardin, field and sheepfold (9). The remains of the large enclosure will be protected by placing high visibility markers 5 m from the edge of the enclosure where it is passed by the proposed new section of access track. The markers will be used to signal to construction workers that no micro-siting of the track should extend beyond the markers.

11.7.1.2 Archaeological Investigations/Watching Briefs/Excavations

82. Taking account of the avoidance through the design and the identified cultural heritage baseline, there is one sensitive area where a watching brief would be required in order to ensure that any archaeological remains encountered during ground-breaking works are identified, recorded and investigated and reported in accordance with standard good practice:

- Cairnderry Cairn (1). Cairnderry Cairn is a Scheduled Monument and is the site of funerary activities in the Neolithic, and possible also in later periods. Archaeological investigation at the site in 2002-3 led to the discovery of a series of secondary deposits around the outside of the cairn (Cummings & Fowler 2003). These finds included a series of pits containing deposits of cremated bone and a small assemblage of lithics (flint tools). The area around the cairn is therefore considered to have a moderate to high potential to reveal other evidence relating to the period of its construction and use. A watching brief would therefore be undertaken on any works associated with widening and upgrading the existing access track, on the formation of the site entrance and on all ground-breaking work (including topsoil removal) required for setting up the temporary construction compound (CC1). The watching brief would be undertaken by a qualified archaeologist and the ground-breaking works would be carried out using standard operating procedures for such archaeological monitoring. All identified finds would be recorded, and sufficient time allowed for any discoveries to be fully investigated to the satisfaction of the Council's Archaeological Advisor.

83. The scope of any requirement for watching brief(s), which could be required as part of a planning condition should the proposed development receive consent, would be agreed with the relevant Council's Archaeological Advisors in advance of development works commencing. The agreed scope of work would be set out in one or more Written Scheme(s) of Investigation (WSI) for approval of SAC or DGC, as appropriate, and implemented ahead of the commencement of construction works.

11.7.1.3 Post Excavation Requirements

84. If significant discoveries are made during any archaeological monitoring works which are required to be carried out under the terms of a planning condition, and it is not possible to preserve the discovered site or features in situ, provision would be made for the excavation where necessary, of any archaeological remains encountered. The provision would include the consequent production of written reports, on the findings, with post-excavation analysis and publication of the results of the works, where appropriate.

11.7.1.4 Construction Guidelines

85. Written guidelines would be issued for use by all construction contractors outlining the need to avoid causing unnecessary damage to known heritage assets. The guidelines would set out arrangements for calling upon retained professional support in the event that buried archaeological remains of potential archaeological interest (such as building remains, human remains, artefacts, etc.) should be discovered in areas not subject to archaeological monitoring.

86. The guidelines would make clear the legal responsibilities placed upon those who disturb artefacts or human remains.

11.7.1.5 Archaeological Enhancement

87. It is proposed that some archaeological interpretation is presented with the conversion of part of the temporary construction compound (CC1), near to the site entrance, to a long-term recreational car park. That provision would be to specifically highlight the cultural heritage significance of Cairnderry Cairn (1; SM1007) and to inform visitors of its function, date and social context. The information would also provide background relating to the finds from excavations carried out on the cairn.

11.7.2 Operational Phase Mitigation

88. No mitigation is proposed in respect of the predicted effects on the settings of heritage assets occurring for the duration of the operation of the proposed Development.

11.7.3 Monitoring

89. There are no predicted effects (direct effects or effects on the settings of heritage assets) that require any monitoring measures to be undertaken.

11.8 Residual Effects

11.8.1 Residual Construction Effects

90. For heritage assets within the Site, completion of the programme of archaeological mitigation works set out above (Section 11.7.1) would avoid, reduce or offset the loss of any archaeological remains that may occur as a result of the construction of the proposed Development. Taking the proposed mitigation into account, any residual effect arising from construction of the proposed Development in relation to direct effects on cultural heritage assets within the Site would be of no more than **minor** significance (not significant in EIA terms).

11.8.2 Residual Operational Effects

91. During its operational lifetime, the residual effects of the proposed Development on the settings of heritage assets in the Outer Study Area would be the same as the predicted effects. One residual effect of **moderate** significance (significant in EIA terms) is predicted, on the setting of Cairn Hill Cairn (11677). Although significant in EIA terms, the predicted effect would not compromise the cultural significance of the cairn.
92. All other impacts, affecting the settings of heritage assets in the surrounding landscape, would give rise to effects that are of either **minor** or **negligible** significance (not significant in EIA terms).

11.9 Cumulative Assessment

11.9.1 Potential Cumulative Construction Effects

93. Construction of the proposed Development would not give rise to any cumulative effects on cultural heritage assets.

11.9.2 Potential Cumulative Operational Effects

94. The proposed Development could, in combination with other windfarm developments in the area that are operational, consented but not yet built, or are the subject of valid planning applications, result in adverse cumulative effects on the setting of cultural heritage assets. Operational and under construction developments are considered as part of the baseline and are taken to be such for the assessment of effects on the settings of heritage assets. Developments that are consented but not yet under construction and those that are the subject of valid planning applications are considered as being potential additions to the baseline and are considered in the cumulative impact assessment.
95. **Figure 11.3** shows the cumulative developments in the surrounding landscape and the cultural heritage assets that have predicted visibility of the proposed Development (**Figure 11.2**). From this, it can be seen that the assets most

likely to receive cumulative effects are those that lie either to the north west of the proposed Development, along the River Stinchar valley, or to the south west, along the River Cree valley.

96. Based on the distribution shown on LVIA **Figures 6.23** and **6.24**, and professional judgement, those other schemes in combination with the proposed Development, most likely to have a potential cumulative impact on cultural heritage assets are:

- Mark Hill (28 turbines, 110 m to tip) – operational and considered as part of the baseline, south west of the proposed Development.
- Arecleoch (60 turbines, 118 m to tip) – operational and considered as part of the baseline, south west of the proposed Development.
- Arecleoch Extension (13 turbines, 200 m to tip) – a current application, south west of the proposed Development.
- Chirmorie (21 turbines, 146.5 m to tip) – consented, south west of the proposed Development.
- Kilgallioch (94 turbines at 146.5 m to tip and two at 125m to tip) – operational and considered as part of the baseline, south west of the proposed Development.
- Hadyard Hill (52 turbines, 110 m to tip) – operational and considered as part of the baseline, north west of the proposed Development.
- Assel Valley (10 turbines, 110 m to tip) – operational and considered as part of the baseline, north west of the proposed Development.
- Tralorg (8 turbines, 100 m to tip) – under construction and considered as part of the baseline, north west of the proposed Development.

97. The visualisations (**Figures 11.4 – 11.11**) provided to inform the assessment of effects on the settings of heritage assets include these cumulative developments where they will be theoretically seen alongside or in combination with the proposed development, or in the wider surrounding landscape. The LVIA Viewpoint referenced also shows the cumulative schemes where these are visible from the viewpoint.

98. Six of the visualisations (**Figures 11.4-8** and **11.10**) show the potential cumulative impact on assets along the River Cree valley and to the south of the proposed Development. These all show that the cumulative impact would result from the addition of the proposed Development to a baseline including the operational Mark Hill, Arecleoch and Kilgallioch windfarms. This baseline scenario has been taken into account in the assessment above (Section 11.6.1.1). The addition of the consented Chirmorie Windfarm and the proposed Arecleoch Extension would add additional turbines to an existing large cluster and the addition of the proposed Development to a baseline including these developments would not add appreciably to the cumulative impact on assets along the River Cree valley. Overall, the effect would be of low magnitude and **minor** significance (not significant in EIA terms).

99. **Figure 11.11** and LVIA **Figure 6.33** (LVIA VP7) provide visualisations that show the cumulative impact on assets along the Stinchar valley, to the north of the proposed Development. The cumulative wirelines show that from Pinbreck Hill Cairn (11676), visibility of the proposed Development is screened by topography and the cumulative impact on the setting of the cairn from the addition of the proposed Development to a baseline including the operational Hadyard Hill and Penwhapple windfarms would be minimal; negligible magnitude and **minor** significance (not significant in EIA terms).

100. **Figure 6.33** (LVIA VP7), shows the cumulative impact on Cairn Hill Cairn (11677) of the addition of the proposed Development to a baseline including the operational Hadyard Hill, Penwhapple and Assel Valley windfarms, along with the addition of the under construction Tralorg Windfarm. This baseline scenario has been taken into account in the assessment above (Section 11.6.1.1). The addition of the Millenderdale Wind Farm (currently at Appeal) to the existing baseline (**Figure 11.9d**) would not result in an appreciably greater impact on the setting of Cairn Hill Cairn. Consequently, the cumulative impact of the addition of the proposed Development to a baseline including Millenderdale Wind Farm along with operational and under construction developments would be the same as that predicted from the assessment against the existing baseline; therefore medium magnitude and **moderate** significance (i.e. significant in EIA terms).

11.10 Summary

101. A desk-based assessment and field surveys have been carried out to establish the archaeology and cultural heritage baseline, within the Site (Inner Study Area) and in the wider landscape (Outer Study Area). The assessment has been informed by consultations with HES and with WoSAS and DGCAS.
102. Nineteen heritage assets were identified within the Inner Study Area. Two of these (1 and 12) are burial cairns of prehistoric date assessed as being of high sensitivity. The remaining 17 assets are related to post-medieval, pre-improvement period agricultural use of the landscape and include former farmsteads and other associated buildings and structures, each assessed as being of low sensitivity, having been already adversely affected to a greater or lesser degree by the present land-use as commercial forestry.
103. An assessment of the identified cultural heritage resource, and consideration of the current and past land-use, within and in the immediate vicinity of the Inner Study Area, indicates that there is a low probability of hitherto unidentified archaeological remains of any date being present within the Site. The exception to this assessment is the area immediately around Cairnderry Chambered Cairn (1 (SM1007)) where the potential for further archaeological discoveries is assessed as being moderate to high.
104. The layout of the proposed Development has been designed to avoid direct effects on the identified heritage assets within the Site and no direct effects on any identified heritage assets are predicted. Two assets have been identified where mitigation in the form of fencing off (Cairnderry Chambered Cairn (1 (SM1007)) or otherwise marking out (Fardin field and sheepfold (9)) the heritage asset is required in order to ensure that there is no direct impact as a result of any required micro-siting of the proposed Development infrastructure. The potential for significant direct effects on buried archaeological remains is considered to be low or negligible, except in the vicinity of Cairnderry Chambered Cairn (1).
105. Mitigation is proposed that would avoid potential direct effects on two heritage assets that lie in close proximity to the proposed Development infrastructure. No monitoring measures are required in relation to predicted effects on cultural heritage.
106. Nine Scheduled Monuments (of high sensitivity) have been identified within the Outer Study Area from which there is some degree of theoretical visibility of the proposed Development. In addition, there are seven Category B Listed Buildings, 12 Category C listed Buildings, one Conservation Area and 35 NSR sites from which there is some degree of predicted theoretical visibility of the proposed Development. There are no Category A Listed Buildings, no Inventory Garden and Designed Landscapes and no Inventory Historic Battlefields within the Outer Study Area from which there is any degree of theoretical visibility of the proposed Development. These, assets are listed in **Technical Appendices 11.2** and **11.3**, which include tabulated assessments of the effect of the proposed Development on their settings.
107. A temporary and short-term effect of **moderate** significance, on the setting of Cairnderry Chambered Cairn (1 (SM1007)), is predicted during the construction period.
108. A long-term effect of **moderate** significance, on the setting of Cairn Hill Cairn (11677), is predicted during the operational period.
109. A cumulative effect of **moderate** significance, on the setting of Cairn Hill Cairn (11677), is predicted from the addition of the proposed Development to a baseline that includes operational, consented and proposed developments.

Table 11.10.1 Summary Table

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
<i>During Construction</i>					
Potential direct impact on Cairnderry Cairn (1 (SM1007))	Major	Adverse	Mark out for avoidance during construction period, ensuring preservation in situ.	None	n/a
Potential direct impact on Fardin, field and sheepfold (9)	Minor	Adverse	Mark out for avoidance during construction period, ensuring preservation in situ.	None	n/a
Possible direct impact on buried archaeological remains	Unknown (Moderate)	Adverse	Watching brief to a strategy and standard acceptable to DGCAS	Minor	Adverse
<i>During Operation</i>					
Impacts on the setting of nine Scheduled Monuments within the Outer Study Area.	Minor	Adverse	None	Minor	Adverse
Impacts on the settings of one non-designated heritage assets of national heritage value: Cairn Hill Cairn (11677).	Moderate	Adverse	None	Moderate	Adverse
Impacts on the settings of 34 other non-designated heritage assets of national heritage value within the Outer Study Area.	Minor	Adverse	None	Minor	Adverse
Impacts on the settings of 18 Listed Buildings within the Outer Study Area.	Negligible	Neutral	None	Negligible	Neutral
Impact on the setting of Barr village Conservation Area within the Outer Study Area.	Negligible	Neutral	None	Negligible	Neutral
<i>Cumulative Effects</i>					
Cumulative impact of the setting of Cairn Hill Cairn.	Moderate	Adverse	None	Moderate	Adverse
Cumulative impact on the setting of nine Scheduled Monuments within the Outer Study Area.	Minor	Adverse	None	Minor	Adverse
Cumulative impacts on the settings of 34 other non-designated heritage assets of national heritage value within the Outer Study Area.	Minor	Adverse	None	Minor	Adverse
Cumulative impacts on the settings of 18 Listed Buildings within the Outer Study Area.	Negligible	Neutral	None	Negligible	Neutral
Cumulative impact on the setting of Barr village Conservation Area within the Outer Study Area.	Negligible	Neutral	None	Negligible	Neutral

11.11 References

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