



# Chapter 11

## Archaeology and Cultural Heritage

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# Chapter 11

## Archaeology and Cultural Heritage

### 11.1 Introduction

- This chapter considers the likely significant 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), Dumfries and Galloway Council (DGC) and Local Community Councils in their Scoping Opinions. 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).
- 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.
- 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 Developments.
  - Figures 11.4 to 11.12:** Cultural Heritage Visualisations.
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  - Technical Appendix 11.3:** Heritage Assets within Outer Study Area and between 5km and 10km of the proposed Development.
- 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.
- Figures and technical appendices are referenced in the text where relevant.

### 11.2 Legislation, Policy and Guidelines

#### 11.2.1 Legislation

- 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.
  - The Electricity Act (1989) Schedule 9 (paragraph 3).

#### 11.2.2 Planning Policy

- 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).
  - DGC Local Development Plan (LDP) 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.

#### 11.2.3 Guidance

- 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

- Table 11.3.1** summarises the consultation responses received from consultees and provides information on where and how they have been addressed in the assessment, where relevant.

| Consultee                         | Response  | Action  |
|-----------------------------------|---|---|
| HES (22 May 2019) Scoping Opinion | Advised that the proposals have the potential to affect scheduled monuments located within and around the development site boundary. These include: Wood Cairn, cairn, Eldrig Fell (SM1953) a scheduled monument located within the development site boundary.  | The setting of Wood Cairn cairn, Eldrig Fell (SM1953) has been taken into account during the design of the proposed Development.  |
|                                   | Recommended that particular attention is given to the potential for impacts on the setting of the following:<br>-Wood Cairn, cairn, Eldrig Fell (SM1953)<br>-Cairn na Gath, long cairn, Balmurrie Fell (SM1922)<br>-Caves of Kilhern, Chambered Cairn 450 m SE of Dranigower Lodge (SM1928)<br>-Bennan of Garvilland, Fort (SM1955) | Post scoping consultation was undertaken with HES and with DGC Archaeology Service (DGCAS) to agree an appropriate study area, the approach to the assessment and appropriate visualisation viewpoints (see below). |

| Consultee | Response  | Action  |
|-----------|---|---|
|           | -Laggangarn stones, Laggangarn (Property in Care and SM90199)<br>-Wells of the Rees, wells 500 m NNE of Kilgallioch (SM2002)  |   |
|           | Recommended that ZTV analysis is applied to identify heritage assets for assessment and that assessment is supported by visualisations such as photomontage and wireframe views where impacts are likely to be highest.   | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area, the approach to the assessment and appropriate visualisation viewpoints (see below).   |
|           | Advised that cumulative impacts resulting from the proposed Development in combination with other existing and proposed windfarm developments within the surrounding area should be carefully considered. This should include the Operational Kilgallioch Windfarm.   | The cumulative assessment includes all local developments, including the Operational Kilgallioch Windfarm.  |
|           | Noted that it is proposed to use the desk-based assessment (DBA, 2009) undertaken for the Operational Kilgallioch Windfarm as a basis for the assessment of the new development.<br><br>Advised that, while some of the information within the 2009 DBA will be useful in establishing a baseline for the assessment, noted that this document is now over 10 years old.<br><br>HES would therefore recommend that this desk-based assessment is reviewed against updated datasets to ensure that the archaeological baseline remains accurate. | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).<br><br>The desk-based assessment has used up-to-date data and resources and does not rely in any way on the findings of the work undertaken in 2009.<br><br>Regular dialogue has been maintained with DGCAS to ensure that the assessment takes full account of the sensitivity of the archaeological resource within the Site. |
|           | Noted that it is proposed to undertake a setting assessment using the same methodology as for the Environmental Statement (ES) for the Operational Kilgallioch Windfarm.<br><br>As above, HES would recommend that this approach is reviewed to allow for recent changes in EIA practice and the updated policy framework for managing to cultural heritage features  | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area, the approach to the assessment and appropriate visualisation viewpoints (see below).<br><br>The methodology applied has been approved by HES and DGCAS.  |
|           | Understand that it is intended to divide heritage assets into an 'Inward' group and an 'Outward' group in order to assess impacts on setting. We consider that the broad classification of heritage asset types into groups may not allow for a full appreciation of where setting impacts may occur. We would therefore recommend that the setting of individual heritage assets should be defined on a case-by-case basis.  | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area, the approach to the assessment and appropriate visualisation viewpoints (see below).<br><br>The methodology applied has been approved by HES and DGCAS.  |

| Consultee   | Response   | Action  |
|---|--|---|
|   |  | Tabulated assessment of the impact of the proposed Development on individual heritage assets is set out in <b>Technical Appendices 11.2 and 11.3.</b>   |
|   | Note that it is proposed to use the assessment within the 2010 Environmental Statement (ES) for the Operational Kilgallioch Windfarm as a basis for including or excluding heritage assets for assessment. This includes excluding those heritage assets located further than 15 km from the development from the assessment   | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area, the approach to the assessment and appropriate visualisation viewpoints (see below).<br><br>A 10 km Outer Study Area was agreed through consultation.  |
| D&GC (undated) Scoping Opinion; 19/0479/ENQ - Section 3 (Archaeologist) | The DGCAS does not agree with this list of proposals for exclusion from further work. The archaeology service considers that a new DBA will be required for the EIA, and that a targeted walkover of those sites whose spatial extent was not recorded in the original survey, and those where the surface expression was obscured by bracken, as noted in the gazetteer, should be undertaken.<br><br>In the intervening years since the last survey improved aerial imagery has enabled more sites to be visible and their extents recorded. Furthermore, continued maintenance of the HER means that the significance of some sites within the development area has altered since the original DBA.<br><br>A walkover survey will be required to assess the extent and condition of remains not covered in the 2009 survey, or where there is a difference in the spatial attributes assigned by the original DBA and by the Council's HER. | Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).<br><br>The desk-based assessment has used up-to-date data and resources and does not rely in any way on the findings of the work undertaken in 2009.<br><br>Targeted field survey was carried out to the strategy recommended and approved by DGCAS.<br><br>Regular dialogue has been maintained with DGCAS to ensure that the assessment takes full account of the sensitivity of the archaeological resource within the Site. |

| Consultee  | Response   | Action   |
|--|--|--|
|  | <p>It is not agreed by the archaeology service that the setting of undesignated assets more than 1 km from the site be scoped out of the EIA. The proposed turbines are within the Very Large Turbine category and the assessment will therefore have to consider effects of turbines of this scale. At such a height they are liable to have a widespread visibility within 10 km of the site. A potentially wide effect on historic character can be anticipated. This should be assessed.</p> <p>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.</p> | <p>Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).</p> <p>An outer study area extending to 10 km from the outermost turbines, informed by a ZTV has been used to identify heritage assets for inclusion in the assessment.</p>   |
|  | <p>Advised that on the information available indirect effects on the following assets must be included in any assessment:<br/>Designated monuments at Laggangarn Stones, Wood Cairn, Wells of the Rees and Carn-na-Gath Cairn<br/>Undesignated nationally significant assets including Craigmoddie fermtoun (MDG2317) and Linn's Tomb (MDG2327), and nationally significant assets within the proposed footprint.<br/>Archaeologically Sensitive Areas (DGC Policy HE4) at East Rhins</p>  | <p>Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).</p> <p>The assets identified by DGCAS have been included in the assessment and visualisations are provided as agreed with consultees.</p>   |
|  | <p>Submitted visualisation should be completed following SNH 2017 guidelines 'Visual Representation of Wind Farms, Version 2.2'</p>  | <p>All visualisations provided conform the required SNH standards.</p>   |
|  | <p>Cumulative effects will need to be considered. The Planning case officer will confirm the developments that need to be considered.</p>  | <p>The cumulative assessment includes all schemes agreed with the Council's Planning case officer.</p>   |
| Cree Valley Community Council (CVCC) (20 May 2019) Scoping Opinion | <p>Offered the opinion that no development on the Site should be consented without a prior assessment of the national importance of the archaeological value of the Site and its surroundings as a unique example of a preserved medieval Scottish landscape.</p> <p>A new DBA, a thorough site walkover (at a time of year when bracken cover is absent), and a thorough site investigation are the bare minimum for the Scope of the Archaeological section of the EIA.<br/>Considered that Table 7.2 [summary of scope table] should be rejected.</p>   | <p>Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).</p> <p>Targeted field survey was carried out to the strategy recommended and approved by with DGCAS (see above).</p> <p>Regular dialogue has been maintained with DGCAS to ensure that the assessment takes full account of the sensitivity of the archaeological resource within the Site.</p> |

| Consultee   | Response  | Action  |
|---|---|---|
| New Luce Community Council (NLCC) (08 May 2019) Scoping Opinion | <p>Noted the documentation relating to the original Kilgallioch Application indicates that there are significant numbers of cultural heritage sites within the Site, conspicuously so in relation to the whole of the High Eldrig grazing area. A significant factor here is that most of this ground is unforested, and most will not have been cultivated, meaning that the field archaeology will have good preservation.</p> <p>NLCC are very concerned that the kind of development envisaged is being considered for this area at all.</p>  | <p>Post scoping consultation was undertaken with HES and with DGCAS to agree appropriate study areas and the approach to the desk-based assessment and field survey requirements.</p> <p>The design of the proposed Development has taken the archaeological sensitivity of the cultural heritage of the Site, and the advice of DGCAS, and has worked to ensure the preservation of the well-preserved archaeological remains through embedded mitigation (<b>Section 11.7.1</b>).</p>   |
| HES (26 July 2019) Post-scoping consultation                    | <p>Welcomed the provision of an updated Assessment Methodology following previous comments made at the EIA scoping stage (22 May 2019). In particular, HES welcome the decision to undertake a fresh desk-based assessment and additional field survey work since work was undertaken in support of the Operational Kilgallioch Windfarm (Environmental Statement, 2009) and that the assessment work will be undertaken in accordance with updated guidance for the historic environment.</p> <p>Recommended that the emerging design and assessment work for the development should take into account the recently adopted Historic Environment Policy for Scotland (HEPS, 2019).</p> <p>HES had some minor comments on terminology used in the methodology presented</p> | <p>Post scoping consultation was undertaken with HES and with DGCAS to agree an appropriate study area and the approach to the assessment (see below).</p> <p>The approach to the assessment takes full account of all applicable current policy and guidance.</p> <p>Post scoping consultation was undertaken with HES and DGCAS to agree an appropriate study area and the approach to the assessment (see below).</p> <p>An amended methodology, compliant with SNH/HES guidance (2019) was submitted for approval and approved via email on 08 August 2019, which address HES's concerns regarding terminology.</p> |
|   | <p>Advised that HES is broadly content with the proposed 10 km outer study area selected for the assessment of setting impacts and welcome that cumulative impacts will be considered as part of this analysis.</p>   | <p>An Outer Study Area of 10 km from the outermost turbines has been adopted for the assessment of impacts on setting (<b>Section 11.6.2</b>).</p>  |
|   | <p>Advised that HES is broadly content with the list of proposed visualisations and welcomed that cumulative impacts will be considered as part of this analysis.</p>   | <p>Visualisations are provided for ten heritage assets agreed through consultation.</p>   |
|   | <p>Recommended the inclusion of an additional visualisation viewpoint taken from south east of Wood Cairn, cairn, Eldrig Fell (SM1953) looking towards the monument and Eldrig Fell</p>   | <p>Follow-up consultation was undertaken demonstrating that there is no viewpoint to the south east from where the cairn</p>  |

| Consultee            | Response   | Action  |
|----------------------|--|---|
|                      | with the proposed Development in the background.   | can be seen with the proposed Development in the background.<br><br>Point noted and request removed by email 23 August 2019.  |
| DGCAS (31 July 2019) | Advised that DGCAS is content that a 10km study area from the outermost turbines is sufficient for an assessment of indirect effects on heritage assets.<br><br>Identified no assets within Dumfries and Galloway that lie outwith that area which should be taken into consideration with regard to the current scheme. | An outer study area extending to 10 km from the outermost turbines, informed by a ZTV has been used to identify heritage assets for inclusion in the assessment.  |
|                      | Made comments on the proposed methodology and requested changes to reflect sensitivity of assets attributed in the HER.  | An amended methodology, compliant with SNH/HES guidance (2019) was submitted for approval and approved by email 02 August 2019.   |
|                      | Approved the selection of assets for cultural heritage viewpoints and requested that two additional sites, the fermtouns of Dirvananie (MDG13123) and Monandie (MDG2177) have photomontages produced.  | Follow-up consultation undertaken to consider an alternative provision (3D modelling and wirelines) for the sites at Dirvananie and Monandie.<br><br>The approached was approved by DGCAS in an email dated 09 August 2019. |

Table 11.3.1 Consultation Responses

## 11.4 Assessment Methodology and Significance Criteria

### 11.4.1 Study Area

- 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 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.
- 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**.

### 11.4.2 Desk Study

- 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;
  - DGC Historic Environment Record (HER): 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 HER;
  - 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 Survey

- 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.
  - Identify areas with the potential to contain currently unrecorded buried archaeological remains.
- 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.
- 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

- 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

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

| Sensitivity of Asset | Definition / Criteria   |
|----------------------|---|
| High                 | Assets valued at an international or national level, including: Scheduled Monuments |

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

Table 11.4.1: Sensitivity of Heritage Assets

#### 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**.

| Level of Magnitude | Definition   |   |
|--------------------|--|---|
|                    | Adverse  | Beneficial  |
| High               | Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of the asset's cultural significance.<br>Changes that substantially detract from how a heritage asset is understood, appreciated and experienced.                       | Preservation of a heritage asset in situ where it would otherwise be completely or almost completely lost.<br>Changes that appreciably enhance the cultural significance of a heritage asset and how it is understood, appreciated and experienced.                                     |
| Medium             | 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.<br>Changes that appreciably detract from how a heritage asset is understood, appreciated and experienced. | 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.<br>Changes that improve the way in which the heritage asset is understood, appreciated and experienced. |
| Low                | 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.  | Changes that result in elements of a heritage asset's fabric or setting detracting from its cultural significance being removed. Changes that result in a slight improvement in the way a   |

|            |  |  |
|------------|--|--|
|            | Changes that slightly detract from how a heritage asset is understood, appreciated and experienced.  | heritage asset is understood, appreciated and experienced. |
| 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. |  |

Table 11.4.2 Magnitude of Change

#### 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. 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 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.

| 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         |

Table 11.4.3 Magnitude of Change

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 11.4.3**) would be no more than minor adverse (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. 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 Site (Figure 11.1)

#### 11.5.1.1 Prehistoric Period

34. A Neolithic or early Bronze Age burial cairn (1), measuring 18 m in diameter surviving to a height of 2 m, stands on the summit of Eldrig Fell where it commands extensive views over the surrounding landscape. The cairn is a Scheduled Monument (SM1953) valued at the national level and of high sensitivity.
35. A possible Neolithic chambered cairn (5) is recorded in the HER. The cairn is defined by a stone and earth bank up to 0.4 m in height and spread to 1.5 m in width enclosing an area 18 m by 21 m in extent. There is no evidence for cairn material within the bank and the supposed chamber could not be seen at the time of the field survey. On the basis that this is possibly the remains of a chambered cairn, it is assessed as potentially being of value at the regional level and of medium sensitivity.
36. A second well preserved probable burial cairn (6) lies within cultivated land close to a sheepfold (45). Measuring 17 m in diameter and 2 m in height, the cairn could be a prehistoric (Bronze Age) burial mound. Accordingly, it is identified in the HER as being of value at the national level and of high sensitivity.
37. Nine burnt mounds (8, 9, 10, 11, 18, 19, 20, 22 and 23) are recorded within the Site. These mounds of fire-cracked stones and hearth waste all lie beside watercourses. Typically found to be of Bronze Age date they can, in some cases, be shown to be of medieval date (e.g. Buckley 1990) and to have complex histories of use and re-use (Anthony, 2003; ScARF, 2012). Seven of the burnt mounds (8, 9, 10, 11, 18, 19 and 20) are identified in the HER as being of value at the national level and of high sensitivity. Two others (22 and 23) are identified in the HER as being of value at the regional level and of medium sensitivity.
38. A possible hut circle (21) lies in cultivated fields south west of High Eldrig farm. On the basis that this is possibly the remains of a prehistoric house, it is assessed as potentially being of value at the regional level and of medium sensitivity.
39. An undated earthwork enclosure (2), measuring 25 m in length east to west and 15 m in width north to south lies to the east of High Eldrig farm. Its purpose is unknown, and it is of unknown antiquity; it could be prehistoric date, or alternatively of medieval date and associated with the early farming remains at High Eldrig. The enclosure is assessed to be of value at the regional level and of medium sensitivity.

#### 11.5.1.2 Medieval/Post-medieval settlement

40. Five named post-medieval farmsteads have been identified within the Site: Monandie (4); High Eldrig (7); Belgaverie (25); Dirvananie (31); Dirvachlie (36). Each of these farmsteads is composed of multiple elements including field systems, enclosures, hay rees, sheep rees, corn kilns, field banks and rig and furrow cultivation remains, sometimes spread over relatively large areas.
41. Gen. W. Roy's 'Military Survey of Scotland' map (1747-55) records all five of these farms and 'Monandie' (4), 'Dirvananie' (31), and 'Dirvachlie' (36) appear on Blaeu's map (1654), (derived from earlier mapping by Timothy Pont in the late 16th century (1585-90)), named as 'Monenduy', 'Dyrrymannany' and 'Dyrvachly' respectively. From this historic map evidence, these farmsteads are of at least 16th century date and may be of even earlier date.
42. Of these historic farms, 'High Eldrig' (7) appears to be the longest survivor, being finally abandoned in the 1970's but still in use today for animal husbandry. The other farms survive as intact and well-preserved parcels of land defined by low drystone walls. 'Dirvachlie' (36) is depicted as 'In Ruins' on the 1st edition Ordnance Survey map (1848), while 'Monandie' (4), 'Belgaverie' (25) and 'Dirvananie' (31) are depicted as 'In Ruins' by the time of the publication of the 2nd edition map (1896). These farmsteads, individually and collectively, have archaeological value as they are likely to retain evidence of domestic life and farming practices over the period of their occupation.
43. Three of these farmsteads (4, 7 and 31) are identified in the HER as being valued at the national level and of high sensitivity. Two others (25 and 36) are identified in the HER as being of value at the regional level and of medium sensitivity.



### 11.5.1.3 Cultivation and Fields

44. There are a number of field systems and cultivation remains within the Site, most being components of the farmsteads described above (4, 7, 25, 31 and 36). But there are, in addition, several that are isolated and outlying fields and enclosures (28, 30, 32, 34, 37 and 39) demonstrating wider land use practice and exploitation. These field systems are generally enclosed by low drystone walls with remains of rig and furrow cultivation preserved within them. Most of these (28, 32, 34, 37 and 39) are of no more value at the local level and of low sensitivity, but one (30) is identified in the HER to be of value at the regional level and of medium sensitivity.
45. In addition to the prehistoric funerary cairns described above, there are a number of smaller groups of cairns (3, 12, 13, 14, 15, 16, 17 and 45) across the Site. These cairnfields are found in close proximity to areas where late-medieval/post-medieval cultivation is also evident, and it is possible that they could be related to field clearance from establishments of those field systems. However, a prehistoric date for some, or all, of these cairnfields should not be dismissed, especially taking into account the other prehistoric archaeology in the area (burial cairns and burnt mounds, being examples). Although there is no definitive evidence as to their date or function, they are identified in the HER as being of value at the regional level and of medium sensitivity.

### 11.5.1.4 Rees, Enclosures & Miscellaneous Agricultural Features

46. Each of the farmsteads (4, 7, 25, 31 and 36) described above have various enclosures, sheep rees or hay rees associated with them. Some of these elements are spread over larger areas such as at 'Dirvachlie' (36), where a field system and hay ree is located 150 m to the south of the main part of the farm.
47. In addition to those in close association with surviving farmstead remains, there are two sheep folds/rees (24 and 26), a hay ree (38) and other isolated enclosures and structures (27, 29 and 35) within the Site; each of which appear on the 1st edition Ordnance Survey map (1848). These features are all separate from the main farmsteads and illustrate wider use and exploitation of the landscape, including animal husbandry and pastoral activities. A small enclosure, or structure (48) appears to be associated with an enclosure (29) on The Garry. As minor elements of historic farming practices, these are all assessed as being of value at the local level and of low sensitivity.
48. To the south east of High Eldrig are two quarries (40 and 43) and two gravel pits (41 and 42), each a short distance off the road to the farm. They are first depicted on the 1909 Ordnance Survey map and are possibly related to the development of the High Eldrig farmstead and construction of the access road to the farm. Two small areas of peat cutting (46 and 49) were identified during the field survey; most likely providing fuel for domestic fires. These remains have little or no intrinsic archaeological value and they are assessed as being of little or no heritage value and of negligible sensitivity.
49. Two other possible enclosure (33 and 44) and short length of boundary bank or dyke (47) have been identified. There are no identifiable remains of two of the enclosures (33 and 44), while the boundary bank (47) was found to be poorly preserved. These minor components of the historic landscape are assessed as being of little or no heritage value and of negligible sensitivity.

### 11.5.2 Tarf Water Historic Landscape Character

50. The Site covers an area of moorland and rough pasture along the Tarf Water valley within which are the remains of the abandoned farms and farming activity described above (11.5.1.2) that can be traced back to at least the end of the 16th century. Many of these farms (including 4, 31 and 36 within the Site) are recorded on Blaeu's map (1654) which is derived from earlier mapping by Timothy Pont carried out in the 1580s and 1590s. The farms and their associated features, including enclosures, corn drying kilns, field systems, sheep rees and hay rees are well preserved and it is evident that the landscape has seen little in the way of development over the last few hundred years; from the abandonment of the historic farms until the expansion of commercial forestry which surrounds the site. As a consequence of the low impact of land-use in the recent historic period (19th and early 20th centuries) and the farming practices of animal husbandry on the Site today, the remains here are well preserved and likely to contain valuable archaeological information about daily life and farming practices of the post medieval period.
51. The Old Statistical Account (OSA) and New Statistical Account (NSA) of Scotland reveal little about the general area. The NSA describes the landscape as being "*more a pastoral than an arable district*" and that "*its inland position presents impediment to those who have a taste and desire to extend the sphere of cultivation*" (NSA p198),

though as has been presented here this statement is incorrect for the proposed Development which has extensive evidence for cultivation.

52. Alongside the historic agricultural and pastoral landscape there are a number of remains of prehistoric date across the Site, which suggest that there are also elements of a relic Bronze Age landscape. There are at least two Bronze Age burial cairns indicating the use of the landscape as a place for burial and there are a number of possible prehistoric features in the development area, including two enclosures and a hut circle, while some of the field boundaries, field systems and clearance cairns may also date to this period. In addition, a number of potentially Bronze Age burnt mounds are located along watercourses within the Site, indicating that people were settled in this landscape; although little tangible evidence has been found for dwelling of that period. This may be because later farming settlements have been built over earlier settlement sites; or it may be that the remains of prehistoric dwellings survive as buried remains below subsequent accumulations of peat on the Site.
53. The evidence from the baseline study is that the Site contains extensive and well-preserved remains that indicate a long history of occupation and exploitation of this landscape. The surviving remains as a whole constitute an archaeological landscape of at least regional importance and of medium sensitivity.

### 11.5.3 Archaeological Potential Within the Inner Study Area

54. The Proposed Development lies within an area of upland rough pasture and the archaeological record reveals a layered historic landscape of well-preserved archaeological sites covering hundreds if not thousands of years of history which has seen little in the way of modern disturbance.
55. Taking account of the current land-use, and the high number of known and well preserved upstanding archaeological remains within the Site, the potential for further archaeological discoveries is assessed as being moderate to high.

### 11.5.4 Heritage Assets within the Outer Study Area (Figure 11.2)

56. Based on analysis of the blade tip height ZTV, there are 159 Scheduled Monuments (of high sensitivity) within the Outer Study Area from which there is some degree of theoretical visibility of the proposed Development. The majority of these are heritage assets that have localised settings, where long distance views to or from the assets, or designed intervisibility between them, are not important aspects to their cultural significance. In 34 cases wider landscape views and intervisibility are potentially important aspects of their setting: these include two forts and 31 funerary cairns and a pair of standing stones. In addition to the Scheduled Monuments, there are 49 non-designated heritage assets within the Outer Study Area that are listed in the HER as being of national importance (high sensitivity). Of these, only six (all of which are funerary cairns) have settings where wider landscape views and intervisibility are potentially important aspects of their setting. The majority of these archaeological sites lie within the East Rhins Archaeologically Sensitive Area (ASA), which covers a wide expanse of moorland and rough pasture grassland to the west and south west of the proposed Development around the Main Water of Luce and Cross Water of Luce river system. The value and sensitivity criteria for each of the heritage assets in the Outer Study Area is set out in the relevant Technical Appendix (TA 11.2 and 11.3).
57. The East Rhins ASA is an area that has been designated by DGC in recognition of its archaeological interest as a wider collection of important archaeological sites contained within an extensive area that is particularly sensitive to change. These ASAs occur both within settlements and within rural areas. The East Rhins ASA is a rural ASA and is assessed as being of value at the regional level and of medium sensitivity.
58. There are also nine heritage assets that are within 5 km of the proposed Development and which are listed in the HER as being of regional importance (medium sensitivity). All of the regionally important assets are sites that have localised settings, where long distance views to or from the assets, or designed intervisibility between them, are not important aspects to their cultural significance.
59. Within the Outer Study Area there are only three Category B Listed Buildings (of value at the regional level and of medium sensitivity) and one Category C Listed Building (of value at the local level and of low sensitivity) from which there is any degree of predicted theoretical visibility of the proposed Development. All of these buildings have localised settings. Two of these (a Parish Church and its associated manse) are at New Luce, while two others lie in rural locations.

60. New Luce village is a Conservation Area, assessed as being of value at the regional level and of medium sensitivity, that lies at the confluence of the Main Water of Luce and Cross Water of Luce, in a secluded valley setting.
61. There are no Inventory status Gardens and Designed Landscapes within the Outer Study Area, but there are two non-inventory designed landscapes (NIDLs) from which there is some degree of predicted theoretical visibility of the Proposed Development. NIDLs are non-designated heritage assets that are valued at the regional level and of medium sensitivity.

## 11.6 Potential Effects

### 11.6.1 Construction

62. 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, compound, 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.
63. The proposed Development has been designed, as far as possible, to avoid the heritage assets identified by the baseline study. All but one of the assets of High sensitivity have been avoided. In the case of the one asset (7) that has not been avoided, the proposed track layout to the southern borrow pit search area has been routed to avoid the most sensitive archaeological remains around High Eldrig Farm and to make use of an existing farm access track.
64. Whilst it has been possible to avoid the assets of High sensitivity within the Site through design mitigation, in order to accommodate other environmental constraints some assets of less than High sensitivity would be directly affected. Details of the design evolution and responses to environmental considerations are set out in Chapter 3: Site Selection & Design). The proposed Development would have a direct impact on the following eight heritage assets:
- High Eldrig Farmstead (7), an asset of High sensitivity, would be crossed by the proposed access track to the southern borrow pit search area. The proposed access track would be routed across the northern part of the field system where there are no remains of the pre-19th century phase of the farmstead. The earliest phase of the farmstead lies to the south and south west of the existing farm buildings, in an area that would be avoided by any construction works. Consequently, the predicted direct impact on a High sensitivity asset is assessed as being of negligible magnitude, resulting in an effect of **Minor** significance (not significant in EIA terms).
  - High Eldrig, Monandie Burn, Cairnfield (13), an asset of Medium sensitivity, would be crossed by the proposed access track north west of turbine T9. Field survey recorded at least four cairns in this area which may possibly be associated with the small field system that lies to the west (26). The proposed access track north west of T9 crosses the north eastern part of the cairnfield and construction work could directly impact on one or more of any surviving cairns in this area. As only a limited part of the cairnfield would be affected, it is assessed that, without mitigation, the predicted direct impact on a Medium sensitivity asset would be of no more than medium magnitude, resulting in an effect of **Moderate** significance (significant in EIA terms).
  - High Eldrig, Cairnfield (16), an asset of Medium sensitivity, would be crossed by proposed access tracks to turbines T4 and T10 and directly affected by the construction of the crane hardstanding at T10. Field survey identified no cairns in this area, which was covered in long grass and deep heather at the time of survey, hindering the ready identification of low relief features. The proposed access tracks and the crane hardstanding for T10 would cover a large part of the cairnfield and could directly impact on one or more of any surviving cairns in this area. Consequently, it is assessed that, without mitigation, the predicted direct impact on a Medium sensitivity asset would be of medium magnitude, resulting in an effect of **Moderate** significance (significant in EIA terms).
  - Belgaverie, Cairnfield (17), an asset of Medium sensitivity, would be directly affected by the construction of the crane hardstanding and turbine foundations at T4. Field survey identified only two cairns in this area, which was covered in long grass and deep heather at the time of survey, hindering the ready identification of low relief features. The proposed access track and the crane hardstanding for T4 would cover a large part of the cairnfield and could directly impact on one or more of any surviving cairns in this area. Consequently, it is assessed that, without mitigation, the predicted direct impact on a Medium sensitivity asset would be of medium magnitude, resulting in an effect of **Moderate** significance (significant in EIA terms).
65. In addition to the identified direct impacts, elements of the proposed Development lie close to five heritage assets and within the micro-siting allowance. In these cases, it is possible that micro-siting of tracks, turbine positions or solar arrays could, without mitigation, result in direct impacts.
- Monandie Farmstead (4), an asset of High sensitivity, lies immediately to the south of a proposed solar array between turbines T1 and T9. It is possible that, without mitigation, any micro-siting of the solar array in this area could result in a direct impact of low magnitude on an asset of High sensitivity, resulting in an effect of **Moderate** significance (significant in EIA terms).
  - The Garry, Enclosure (29), an asset of Low sensitivity, lies immediately to the east of a proposed solar array and directly north of the proposed access track between turbines T5 and T8. It is possible that, without mitigation, any micro-siting of the solar array in this area could result in a direct impact of high magnitude on an asset of Low sensitivity, resulting in an effect of **Moderate** significance (significant in EIA terms).
  - Dirvananie Township, Field System (31), an asset of High sensitivity, lies to the south and east of a proposed solar array and borrow pit search area at turbine T2. It is possible that, without mitigation, any micro-siting of the solar array or of the borrow pit in this area could result in a direct impact of low magnitude on an asset of High sensitivity, resulting in an effect of **Moderate** significance (significant in EIA terms).
  - Dirvachlie Farmstead, Field System (36), an asset of Medium sensitivity, lies directly to the east of the proposed location of turbine T6 and north of proposed turbine T1. It is possible that, without mitigation, any micro-siting of the access tracks or turbine locations in this area could result in a direct impact of low magnitude on an asset of Medium sensitivity, resulting in an effect of **Minor** significance (not significant in EIA terms).
  - High Eldrig Gravel Pit (41), an asset of Negligible sensitivity, lies directly alongside the existing farm access track to High Eldrig Farm, which is intended to provide access to the southern borrow pit search area. Any track widening work on the south side of the existing farm track could result in a direct impact of at most medium magnitude on the poorly preserved remains of the old gravel pit. The effect of a medium magnitude direct impact on an asset of negligible sensitivity is assessed to be of **Negligible** significance (not significant in EIA terms).
66. 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. No assets beyond 10 km have been identified by HES or by DGCAS as requiring consideration for potential effects on their settings. **Technical Appendices 11.2** and **11.3** contain tabulated assessments of the predicted effects.
67. 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 the locations of the cultural heritage assets shown on **Figure 11.2**. The criteria detailed in **Tables 11.4.1** to **11.4.3** 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**. The assessments are supported with

visualisations (**Figures 11.4 to 11.12**) 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.

68. The following discussion addresses those assets identified by HES or by DGCAS as requiring detailed consideration, where the significance of the predicted effect is assessed as being significant in EIA terms and those that have been represented by photomontages providing an assessment from a range of wider viewpoints and demonstrating the effect of the proposed Development on the heritage assets within the Outer Study Area. A tabulated summary assessment on a site-by-site basis is presented in **Technical Appendices 11.2 and 11.3**.
69. The assessment of the impact of the proposed Development on the historic landscape within the Site is dealt with by treating the individual heritage assets as a collective whole (the Tarf Water Historic Landscape). This approach recognises that the heritage assets recorded within the Site, including a range of medieval/post-medieval farmsteads of regional and national value interspersed with remains of prehistoric funerary and domestic activity, are component parts of a relict historic landscape rather than isolated individual assets.

#### 11.6.2.1 Wood Cairn, cairn, Eldrig Fell (SM1953) (Figure 6.15; LVIA VP 1)

70. Wood Cairn is a funerary monument of probable Neolithic or early Bronze Age date which is set in a prominent position on the summit of Eldrig Fell from where it commands extensive views over the surrounding landscape. The main views from the cairn are distant views over the wider landscape and includes views to Eldrig Loch to the north. Views to and from the cairn to the south east are constrained by topography and the cairn is not readily visible from the immediate landscape around the foot of the Fell.
71. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 11 proposed turbines, the nearest turbine being approximately 910 m distant from the cairn, in views to the north west. The photomontage from the cairn (**Figure 6.15; LVIA VP 1**) shows the predicted visibility of the proposed Development (turbines, other infrastructure and solar arrays), with the Operational Kilgallioch Windfarm and commercial forestry in the background. Views in other directions from Wood Cairn would not be affected by the proposed Development, but these view directions also include operational windfarm developments: notably Airies Windfarm, to the south east, and Glenchamber, Artfield Fell and Balmurrie windfarms to the south west.
72. The introduction of the proposed Development would have a low magnitude impact on the baseline setting by introducing additional wind turbines into the foreground views to the north west (other views being unaffected). It would remain possible for any visitor to understand the cairn as a funerary monument set in a prominent topographic position, but the introduction of the proposed Development would noticeably alter the way in which the cairn and its setting are experienced and appreciated. The integrity of the hilltop setting would be uncompromised, and it would remain possible for any visitor to read the integrity of the wider landscape setting. Overall, it is assessed that the change to the baseline setting would be appreciable and the effect, on an asset of high sensitivity, is therefore assessed as being of **Moderate** significance (significant in EIA terms).

#### 11.6.2.2 Carn na Gath, long cairn, Balmurrie Fell (SM1922) (Figure 11.4)

73. Carn na Gath is a funerary monument of probable Neolithic date. It stands in open moorland on west facing slope of Balmurrie Fell, close to un-named watercourse, tributary of the Cross Water of Luce. It is aligned north north east to south south west, with the wider end at the south south west. It lies around 350 m to the east of the Southern Upland Way (SUW), and around 560 m to the west of the nearest turbine of the operational Balmurrie Windfarm. It is part of an extensive prehistoric settlement landscape within the East Rhins ASA. The cairn is sited such that it has long views to the south west, views to the north east being more constrained by rising topography. It is a visible monument in the landscape from up to 500 m distant and it is a promoted heritage site on the SUW.
74. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of ten proposed turbines (eight at hub height), the nearest turbine being 2.94 km distant, in views to the north east. The photomontage from the cairn (**Figure 11.4**) shows nine turbines visible (seven at hub height), with the Operational Kilgallioch Windfarm and commercial forestry in the background. The proposed Development would be partly screened by the intervening topography and visible only beyond the skyline. Views in other directions from the cairn would not be affected by the proposed Development, but these views include the operational Artfield Fell and Balmurrie windfarms to the north east at much closer distance.

75. The introduction of the proposed Development would have a low magnitude impact on the baseline setting of Carn na Gath long cairn, by introducing additional wind turbines into the distant views to the north west. It would remain possible for any visitor to understand the cairn as a funerary monument set in a prominent topographic position and the presence of the proposed Development would not appreciably alter the way in which the cairn and its setting are experienced and appreciated.

76. Overall therefore, it is assessed that the change to the baseline setting would be noticeable but not intrusive and the effect, on an asset of high sensitivity, is therefore assessed as being of **Minor** significance (not significant in EIA terms).

#### 11.6.2.3 Caves of Kilhern, Chambered Cairn 450m SE of Draingower Lodge (SM1928) (Figure 11.5)

77. Caves of Kilhern is a long cairn funerary monument of Neolithic date. It stands in open moorland on a gentle south east facing slope in terrain dotted with rocky knolls. It lies just south of a drystone wall and is aligned east north east to west south west, with the wider end at the east north east. It is part of an extensive prehistoric settlement landscape within the East Rhins ASA. The cairn is sited such that it has open views to the south, views to the north being more constrained by rising topography. It is not a prominently visible monument in the landscape except in view from the south up to around 300 m distant. It lies 250 m north east of the SUW, on which it is a promoted heritage site.
78. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of ten proposed turbines (four at hub height), the nearest turbine being 6.23 km distant, in views to the north east. The photomontage from the cairn (**Figure 11.5**) shows eight turbines visible (two at hub height), with the Operational Kilgallioch Windfarm and commercial forestry in the background. The operational windfarms at Balmurrie Fell and Artfield Fell are also visible in the same view. The proposed Development would be partly screened by the intervening topography and visible only beyond the skyline and in the same context as the operational windfarms. Views in other directions from the cairn would not be affected by the proposed Development, but these views include the operational Glenchamber Windfarm, to the east, and Carscreugh Windfarm, to the south east.
79. The introduction of the proposed Development would have a negligible magnitude impact on the baseline setting of Caves of Kilhern chambered cairn, by introducing additional wind turbines into a distant view to the north east from the cairn that is already dominated by commercial forestry and modern renewable energy developments. It would remain possible for any visitor to understand the cairn as a funerary monument set in a moorland landscape and the presence of the proposed Development would not appreciably alter the way in which the cairn and its setting are experienced and appreciated.
80. Overall therefore, it is assessed that the change to the baseline setting of Caves of Kilhern chambered cairn would be barely noticeable against the baseline setting and the effect, on an asset of high sensitivity, is assessed as being of no more than **Minor** significance (not significant in EIA terms).

#### 11.6.2.4 Bannan of Garvilland, Fort (SM1955) (Figure 11.6)

81. Bannan of Garvilland Fort is situated on the summit of a prominent hillock in rough pasture moorland. There are open views from the fort to the north, north east and south east. The operational Glenchamber and Artfield Fell windfarms are prominently visible in the view north east; the nearest of the Glenchamber turbines being around 1 km from the fort. The fort is part of an extensive prehistoric settlement landscape within the East Rhins ASA.
82. The blade tip height ZTV (**Figure 11.2**) predicts that there would be visibility of all 11 proposed turbines (seven at hub height), the nearest turbine being 7.08 km distant, in views to the north north east. The photomontage from the cairn (**Figure 11.6**) shows ten turbines visible (six at hub height), with the operational Glenchamber Windfarm in the foreground and Balmurrie and Artfield Fell windfarms beyond that. The proposed Development would also be seen in the same context as the Operational Kilgallioch Windfarm and commercial forestry in the background. The operational windfarms at Balmurrie Fell and Artfield Fell are also visible in the same view. The proposed Development would be partly screened by the intervening topography and visible only beyond the skyline and in the same context as the operational windfarms; barely distinguishable from those operational developments.
83. The introduction of the proposed Development would have a negligible magnitude impact on the baseline setting of Bannan of Garvilland Fort, by introducing additional wind turbines into a distant view to the north north east from

the fort; a view that is already dominated by commercial forestry and modern renewable energy developments. It would remain possible for any visitor to understand the fort and its topographic setting and the prominence of the fort in the landscape would not be adversely affected by the proposed Development. The presence of the proposed Development would not appreciably alter the way in which the fort and its setting are experienced and appreciated.

84. Overall therefore, it is assessed that the change to the baseline setting would be barely noticeable against the baseline setting and the effect, on an asset of high sensitivity, is assessed as being of no more than **Minor** significance (not significant in EIA terms).

#### 11.6.2.5 Laggangarn, standing stones (SM90199) (Figure 11.7)

85. This monument comprises a pair of standing stones, 1 m apart on a north to south axis, presently occupying a clearing within commercial forestry, close to south west bank of Tarf Water and on the route of the SUW, along which they are a promoted site of archaeological interest. The standing stones are also a Property in Care, managed by Historic Environment Scotland. They have a localised setting dominated by the commercial forestry that surrounds them and they stand at the eastern edge of the Operational Kilgallioch Windfarm, the nearest of those turbines being 650 m to the west. Although they would formerly have had a more open setting, they would not have been prominent features of the landscape except at the localised level along a short section of the Tarf Water.
86. The blade tip height ZTV (Figure 11.2) predicts that, in the absence of the surrounding commercial forestry, there would be visibility of all 11 proposed turbines from the standing stones; the nearest turbine being 1.25 km distant, in views to the south east. The wireline from the standing stones (Figure 11.7) shows the degree of visibility of the proposed Development, demonstrating that the turbines would be seen in the same context as turbines of the Operational Kilgallioch Windfarm and with Airies and Artfield Fell windfarms in the background.
87. The current setting of the Laggangarn standing stones is dominated by commercial forestry and modern renewable energy development. The proposed Development would be a noticeable addition to that baseline by introducing additional wind turbines to the east of the stones. Although the standing stones are presently surrounded and enclosed by commercial forestry, in the absence of the trees the proposed Development would increase the encirclement of their current setting. It would, however, remain possible for any visitor to understand the standing stones as being an ancient monument and the presence of the proposed Development would not appreciably alter the way in which the standing stones and their setting are experienced and appreciated.
88. Overall therefore, it is assessed that taking into account their current baseline setting, the proposed Development would have a low magnitude impact on the setting of the Laggangarn standing stones, an asset of high sensitivity, and give rise to an effect assessed as being of **Minor** significance (not significant in EIA terms).

#### 11.6.2.6 Craigmoddie (MDG2317) (Figure 11.9)

89. Craigmoddie is a deserted settlement of probable medieval/post-medieval date that has many of the characteristics of the several abandoned farmsteads recorded within the Site. It occupies an area of moorland and rough grazing on the southern slopes of Craigmoddie Fell and extends to cover the east facing slope of Airieglasson around the headwaters of a minor watercourse that is a tributary of the River Cree. It has an open aspect to the east and south east and is a component of a wider historic farming landscape that occupies an area of moorland and rough grazing encircled by commercial forestry. The Operational Kilgallioch Windfarm lies to its north and west, the nearest turbine being around 1.5 km to the north.
90. The blade tip height ZTV (Figure 11.2) predicts that there would be visibility of all 11 proposed turbines from the former farmstead; the nearest turbine being 1.16 km distant, in views to the south. The wireline from the farmstead (Figure 11.9) shows the predicted view of the proposed Development, demonstrating that the turbines would be seen in the same context as turbines of the Operational Kilgallioch Windfarm and with Airies, Balmurrie and Artfield Fell windfarms also visible in the distant background. The open aspect views to the south east from the former farmstead would not however be adversely affected. The proposed Development would noticeably alter the current

setting by the introduction of additional turbines in the near distance views to the south but would not appreciably alter the way in which the farmstead and its setting are experienced and appreciated.

91. Overall therefore, it is assessed that, taking into account its current baseline setting, the proposed Development would have a low magnitude impact on the setting of the remains of Craigmoddie farmstead, an asset of high sensitivity, and give rise to an effect assessed as being of **Minor** significance (not significant in EIA terms).

#### 11.6.2.7 Tarf Water Historic Landscape (Figures 11.11 & 11.12)<sup>1</sup>

92. The historic landscape of that part of the Tarf Water valley that lies within the Site includes a range of heritage assets of prehistoric and medieval/post-medieval date that is described above (Section 11.5.1-2). It includes prehistoric funerary monuments (SM1953 and MDG2179) and medieval/post-medieval farmsteads (MDG2180, MDG13122, MDG13123, MDG14474 and MDG14483) and a number of burnt mounds (MDG2194-97, MDG2253-55, MDG2257 and MDG2258), which could be of prehistoric date or of medieval date. The remains are well preserved and cover a wide area along the hill slopes on the north side of the Tarf Water, the farmsteads occupying higher drier ground and benefitting from the natural drainage of watercourses that are minor tributaries of the Tarf Water. The burnt mounds occupy sites close to these same minor watercourses. The farmsteads are part of a wider early historic farming landscape that extends outwith the Site. To the north lie the farmsteads of Craigmoddie (MDG2317), discussed below, and Dirneak (MDG11405), assessed in **Technical Appendix 11.2**. To the south east are the farmsteads of Low Eldrig (MDG14355), which now lies within commercial forestry, and High Airies (2164), which lies within the Airies Windfarm. Collectively, the farmsteads occupy a localised area of undulating upland moorland around minor tributaries of the Tarf Water and the River Cree.
93. This historic landscape is bounded on all sides by commercial forestry and to the west side, on Quarter Fell and Craig Airie Fell, by the Operational Kilgallioch Windfarm, the nearest of the wind turbines being around 550 m to the west of Belgaverie (MDG2250) and Dirvananie (MDG13123). Airies Windfarm lies around 1400 m to the south east of High Eldrig (MDG2180). Other operational windfarms (Artfield Fell and Balmurrie) lie around 2 km to the south of Belgaverie (MDG2250). The historic landscape within the Site has a localised setting that retains a sense of its original moorland and rough grazing character but is surrounded by a wider setting that is dominated by modern commercial forestry and renewable energy development.
94. The proposed Development would introduce further renewable energy development into the localised setting of the Tarf Water historic landscape (Figure 11.1), appreciably altering the current surroundings of the individual components of the historic landscape, and of the collective remains as a whole. The 3D modelled visualisations (Figures 11.11 and 11.12) provide an indication of the impact of the introduction of the proposed Development from two of the historic farmsteads Dirvananie (MDG13123) and Monandie (MDG2177) respectively. The local undulating topography would provide some screening of the lower lying elements of the proposed Development (tracks, borrow pits, compounds and buildings, and the solar arrays) but the wind turbines would be prominent within the immediate setting. The photomontage from the elevated viewpoint on the summit of Eldrig Fell (Volume 4 Figure 6.15g; Viewpoint 1), looking north west over the Site shows how the proposed Development would lie interspersed amongst the surviving components of the Tarf Water historic landscape, with the Operational Kilgallioch Windfarm and surrounding commercial forestry in the background. The wireline visualisation from Craigmoddie (MDG2317), to the north of the Site, shows how the proposed Development would appear, looking south towards the Site. From this viewpoint, none of the components of the historic landscape would be visible.
95. Although it would remain possible for any visitor to understand the heritage assets, individually and collectively, the introduction of the proposed Development would appreciably alter the way in which the assets are experienced and appreciated. Overall therefore, taking into account the baseline setting of the components that make up the Tarf Water historic landscape, it is assessed that the proposed Development would have an impact on the current setting of high magnitude on a group of heritage assets of medium and high sensitivity, and that this would give rise to an effect of **Major** significance (significant in EIA terms).

<sup>1</sup> The 3D modelled visualisations (Figures 11.11 & 11.12) are presented as four 90-degree arcs of view. Each view includes a wireline showing the proposed Development along with cumulative developments (where these would be theoretically visible) followed by a modelled visualisation showing an aerial photograph (Ordnance

Survey Master Map Imagery 2019) draped over Ordnance Survey digital terrain modelling. The model shows only the proposed Development (including turbines, other infrastructure and solar arrays).

## 11.7 Mitigation

### 11.7.1 Embedded Mitigation

96. The layout of the proposed Development has been designed as far as possible to avoid direct effects on the identified heritage assets within the Site. Specific measures taken to ensure the survival of the integrity of archaeological remains include:

- sensitive siting of the proposed infrastructure, incorporating appropriate buffer distances from those heritage assets identified in the HER as being of national importance in order to avoid or reduce effects on the cultural heritage and the Tarf Water historic landscape;
- turbine positions were sited to avoid the well-preserved medieval/post medieval field systems and access tracks routes to avoid any impact on the integrity of the remains;
- borrow pit search areas were sited to avoid direct impacts on the relict field systems and to avoid being visible from them; and,
- solar arrays were located so as not to intrude within defined buffers around the relict field systems; the access track to the southern borrow pit search area was routed to avoid the preserved remains of the earliest phase of the field system at High Eldrig.

### 11.7.2 Construction Phase Mitigation

97. 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) DGCAS, acting on behalf of the Council.

#### 11.7.2.1 Further Survey

98. Three areas (13, 16 and 17) have been identified where groups of small cairns have been recorded but where precise numbers and the locations of individual cairns have not yet been fully established. Grass and heather cover at the time of the field survey hindered the ready identification of the individual cairns within these areas. As it has not been possible to entirely avoid the estimated extent of the cairnfields, as established by the demarcated areas attributed in the HER, a programme of additional, detailed survey of these areas, along and around the proposed infrastructure layout would be undertaken prior to the commencement of the construction phase.

99. Each cairnfield would be the subject of a detailed transect survey and individual cairns would be marked, recorded and surveyed using GPS surveying equipment, such that a detailed record of the density of the distribution of the cairns and the extent of the cairnfield is made. The information gathered would then be used to determine the scope of further appropriate mitigation. Mitigation likely to be considered includes micrositing the infrastructure layout in these areas to avoid, as far as possible, individual cairns or groups of cairns and to ensure their preservation in situ (**Section 11.7.1.2**) or archaeological excavation of individual cairns or groups of cairns to a strategy and standard acceptable to DGCAS (**Section 11.7.1.3**).

#### 11.7.2.2 Preservation in situ

100. 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 micrositing allowance and would allow for flexibility to relocate turbines, tracks or other infrastructure components as necessary to accommodate the range of likely constraints.

101. 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.

102. Heritage assets identified as requiring marking out are:

- Monandie Farmstead (4): The remains of the field system would be protected by placing high visibility markers set 5 m from the edge of the field system along its northern extent where it is passed by a proposed access track and a solar array. The markers would be used to signal to construction workers that no micrositing of the track or elements of the solar array should extend beyond the markers.
- Dirvananie Township, Field System (31): The remains of the field system would be protected by placing high visibility markers 5 m from the edge of the field system where it is closest to the proposed solar array fencing. The markers would be used to signal to construction workers that no micrositing of the track should extend beyond the markers.
- Dirvachlie Farmstead, Field System (36): The remains of the field system would be protected by placing high visibility markers 5 m from the edge of the field system where lies closest to the proposed site of turbine T6 and the access track north west of T1. The markers would be used to signal to construction workers that no micrositing of the turbine or access track should extend beyond the markers.

103. In addition to the locations identified above, marking out of heritage assets for avoidance during the construction works is recommended in those cairnfields (13, 16 and 17) that would be directly affected by the proposed Development. The further survey work in these areas (**Section 11.7.1.1**) would be used to guide micrositing within the cairnfields and any cairns that can be preserved would be identified by placing high visibility markers around the individual cairns or around groups of cairns; the markers set 5 m from the outermost edge of each cairn or area of cairns. These markers would be used to signal to construction workers that no micrositing of the turbine or access track should extend beyond the markers without first consulting with the appointed archaeological contractor as to what alternative mitigation may be necessary.

#### 11.7.2.3 Archaeological Investigations/Watching Briefs/Excavations

104. Where it is not possible to avoid identified heritage assets of local or greater value (Low, Medium or High sensitivity), either through the design mitigation already implemented or resulting from the need to microsite elements of the infrastructure for other environmental consideration or for engineering reasons, alternative mitigation may be required.

105. Archaeological investigation of individual heritage assets is likely to be required in the following locations:

- High Eldrig, Monandie Burn, Cairnfield (13): any of the cairns that cannot be avoided by the proposed Development would be excavated to a strategy and standard acceptable to DGCAS. This may require full excavation of individual cairns, or a sample selection of these, depending upon the outcome of the additional survey work undertaken in this area.
- High Eldrig, Cairnfield (16): any of the cairns that cannot be avoided by the proposed Development would be excavated to a strategy and standard acceptable to DGCAS. This may require full excavation of individual cairns, or a sample selection of these, depending upon the outcome of the additional survey work undertaken in this area.
- Belgaverie, Cairnfield (17): any of the cairns that cannot be avoided by the proposed Development would be excavated to a strategy and standard acceptable to DGCAS. This may require full excavation of individual cairns, or a sample selection of these, depending upon the outcome of the additional survey work undertaken in this area.
- The Gary, Enclosure, Structure (48): the possible structure/enclosure that lies to the southeast of a small sub-circular enclosure (29) would be excavated to a strategy and standard acceptable to DGCAS.

106. The archaeological potential of the Site has been assessed as being moderate to high, based on the results of the baseline study. Areas of sensitivity, where there is an elevated possibility that archaeological remains may be present, are likely to be those in and around one or more of the identified heritage assets: burnt mounds, cairns and medieval/post-medieval farmsteads. As a result, it is advisable that watching briefs should be undertaken in the following areas:

- High Eldrig Farmstead (7): a watching brief would be undertaken where the proposed access track to the southern borrow pit search area passes through the northern part of the field system associated with High Eldrig Farm. Any discoveries of archaeologically significant deposits or features would be the subject of further mitigation to a strategy and standard acceptable to DGCAS.
- High Eldrig, Monandie Burn, Cairnfield (13): a watching brief would be undertaken during all ground-breaking works where topsoil removal is required. Any discoveries of archaeologically significant deposits or features would be the subject of further mitigation to a strategy and standard acceptable to DGCAS.

- High Eldrig, Cairnfield (16): a watching brief would be undertaken during all ground-breaking works where topsoil removal is required. Any discoveries of archaeologically significant deposits or features would be the subject of further mitigation to a strategy and standard acceptable to DGCAS.
  - Belgaverie, Cairnfield (17): a watching brief would be undertaken during all ground-breaking works where topsoil removal is required. Any discoveries of archaeologically significant deposits or features would be the subject of further mitigation to a strategy and standard acceptable to DGCAS.
107. The watching briefs 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. If significant discoveries are made during the archaeological monitoring works 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.

#### 11.7.2.4 Construction Guidelines

108. 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.
109. The guidelines would make clear the legal responsibilities placed upon those who disturb artefacts or human remains.

#### 11.7.2.5 Archaeological Enhancement

110. In addition to the avoidance and reduction mitigation measures outline above, a package of archaeological enhancement measures is proposed that would promote the archaeological interest of the Site to a wider public. The provision of a network of tracks across the Site would improve accessibility to this part of the Tarf Water landscape and to the historic landscape that is preserved within the Site. The SUW passes close by, to the west of the Site and it is proposed that the provision of publicity of the historic medieval/post-medieval farms within the Site would provide an opportunity for users of the SUW to avail themselves of the improved access provision to explore these well-preserved archaeological sites. Other local interest groups, such as local historical societies and schools could also be encouraged to explore the landscapes of their ancestors. Promotion of the cultural heritage within and around the Site could be facilitated by SUW Rangers. The Operational Kilgallioch Windfarm provides £50,000 per annum funding towards two SUW Rangers to promote, manage and maintain the SUW across Dumfries & Galloway. The SUW Rangers have a five-year Development Plan which includes maintenance of the route and signage but also addresses promotion of the route and engagement with route users, local businesses and communities to identify gaps in provision and opportunities for users to better benefit from the route. The SUW Rangers' ownership of the SUW website and other social media platforms presents an opportunity to more effectively share information on cultural heritage assets.
111. It is proposed that a detailed survey of the moorland landscape that is enclosed by commercial forestry, from the Tarf Water and Eldrig Fell in the south to White Hill in the north would be carried out using Lidar technology.
112. An airborne Lidar survey of the moorland would be commissioned with the aim to provide an accurate and detailed topographical record of the surviving archaeological remains of the historic landscape within this study area envelope. The Lidar survey would be undertaken to a standard and level of detail that would provide a baseline record of the surviving earthwork remains that would provide the DGCAS with a resource that could facilitate future management and monitoring of the cultural heritage resource of the historic farming landscape. The Lidar data would be archived with both the Council's HER and with the National Record of the Historic Environment administered by HES and available for public consultation and research. This approach to mitigation has been employed elsewhere in relation to renewable energy developments (Baillie Wind Farm and Burn o' Whilks Wind Farm in Caithness being examples where the technique has been successfully applied).

#### 11.7.3 Operational Phase Mitigation

113. 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.

#### 11.7.4 Monitoring

114. 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

115. 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). The summary table (Table 11.10.1) at the end of this chapter sets out predicted effects prior to the adoption of mitigation measures and the residual effect resulting following implementation of the mitigation measures proposed.

### 11.8.2 Residual Operational Effects

116. 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. Effects on the settings of heritage assets are long-term and cannot be reduced by any form of mitigation other than avoidance or reduction.
117. A residual effect of **Major** significance (significant in EIA terms) is predicted, on the setting of the collective heritage assets within the Site that are collectively assessed as comprising a historic landscape.
118. A residual effect of **Moderate** significance (significant in EIA terms) is predicted, on the setting of one Scheduled Monument: Wood Cairn, cairn, Eldrig Fell (SM1953).
119. 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

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

### 11.9.2 Potential Cumulative Operational Effects

121. 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.
122. **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 cumulative impact on cultural heritage is likely to arise from the addition of the proposed Development to a baseline that includes the Operational Kilgallioch Windfarm and other operational windfarms at Arcleoch, Glen App, Airies Farm, Artfield Fell, Balmurrie Fell, Glenchamber and Carscreugh. There are also consented developments at Chirmorie

and Stranoch 1 and two developments (Arecleoch Extension and Stranoch 2) at the application stage. There are also three developments (Arnsheen, Bargrennan and Garvilland) at the Scoping stage. **Figure 11.13** shows the locations of the cultural heritage visualisation viewpoints and the pattern of cumulative development in the wider local area.

123. The cumulative impact of the addition of the proposed Development to a baseline including operational developments has been assessed above; the proposed Development being assessed in the context of the existing baseline, which includes these operational developments. 360 degree cumulative wirelines (**Figures 11.14 - 22**) are provided for each of the heritage assets discussed above (11.6.2) showing the cumulative developments where they are visible from each asset.
124. The additional impact of the introduction of the proposed Development to a baseline including consented developments and Application/Appeal developments is represented on the cumulative wireline visualisations (**Figures 11.14 - 22**). From these, it can be seen that the introduction of the proposed Development would not result in any increase (or decrease) in the level of significance assessed against the existing baseline. From each of the assets assessed, the addition of the proposed Development in this baseline scenario would be the same as that of the proposed Development within the context of the existing baseline of operational developments.

## 11.10 Summary

125. 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 DGCAS.
126. Forty-nine heritage assets were identified within the Inner Study Area, full details of which are included in **Technical Appendix 11.1**. Two of these (1 and 6) are burial cairns of prehistoric date assessed as being of high sensitivity, while one other (5), a possible chambered cairn, is of medium sensitivity. Three historic farmsteads (4, 7 and 31) of medieval or post-medieval date are of high sensitivity and three others (25, 30 and 36) are of medium sensitivity. Nine of the heritage assets are burnt mounds (seven (8-11 and 18-20) of high sensitivity and two (22 and 23) of medium sensitivity). Eight cairnfields (3, 12-17 and 45) of medium sensitivity have also been identified. Two enclosures (2 and 21) of unknown date, but likely to be either of prehistoric date or associated with one of the medieval/post-medieval farmsteads, is also assessed as being of medium sensitivity.
127. The remaining 22 assets are related to post-medieval, pre-improvement period agricultural use of the landscape and include minor buildings and structures, sheepfolds and other small enclosures, peat cuttings and quarries assessed as being of low or negligible sensitivity.
128. 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 moderate to high probability of hitherto unidentified archaeological remains of prehistoric or medieval/post-medieval date being present within the Site.
129. The layout of the proposed Development has been designed as far as possible to avoid direct effects on the identified heritage assets within the Site and all but one of the assets of high sensitivity have been avoided. Three assets of medium sensitivity would be directly affected by the proposed Development.
130. Mitigation measures have been set out that would avoid potential direct effects on three heritage assets (4, 31 and 36) where elements of the extensive former farmstead field systems lie in close proximity to the proposed Development infrastructure. A need for archaeological investigation mitigation has been identified in relation to three cairnfields (13, 16 and 17) and for one small structure (48), a possible shieling, that are likely to be directly affected by the proposed Development.
131. Archaeological enhancement mitigation measures are set out that would benefit the archaeological record by providing a pre-development topographic Lidar survey of the archaeological landscape affected by the proposed

Development. That survey would serve as a permanent archive record of the current baseline condition of the component parts of the historic landscape, facilitating future monitoring of the condition of the assets and providing a dataset for future archaeological research.

132. No monitoring measures are required in relation to predicted effects on cultural heritage.
133. One hundred and fifty-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 49 non-designated heritage assets within the Outer Study Area that are listed in the HER as being of national importance (high sensitivity) from which there is some degree of theoretical visibility of the proposed Development. There are also three Category B Listed Buildings (medium sensitivity) and one Category C Listed Building (low sensitivity) from which there is predicted theoretical visibility of the proposed Development. These, together with other assets considered in the assessment of effects on their settings, are listed in **Technical Appendices 11.2 and 11.3**, which include tabulated assessments of the effect of the proposed Development on their settings.
134. Summary table 11.10.1 sets out a summary of the predicted effects prior to the adoption of mitigation measures and the residual effect resulting following implementation of the mitigation measures proposed.
135. A long-term effect of **Major** significance (significant in EIA terms) is predicted on the setting of the historic landscape within the Site, both individually and cumulatively with other developments.
136. An effect of **Moderate** significance (significant in EIA terms) is predicted on the setting of Wood Cairn (SM1953) that would last for the duration of the operational phase of the proposed Development individually and cumulatively with other developments.

| Description of Effect   | Significance of Potential Effect |                      | Mitigation Measure  | Significance of Residual Effect |                      |
|---|----------------------------------|----------------------|---|---------------------------------|----------------------|
|   | Significance                     | Beneficial / Adverse |   | Significance                    | Beneficial / Adverse |
| <i>During Construction</i>  |                                  |                      |   |                                 |                      |
| Direct impact on High Eldrig Farmstead (7)                        | Minor                            | Adverse              | Watching brief to a strategy and standard acceptable to DGCAS.  | Negligible                      | Adverse              |
| Direct impact on High Eldrig, Monandie Burn, Cairnfield (13)      | Moderate                         | Adverse              | Further survey to identify and record individual cairns. Avoidance where possible (preservation in situ). Excavation to a strategy and standard acceptable to DGCAS (preservation by record). Watching brief to a strategy and standard acceptable to DGCAS (Preservation by record). | Minor                           | Adverse              |
| Direct impact on High Eldrig, Cairnfield (16)                     | Moderate                         | Adverse              | Further survey to identify and record individual cairns. Avoidance where possible (preservation in situ). Excavation to a strategy and standard acceptable to DGCAS (preservation by record). Watching brief to a strategy and standard acceptable to DGCAS (Preservation by record). | Minor                           | Adverse              |
| Direct impact on Belgaverie, Cairnfield (17)                      | Moderate                         | Adverse              | Further survey to identify and record individual cairns. Avoidance where possible (preservation in situ). Excavation to a strategy and standard acceptable to DGCAS (preservation by record). Watching brief to a strategy and standard acceptable to DGCAS (Preservation by record). | Minor                           | Adverse              |
| Direct impact on Dirvananie, Hay Ree (38)                         | Minor                            | Adverse              | None  | Minor                           | Adverse              |
| Direct impact on High Eldrig, Gravel Pit (42)                     | Minor                            | Adverse              | None  | Minor                           | Adverse              |
| Direct impact on Ha' Hill, Possible Enclosure (44)                | Minor                            | Adverse              | None  | Minor                           | Adverse              |
| Direct impact on The Gary, Enclosure, Structure (48)              | Moderate                         | Adverse              | Excavation to a strategy and standard acceptable to DGCAS.  | Minor                           | Adverse              |
| Possible direct impact on Monandie Farmstead (4)                  | Moderate                         | Adverse              | Mark out during construction period, ensuring preservation in situ.   | None                            | n/a                  |
| Possible direct impact on The Garry, Enclosure (29)               | Moderate                         | Adverse              | Mark out during construction period, ensuring preservation in situ.   | None                            | n/a                  |
| Possible direct impact on Dirvananie Township, Field System (31)  | Moderate                         | Adverse              | Mark out during construction period, ensuring preservation in situ.   | None                            | n/a                  |
| Possible direct impact on Dirvachlie Farmstead, Field System (36) | Minor                            | Adverse              | Mark out during construction period, ensuring preservation in situ.   | None                            | n/a                  |

|   |                    |         |  |                 |                |
|---|--------------------|---------|--|-----------------|----------------|
| Possible direct impact on High Eldrig Gravel Pit (41)   | Negligible         | Adverse | None   | Negligible      | Adverse        |
| Possible direct impact on buried archaeological remains   | Unknown (Moderate) | Adverse | Watching brief (including completion of any consequential mitigation) to a strategy and standard acceptable to DGCAS | Minor           | Adverse        |
| <i>During Operation</i>   |                    |         |  |                 |                |
| Impact on the setting of one Scheduled Monument: Wood Cairn, cairn, Eldrig Fell (SM1953).   | Moderate           | Adverse | Provision of a package of archaeological enhancement measures as offset mitigation.                                  | <b>Moderate</b> | <b>Adverse</b> |
| Impact on the setting of a historic landscape containing a group of historic farmsteads and prehistoric remains of regional and national value.                             | Major              | Adverse | Provision of a package of archaeological enhancement measures as offset mitigation.                                  | <b>Major</b>    | <b>Adverse</b> |
| Impacts on the settings of 158 other Scheduled Monuments within the Outer Study Area.   | Minor              | Adverse | None   | Minor           | Adverse        |
| Impacts on the settings of four other non-designated heritage assets of national heritage value within the Outer Study Area.  | Minor              | Adverse | None   | Minor           | Adverse        |
| Impacts on the settings of four other non-designated heritage assets of regional heritage value within the Outer Study Area.  | Negligible         | Adverse | None   | Negligible      | Adverse        |
| Impacts on the settings of four Listed Buildings within the Outer Study Area.   | Negligible         | Neutral | None   | Negligible      | Neutral        |
| Impact on the setting of one Conservation Area within the Outer Study Area.   | Negligible         | Neutral | None   | Negligible      | Neutral        |
| Impact on the setting of one Archaeologically Sensitive Area within the Outer Study Area.   | Negligible         | Neutral | None   | Negligible      | Neutral        |
| Impacts on the settings of two NIDLs within the Outer Study Area.   | Negligible         | Neutral | None   | Negligible      | Neutral        |
| <i>Cumulative Effects</i>   |                    |         |  |                 |                |
| Cumulative impact of the setting of one Scheduled Monument: Wood Cairn, cairn, Eldrig Fell (SM1953).  | Moderate           | Adverse | Provision of a package of archaeological enhancement measures as offset mitigation.                                  | <b>Moderate</b> | <b>Adverse</b> |
| Cumulative impact of the setting of on the setting of a historic landscape containing a group of historic farmsteads and prehistoric remains of regional and national value | Major              | Adverse | Provision of a package of archaeological enhancement measures as offset mitigation.                                  | <b>Major</b>    | <b>Adverse</b> |

Table 11.10.1 Summary Table



## 11.11 References

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