Fred. Olsen Renewables

Chapter 7

Cultural Heritage

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Glossary

Term	Definition
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of drawing together by the developer, in a systematic way, a description of the development and information relating to the likely significant environmental effects arising from a Proposed Development
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 Regulation 5
The Proposed Development	The Proposed Windy Standard I Repower Wind Farm
The Proposed Development Area	The area shown delineated by the red line boundary shown on Figure 1.2
Inner Study Area	Proposed Development Area plus 1km from the red line boundary

List of Abbreviations

Abbreviation	Description
CIfA	Chartered Institute for Archaeologists
DGAS	Dumfries and Galloway Archaeology Service
DTM	Digital Terrain Model
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
GDL	Garden and Designed Landscape
HER	Historic Environment Record
HES	Historic Environment Scotland
ISA	Inner Study Area
NRHE	National Record of the Historic Environment
OS	Ordnance Survey
OSA	Outer Study Area
ZTV	Zone of Theoretical Visibility

7.1 STATEMENT OF COMPETENCE

7.1.1 The Assessor undertaking this chapter is an Associate of the Chartered Institute for Archaeologists (CIfA), has 19 years of professional experience in the cultural heritage sector, including 12 years undertaking Environmental Impact Assessments (EIA).

7.2 INTRODUCTION

7.2.1 This section presents the impact assessment for Cultural Heritage. The purpose of the assessment is to identify the potential effect of the Proposed Windy Standard I Repower Wind Farm (Proposed Development) on the historic environment and its heritage significance within the area in which the development is proposed. This assessment follows policy and best practice guidance in order to establish a robust and transparent analysis of the issues.

7.2.2 The heritage assets which form the historic environment constitute a finite and non-renewable resource. Direct physical impacts on assets are permanent and irreversible. Some indirect setting impacts are temporary and/or reversible, particularly with respect to those due to construction activity.

7.3 LEGISLATION, POLICY AND GUIDANCE

Legislation

7.3.1 The key pieces of legislation that cover the historic environment with respect to terrestrial planning area as follows:

- Historic Buildings and Ancient Monuments Act 1953;
- Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997; all acts as amended by the Historic Environment (Amendment) (Scotland) Act 2011; and
- Statutory Instrument No 102 Town and Country Planning (EIA Scotland) Regulations 2017.

National Policy

7.3.2 The key national policies are as follows:

- Scottish Planning Policy 2014, paragraphs 135-151;
- Historic Environment Policy for Scotland 2016;
- Historic Environment Circular 1: Policies and Procedures 2019; and
- Designation Policy and Selection Guidance 2019.

Local Planning Policy

7.3.3 The Dumfries and Galloway Local Development Plan 2 contains the following relevant policies:

- HE1 Listed Buildings;
- HE3 Archaeology;
- HE4 Archaeologically Sensitive Areas;
- HE6 Gardens and Designed Landscapes; and
- HE8 Enabling Development.

7.3.4 In addition, there is the Supplementary Guidance document Historic Built Environment (February 2020).

Guidance

7.3.5 The key guidance documents referred to are:

- *Managing Change in the Historic Environment: Setting.* Historic Environment Scotland 2016; and
- *Standard and Guidance for Historic Environment Desk Based Assessment*. Charted Institute for Archaeologists 2014, updated 2020;

7.3.6 Due cognisance has also been taken of the *Environmental Impact Assessment Handbook,* Scottish National Heritage and Historic Environment Scotland 2018.

7.4 METHOD OF ASSESSMENT

Study Areas

7.4.1 The cultural heritage assessment has employed two study areas. The Inner Study Area (ISA) comprises the redline boundary of the Proposed Development and an area of 1 km surrounding it. This study area has allowed the development of the local historic environment to be understood, and on this basis the assessment of the significance of known heritage assets located in proximity to the Proposed Development. This in turn has facilitated the assessment of potential for currently unknown assets to be present within the area of the Proposed Development.

7.4.2 An Outer Study Area (OSA) comprising the area from the boundary of the ISA to 15 km from the locations of the proposed turbines is used to identify heritage assets of national importance for the purpose of assessing potential impacts on these assets resulting from changes in their setting. Indirect impacts on designated heritage assets of regional importance will be assessed in an area up to 5 km from the locations of the proposed turbines. The OSA dimensions have been adopted to reflect the realistic prospect of significant impacts on heritage assets of different values.

7.4.3 Assessment of the potential indirect effects resulting from setting change will be carried out on all the assets within the ISA.

7.4.4 The extents of the Study Areas area shown in Figures 7.1 and 7.2.

Data Sources

7.4.5 The baseline study that provides an overview of the historic environment within the Study Areas is based on the following

- Consultation of the Dumfries and Galloway Council Historic Environment Record (HER);
- Consultation of the National Record of the Historic Environment (NRHE) (Canmore);
- Historical map regression using historical map sources covering the ISA to identify changes in development of the historic landscape;
- Review of available Historic Landscape Characterisation of the ISA;
- Review of relevant geotechnical and geological data;
- Readily available published sources;
- Online data on designated assets held by Historic Environment Scotland (HES); and
- Walkover survey.

7.4.6 The records from these various sources have been combined to form a single gazetteer of heritage assets within the ISA. The full gazetteer forms Appendix 7.1.

7.4.7 The baseline condition of the historic environment includes the presence of the current wind farms, including the existing Brockloch Rig, which is to be decommissioned and replace as part of the proposed re-powering.

Site Inspection

7.4.8 A walkover inspection of the Proposed Development, including the proposed access track, was undertaken on 17 March 2022. All proposed elements of the infrastructure and borrow pit locations were inspected. The weather varied from drizzle/low cloud to clear over the course of the inspection. No previously unrecorded heritage assets were observed. The only recorded putative asset within the footprint of the Proposed Development, Asset 38, a possible Roman road could not be found within the area of the walkover survey. Previous survey and excavation in the area has also failed to reveal any traces of this asset. The walkover survey report forms Appendix 7.2.

Assessment of Effects

Introduction

Assessment of effects has been assessed in the following stages:

- Description of asset (baseline) (where appropriate, assets may be addressed in related groups);
- Assessment of value, and for indirect effects, how the setting of the asset contributes to its value;
- Assessment of the magnitude of effects cause by the Proposed Development, taking into account the sensitivity of the asset to that form of change, and;
- An assessment of the significance of the effects, which are considered in the following phases: construction and operations.

7.4.9 The assessments have been carried out using professional judgement, taking into account designations and the value of the heritage asset as assessed against standards derived from national policy (see section 7.3.2). Significance of effect has been assessed on the basis of a combination of the value of the heritage asset and magnitude of impacts.

7.4.10 Impacts are considered to be caused by the Proposed Development where it changes the baseline condition of either the asset itself or its setting.

7.4.11 In accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the assessment identifies impacts as either direct or indirect, adverse or beneficial, and short-term, long-term or permanent. Direct impacts are those which physically alter an asset and therefore its value, for the purposes of this assessment indirect impacts are those which affect the value of an asset by causing change within its setting.

7.4.12 Direct impacts on the heritage assets have been identified and the effect and assessed with reference to guidance from HES (see 7.3.2). Assessment has been carried out in the following stages:

- Initial consideration of intervisibility and other factors leading to the identification of potentially affected assets;
- Assessment of the value of potentially affected assets;
- Assessment of the contribution of the setting to the value of those assets;
- Assessment of the magnitude of impact of the Proposed Development due to causing change within the setting of the assets; and
- Prediction of the significance of the effect.

Assessment of Value

7.4.13 Heritage asset value has been assessed using professional judgement, with reference to Table 7.1 which has been devised with reference to HES policy and guidance. The value of a heritage asset is based on its qualities, including intrinsic, contextual and associative characteristics, such as age, state of preservation and level of supporting knowledge. These characteristics are independent of the differing potential impacts on the heritage assets. Table 7.1 shows the potential levels of value of an asset related to current designation criteria, using a

scale of Highest to Negligible value. These values are used in the exercise of professional judgement and provides transparency in evaluating the conclusions reached in this assessment.

Table 7.1: Value categories of heritage assets

Value	Revision Details
Highest	Heritage assets of international value: World Heritage Sites
High	Heritage assets of national value, such as: • Scheduled Monuments; • Category A Listed Buildings; • Gardens and Designed Landscapes included on the national inventory; • Battlefields included on the national inventory; and Non-designated assets of equivalent value.
Medium	Heritage assets of regional value, such as: • Category B Listed Buildings; • Most Conservation Areas; and Non-designated assets of equivalent value.
Low	Heritage assets of regional value, such as: • Category C Listed Buildings; and Non-designated assets of equivalent value.
Negligible	Sites of minor importance or with little of the asset remaining to justify a higher value.
Unknown	Further information needed to assess the value of these assets.

Source: AMS, 2022

7.4.14 The criteria for assigning value include the archaeological period to which the heritage asset belongs; its rarity; the level of documentation concerning the asset; potential to contribute to our understanding of the past, the value of association with other sites; the preservation condition; and the chronological and typological diversity of the asset.

Contribution of Setting to Value

7.4.15 Setting is the 'the way the surroundings of a historic asset or place contribute to how it is understood, appreciated and experienced.' (HES 2016).

7.4.16 The surroundings of each heritage asset or heritage asset groups is described, considering aspects such as location and orientation of the heritage asset, obvious views or vistas, both towards and from an asset, additional screening through small scale topographic variation, buildings and vegetation, how much change to the historic setting has occurred, integrity of the setting, topography, land use (including currently operational roads, railways, other wind farms and other sources of visual movement nearby and modern intrusive conifer plantations) and intervisibility to other contemporaneous and related heritage assets. All of these aspects are considered in relation to how they affect the understanding, appreciation and experience of the heritage asset.

7.4.17 Once the setting of each heritage asset or heritage asset group had been defined, the aspects of the setting which contribute to the value of the heritage asset are identified. A professional judgement is then made as to the magnitude of impact of the Proposed Development on the heritage asset due to change in setting.

Magnitude of Impact

7.4.18 The changes could potentially include direct change (e.g. ground disturbance) and/or indirect change (the latter could include visible change, noise, vibration). Resulting impacts may be beneficial or adverse, and may be short term, long term or permanent. The scale and mass of the Proposed Development would form part of this potential change. Magnitude of impact has been assessed with reference to the criteria set out in Table 7.2.

Table 7.2: Magnitude of impacts on heritage assets

Magnitude/Type	Explanation
High Beneficial	The Proposed Development would considerably enhance the value of the affected asset, or the ability to appreciate it.
Medium Beneficial	The Proposed Development would enhance to a clearly discernible extent the value of the affected asset, or the ability to appreciate it.
Low Beneficial	The Proposed Development would enhance to a minor extent the value of the affected asset, or the ability to appreciate it.
Very Low Beneficial	The Proposed Development would enhance to a very minor extent the value of the affected asset, or the ability to appreciate it.
Neutral/Nil	The Proposed Development would not affect or would have harmful and enhancing effects of equal magnitude on the value of the affected asset or the ability to appreciate it.
Very Low Adverse	The Proposed Development would erode to a very minor extent the value of the affected asset, or the ability to appreciate it.
Low Adverse	The Proposed Development would erode to a minor extent the value of the affected asset, or the ability to appreciate it.
Medium Adverse	The Proposed Development would erode to a clearly discernible extent the value of the affected asset, or the ability to appreciate it.
High Adverse	The Proposed Development would severely erode the value of the affected asset, or the ability to appreciate it.

Source: AMS, 2022

Significance of Effect

7.4.19 The significance of effect is presented in Table 7.3. This provides a matrix that relates the value to the magnitude of impact (incorporating contribution from setting where relevant), in order to establish the likely significance of effect. This assessment is undertaken separately for direct effects and indirect effects, the latter being principally concerned with effects on setting. Effects are assessed to be significant in EIA terms where they are moderate or substantial.

Table 7.3: Significance of effects on heritage assets

Impact Magnitude and Type	Heritage Asset Value				
	Highest	High	Medium	Low	Negligible
High Beneficial	Substantial	Substantial	Moderate	Slight	Very Slight
Medium Beneficial	Substantial	Moderate	Slight	Very Slight	Negligible
Low Beneficial	Moderate	Slight	Very Slight	Very Slight	Negligible
Very Low Beneficial	Slight	Very Slight	Negligible	Negligible	Negligible
Neutral/Nil	Neutral/None	Neutral/None	Neutral/None	Neutral/None	Neutral/None
Very Low Adverse	Slight	Very Slight	Negligible	Negligible	Negligible
Low Adverse	Moderate	Slight	Very Slight	Very Slight	Negligible
Medium Adverse	Substantial	Moderate	Slight	Very Slight	Negligible
High Adverse	Substantial	Substantial	Moderate	Slight	Very Slight

Source: AMS, 2022

Zone of Theoretical Visibility Analysis

7.4.20 Assessment of visual impact has been assisted with the use of a Zone of Theoretical Visibility (ZTV) model, prepared principally for the Landscape and Visual Impact Assessment (Chapter 6) (shown in Figure 7.2). The ZTV modelling methodology is set out in detail in Chapter 6 Landscape and Visual. In summary, it maps the predicted degree of visibility of the Proposed Development from all points within a study area around the site, as would be seen from an observer's eye level 1.6 m above the ground.

7.4.21 The ZTVs were modelled using a computer-based visibility analysis package compiled using Ordnance Survey Digital Terrain Model (DTM) data. The ZTV produced is a 'bare ground' scenario, based on landform only, which takes no account of the screening effects of local features such as buildings or vegetation.

7.5 BASELINE CONDITIONS

Designated Heritage Assets

7.5.1 There are no inventoried Battlefields, Conservation Areas, Listed Buildings Properties in Care, inventoried Gardens and Designed Landscapes or World Heritage Sties within the ISA.

7.5.2 Within the ISA there are two chambered cairns, the King's Cairn and cairn to the West of Water of Deugh, that form a single Scheduled Monument (SM1046) (Figure 7.1).

7.5.3 Within the OSA there are no inventoried Battlefields, or World Heritage Sites. There is one Conservation Area, one inventoried Garden and Designed Landscape (GDL), one Property in Care, two records of Category A Listed Buildings and 18 Scheduled Monuments within the OSA. There are no Category B Listed Buildings in the area up to 5 km from the proposed turbine locations. The designated heritage assets within the OSA are listed in Table 7.4and shown in Figure 7.2.

Table 7.4: Nationally important designated heritage assets within the OSA

Title	Designation	Index Number	Category
Craigengillan	Listed Building	LB18793	A
Craigengillan, Stable Block	Listed Building	LB18794	A
Craigengillan	Garden and Designed Landscape	GDL00111	N/A
Polmaddy, medieval and post-medieval settlement	Scheduled Monument	SM5391	N/A
Woodhead lead mines and smelter, Carsphairn	Scheduled Monument	SM5184	N/A
Dalmellington, motte	Scheduled Monument	SM3009	N/A
Waterside, miners' villages and mineral railways	Scheduled Monument	SM7863	N/A
Donald's Isle, Loch Doon, settlement 750m SSW of Lamdoughty Farm	Scheduled Monument	SM8616	N/A
Cairn Avel, 800m south of Carsphairn	Scheduled Monument	SM1006	N/A
Holm of Daltallochan, stone circle and standing stone	Scheduled Monument	SM1029	N/A
Holm of Daltallochan, cross slab	Scheduled Monument	SM1106	N/A
Stroanfreggan Bridge Cairn	Scheduled Monument	SM1043	N/A
The King's Cairn, chambered cairn and cairn to the west of Water of Deugh	Scheduled Monument	SM1046	N/A
Stroanfreggan Craig, fort	Scheduled Monument	SM1095	N/A
Craigengillan Cairn	Scheduled Monument	SM2238	N/A
Dundeugh Castle	Scheduled Monument	SM2476	N/A
Dalnean Hill, farmstead and field system	Scheduled Monument	SM4390	N/A
Braidenoch Hill, cross slabs	Scheduled Monument	SM1105	N/A
Bogton Loch, airfield, Dalmellington	Scheduled Monument	SM13693	N/A
Loch Doon Castle	Scheduled Monument/Property in Care	SM90203/ PIC202	N/A
Dalmellington	Conservation Area	CA43	N/A

Source: AMS, 2022

Non-Designated Heritage Assets Within the Outer Study Area

7.5.5 Dumfries and Galloway Archaeology Service (DGAS) classifies certain non-designated heritage assets as being nationally or regionally important. Non-designated heritage assets classified as being nationally important have been considered within the whole OSA. Regionally important non-designated heritage assets have been considered within an area 5 km from the proposed turbine locations. Table 7.5 lists those heritage assets deemed to be nationally or regionally important that are not also designated e.g. Scheduled Monuments

Table 7.5: Nationally and regionally important non-designated heritage assets within the OSA

Title	Importance/Value	HER Code
Green Dass Hill	National/High	MDG3406
Barlae Hill - Stroangassel Hill	National/High	MDG3416
Holm Of Daltallochan	National/High	MDG3456
Braidenoch Hill	National/High	MDG3459
Bardennoch Hill	National/High	MDG3460
Cairn Avel	National/High	MDG3466
Holm Of Daltallochan	National/High	MDG3476
Lagwine Cairn	National/High	MDG3478
Holm Of Daltallochan	National/High	MDG3481
Culmark Hill	National/High	MDG3845
Mackilston	National/High	MDG3865
Stellhead	National/High	MDG3920
Smittons	National/High	MDG3934
Round Craigs	National/High	MDG3944
Round Craigs	National/High	MDG3945
Smittons Bridge / Water Of Ken	National/High	MDG3956
St Connel's Chapel and Well	National/High	MDG4367
Castle Hill	National/High	MDG4415
Holmhead Hill	National/High	MDG4423
The Island	National/High	MDG4430
Shiel Burn / Colt Hill/Black Hill	National/High	MDG9425
Deil's Dyke	National/High	MDG11235
Deil's Dyke	National/High	MDG11244
Deil's Dyke	National/High	MDG11245
Deil's Dyke	National/High	MDG11246
Deil's Dyke	National/High	MDG11247
Scalloch / Little Auchrae	National/High	MDG11404
Loch Doon	National/High	MDG13159
Irongallows / Faulds	National/High	MDG13622
Kiln Knowe / Stroanpatrick	National/High	MDG15860
Loch Doon Gunnery School, Polmeadow Burn / Black Craig	National/High	MDG17237
Grieve Hill to Dumfries	National/High	MDG21369
Shillingland Hill	National/High	MDG21412
Woodhead	National/High	MDG21690
Daltallochan	Regional/Medium	MDG3455
Cumnock Knowes	Regional/Medium	MDG3480
Nether Holm Of Dalquhairn	Regional/Medium	MDG3909
Knockgray Policies	Regional/Medium	MDG25538

Known Heritage Assets Within the Inner Study Area

7.5.6 There are 46 heritage assets (including one designated asset) recorded within the local HER and NRHE, within the ISA once duplicate records are accounted for (see Appendix 7.1 Cultural Heritage Gazetteer).

7.5.7 Seven of the recorded heritage assets within the ISA are definitely or tentatively dated to the Prehistoric and/or Romano-British period, though only one of these is within the Proposed Development Area. Three of the assets are cairns (Assets 5, 6, 7, Asset 5 is a Scheduled Monument, SM1046), one is a cup and ring marked rock (Asset 39) and two are findspots, one a flint tool and the other a bronze axe head (Assets 1 and 39 respectively). One of the findspots is one of the two asset records within the Proposed Development Area. A Roman road is thought to run through the Proposed Development Area (Asset 38), though archaeological monitoring work in the area of Asset 38, associated with previous phases of the Windy Standard Wind Farm, have not found any traces of the road.

7.5.8 One heritage asset (Asset 15), may partly date to the medieval period, consisting of an area of rig and furrow, associated with a range of later elements including an enclosure, sheep shelter and farmstead, dating to the post-medieval and modern periods.

7.5.9 Six of the recorded heritage assets are definitely or tentatively dated to the post-medieval period. All the assets dated to this period relate to agricultural activity, in the form of a shieling (Asset 11), head dykes (Assets 28, 31) and field systems (Assets 18, 19, 20), demonstrating a mixture of pastoral and crop growing in the post-medieval economy.

7.5.10 A further 22 assets may be dated to the post-medieval or modern (post-1800) period. None of these assets are within the area of the Proposed Development. All of the assets relate to agricultural activity and settlement in the

form of sheepfolds (Asset 3, 14, 25, 41), field systems (Assets 12, 13, 15, 17, 22, 23, 24, 25, 26, 27, 40), associated structures and buildings (Assets 10, 21, 30), enclosures (Asset 29) and farmsteads (Assets 10, 16, 44).

7.5.11 There are seven assets dating to the modern period within the ISA. In contrast to the assets of the earlier periods these assets relate to transport and industry, in the form a bridge (Asset 42), the infrastructure associated with the Galloway Hydro-electric Scheme dating to the later 1930's (Assets 32, 33, 34, 35, 36) and a former lead mine (Asset 2).

Historic Mapping

7.5.12 A review of the online historic mapping available at the National Library of Scotland was undertaken. Maps dating back to 1650 covering the ISA were considered. The Roy Military Survey of Scotland (1755) is the earliest map that covers the Proposed Development Area in detail. The map includes the settlement at Waterhead, together with some outline boundaries in that area. The rendering of the topography of the hills is approximate. Place names are sparsely recorded and do not closely align with those recorded in historic and modern OS maps. No traces of human structures or activity were mapped within the redline boundary.

The Six Inch First Edition map (1850-1, 1853, Kirkcudbrightshire, Sheet 2., Ayrshire Sheet LIII) includes the putative route of a Roman road, and a number of sheep rees and a livestock pen. The landscape was open, largely consisting of rough grazing, with the upland areas largely unenclosed. The field boundaries at lower altitudes sow many small variations from the current land boundaries. The Six Inch Second Edition (1893, 1895, Kirkcudbrightshire, Sheet IV.NW and Sheet III.SE) is largely as the First edition, though there is a greater level of enclosure of land, with some new field boundaries in the areas of Blackgrane and Chapman's Cleugh, and from Dugland to Trostan Hill. There are no appreciable differences within the Proposed Development Area between the Second and Third Editions (1907, 1909, Ayrshire Sheet LIV.NW and Kirkcudbrightshire Sheet III.SE) of the - Six Inch maps. The 1956 1:25 000 scale maps of the area (NS60-A, NS50-A, NX59)) shows a new land division along Gallow Rig. The area is still unforested. This map has the first mapped observation of the possible antiquities at Brannit Mote and Waterhead Mote.

Historic Land use Assessment

7.5.13 The Historic Land-use Assessment mapping of the ISA has been reviewed. All the mapped land-use areas relate to current or very recent land use, with the ISA being divided between rough grazing, plantation forestry and power generation, the latter reflecting parts of the current Windy Standard wind farms.

Other Sources

7.5.14 Other sources consulted comprise the Old Statistical Account and New Statistical Account. The relevant parish in the Statistical Accounts is Carsphairn. The parish entry for the Old Statistical Account (Volume VII, Kircudbrightshire) was compiled in 1793 by the Reverend Samuel Smith. The parish name was variously spelt as Carsefairn or Carsefern at this date. The account gives little information of direct relevance to the development: the number of inhabitants in the parish was relatively low, at approximately 600. The majority of the population was engaged in agricultural occupations, with the main activity being raising sheep, with a small amount of cattle. Arable land was limited in extent and little cultivated. The entry records a tradition that approximately 150 years before woodland abounded within the parish, in contrast with the almost treeless state of the parish at the time the Old Statistical Account was compiled.

7.5.15 The New Statistical Account entry for Carsphairn was compiled in 1839, and revised in 1844, by the Reverend David Welsh. The entry notes the continued dominance of sheep farming in the economy of the area, though the beginnings of exploratory lead mining is noted, though this entry predates the leadmines noted in the ISA (Asset 2). The continued lack of trees in the parish was also noted, as was the use of peat as the main domestic fuel locally.

Potential for Unrecorded Assets

7.5.16 The potential for unknown heritage assets (archaeological remains) to occur within the area of the Proposed Development has been assessed. The assessment is based on the range of sources employed for the baseline. In addition, the peat depth data for the site compiled for the hydrogeology assessment (EIAR Chapter 10: Hydrology, Geology and Hydrogeology) has also been used to assess the potential for archaeological remains to be masked by peat. The potential for deposits with palaeoenvironmental value to be present in the ISA has also been assessed.

7.5.17 The distribution of cultural heritage assets within the ISA tends to be of a higher density and a greater diversity of ages and types on the lower altitude areas. The number of assets in the immediate vicinity of the turbines and the associated infrastructure tends to be lower, and the few assets that are present seem to be mainly of post-medieval or modern date.

7.5.18 The depth of peat over the footprint of the Proposed Development is shallow to moderate, generally varying from less than 0.3 m over most of the development footprint to 0.5 -1.0 m in depth in limited areas (see Figure 10.4). Given the observed distribution of assets, and the uncovering of some of those during mitigation for previous wind farm construction work (Asset 4), there would appear to be a moderate probability of unrecorded post-medieval heritage assets being located in the footprint of the Proposed Development. The potential of heritage assets of other periods being also being present is considered to be low (Roman, modern) or low to moderate (prehistoric, medieval). The peat is blanket peat, which has very limited value for palaeoenvironmental investigation.

7.6 IMPACT ASSESSMENT

Introduction

7.6.1 The potential types of impacts that could result from the Proposed Development can be divided into direct impacts and indirect impacts. The direct impacts would mainly be associated with the construction activities. The indirect impacts, particularly permanent impacts, would mainly be associated with the operation of the proposed wind farm.

Direct Impact Assessment

7.6.2 Direct impact types would mainly consist of partial or total removal of heritage assets, recorded or unrecorded, through groundworks (permanent or temporary), disturbance and/or compaction of archaeological deposits by construction traffic and structures. The direct, physical, impacts would in general be permanent and irreversible. The potential for direct impacts due to construction impacts is relatively low for the Proposed Development in comparison to similar developments in locations where there have not previously been wind farm infrastructure. This is due to the re-use/reconditioning of a considerable amount of existing ground level infrastructure, reducing the need to disturb previously undisturbed ground. This positive aspect is particularly useful with regard to potential unrecorded assets.

7.6.3 A single recorded heritage asset has the potential to be impacted by the Proposed Development. The possible Roman road (Asset 38) potentially intersects with the location of Turbine 5, its associated crane and auxiliary crane hardstandings, laydown area and any required widening of the access track. It should be noted that previous archaeological watching briefs on other parts of the extent of this heritage asset have not found any traces of it, and the actual extent of the asset is unclear. It is unlikely that all of the above elements would affect the heritage asset. The impact would entail the partial removal of a limited portion of the asset, amounting to less than 5 % of the mapped extent. The asset has been assessed to be of medium value. The magnitude of impact has been assessed to be low. The resulting effect would be of **Very Slight** significance.

Indirect Impact Assessment: Inner Study Area

Introduction

7.6.4 Within the ISA, 21 of the 46 heritage assets are not intervisible with any of the proposed wind turbines. The assets that are not intervisible with the proposed wind turbines are 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 32, 34, 35, 36, and 37. These assets have not been further assessed for potential setting impacts. One asset is a findspot (Asset 1), and therefore has not been further assessed. Assets 2, 7, 10, 11, 26, and 31 are no longer extant, and have therefore not been further assessed.

Designated Heritage Assets

7.6.5 The King's Cairn, chambered cairn and cairn to the west of Water of Deugh are two burial cairns that form a single scheduled monument (Asset 5, SM1046). The larger of the cairns is the King's Cairn. It is a round chambered cairn, 19 m across at its greatest extent and approximately 1 m high. It has been partially robbed of stone. Excavations in the early Twentieth Century revealed two chambers. The cairn is classified as belonging to the Bargrennan type. This cairn appears be aligned in parallel to the river below, a known feature of the class of cairns. The smaller cairn is approximately 10 m across and 0.7 m high. It has also been subject to considerable robbing. Traces of possible chambers are observable in the remains of the cairn. The cairns' value is largely based on being examples of their kind with the potential to yield further archaeological information. They have some limited contextual value as early elements in a multi-period landscape.

7.6.6 The scheduled monument lies within an area of forestry. The trees in the immediate vicinity of the cairn to the west of Water of Deugh have been felled in recent years, with another nearby block to the east of the cairn replanted and which will increasingly screen views to the east and northeast from the cairn. King's Cairn is currently still surrounded by dense conifer plantation, though this will undergo felling and potential replanting, changing the degree to which King's Cairn is visually connected to the Water of Deugh and views to the east.

7.6.7 King's Cairn is not accessible due to on-going construction works. The setting assessment for both elements of the scheduled monument are therefore based on the findings of a site visit to the cairn west of Water of Deugh, as well as a wireframe visualisation. It is unclear whether the two cairns would have historically been intervisible. The cairn west of Water of Deugh is located on the lower slopes of Brownhill Rig in the valley of the Water of Deugh. The location is not a prominent one in the landscape and the cairn in its current condition cannot readily be discerned across the valley. There are long distance views towards the succession of hills to the southwest, starting with Lamford Hill. In the views directly across the Water of Deugh valley the main landscape element are the conifer plantations, in various stages of growth. Combined with the form of the slope these create a sense of mass which dominates views. Views to the northeast to northwest are currently screened by forestry. The current wind turbines (Brockloch Rig and Windy Standard II) form a small section of the overall views around the asset (forming approximately 8 % of the full view) (Plate 7.1).

7.6.8 The combination of the variety of modern elements in the landscape, particularly the intensive conifer forestry, but also including the nearby gravel forestry track and views towards the existing turbines, together with a location lacking prominence in the landscape means that the setting makes a low contribution to the value of the cairns. During periods of visibility between the King's Cairn and the Water of Deugh, that is when the surrounding forestry has been felled and prior to re-stocking, the contribution of the setting to the King's Cairn is medium, reflecting the alignment of the cairn to the river. The proposed turbines would make a small change in the current visual environment of the cairns, with all of the proposed turbines located within the horizontal extent of the existing turbines, avoiding introducing a new modern element into the landscape (Figure 7.3 Viewpoint 1). The proposed turbines would in some cases appear a little larger than the nearest currently visible turbines (Windy Standard II) but even these would appear to be of a similar scale. The total number of turbines visible would be slightly reduced, with a consequent reduction in the amount of movement, though the turbines that would be removed (Brockloch Rig) are of smaller scale and are currently less prominent in views from the cairn. The changes in setting would have no impact on the intrinsic aspects of the value of the cairns. The combined effects would result in a range of effects over the lifetime of the Proposed Development, reflecting the dynamic nature of the forestry environment, from having no effect due to screening severing the cairns from the landscape, to an adverse effect of very low magnitude, resulting in an effect of **negligible** significance for the cairns when more open views are established.

Plate 7.1 View northeast from cairn west of Water of Deugh (SM1046)

Non-Designated Heritage Assets

7.6.9 Eight non-designated heritage assets within the ISA are also within the ZTV for the Proposed Development. Of these assets, based on the nature of the types of assets they are combined with records suggesting a poor state of preservation, Assets 3, 24 and 30 have been assessed as being of negligible value. For similar reasons, three other assets have been assessed as being of low value (Asset 4, 12, 25). Under the assessment methodology used, the significance of effect of impacts on such assets cannot be more than slight, which is not significant in EIA terms. Impacts on these assets due to setting change are therefore not further assessed.

7.6.10 Asset 7 is a cairn, included by DGAS as a regionally important non-designated asset within the HER. The Canmore record notes that the cairn was first described in 1911 as surviving in a truncated and scattered form, with no trace of the cairn being discernible in 1978. The setting of the cairn is similar to that of the King's Cairn, chambered cairn and cairn to the west of Water of Deugh (Asset 5, SM1046). The absence of visible remains, however, diminishes the connection between the asset and its setting, reducing the contribution of the setting to a negligible level. he proposed turbines would make a small change in the current visual environment of the cairns, with all of the proposed turbines located within the horizontal extent of the existing turbines (Brockloch Rig and Windy Standard II), avoiding introducing a new modern element into the landscape. The six proposed turbines that would be visible would in some cases appear little larger than the currently visible turbines are but even these would appear to be of a similar scale. The total number of turbines visible would be slightly reduced, with a consequent reduction in the amount of movement, though the turbines that would be removed (Windy Standard I) are of considerably smaller scale and are currently less prominent in views from the cairn. The changes in setting would have no

impact on the intrinsic aspects of the value of the cairn. The combined effects would result in a range of effects over the lifetime of the Proposed Development, reflecting the dynamic nature of the forestry environment, from having no effect due to screening severing the cairns from the landscape, to an adverse effect of very low magnitude, resulting in an effect of **negligible** significance for the cairns when more open views are established.

7.6.11 Asset 39 is a cup and ring marked stone, and has been assessed to be of medium value. These features are often found in prominent locations on hilltops, in other cases they appear to be isolated or appear to be related to contemporaneous tracks. In this particular case the cup and ring marked stone appears to be isolated. The location is not prominent, though in the absence of forestry there may be views across the valley of the Water of Deugh. The current forestry cuts the asset off from longer distance views, and even after felling the immediate surroundings will be dominated by felling remains and more distant blocks of forestry. The setting of the asset makes a low contribution to the value of the asset. The Proposed Development would change the arrangement of the some of the more distant turbines visible from the asset during periods when the forestry have been felled, by removing a number of the current turbines and introducing up to four that would be visible to hub height, but the overall magnitude of impact would be neutral, resulting in a **neutral** significance of effect.

7.6.12 Asset 38 is the putative location of Roman road. The route indicated in the HER runs along the ride of Polwhat Rig before curving to the east around Trostan Hill. The current setting is dominated by the turbines of the existing wind farm as well as the main access track, with the turbines of the surrounding Brockloch Rig and Windy Standard II wind farms and other nearby wind farms also forming noticeable elements in the current setting. As the asset cannot be readily identified on the ground, the longer distance views of the surrounding landscape make little contribution to the understanding of the asset. The current contribution of the setting to the value of the asset is therefore assessed to be low. The reduction in the number of turbines is the main change that would result from the Proposed Development, causing in a slight reduction in the distracting effect of turbine movement. The magnitude of the effect would be a very slight beneficial one, resulting in an effect of **negligible** significance.

Indirect Impact Assessment: Outer Study Area

Selection of Heritage Assets for Assessment

7.6.13 In order to identify potential significant setting effects, the assets of national value within 15 km, and the assets of regional value within 5 km of the proposed turbine locations have been assessed. The initial stage of assessment has been to determine which heritage assets have a realistic prospect of receiving any setting impacts. Using a ZTV model, assets that are not within the ZTV and are unlikely to have important views across them from viewpoints within the ZTV have been removed from consideration. Of the Listed Buildings within the OSA, there are no Category A listed buildings within the ZTV, and no Category B listed buildings within 5 km of a proposed turbine location (Figure 7.2). Of the 18 Scheduled Monuments within the OSA, 17 of them are out of the ZTV. The single Conservation Area (Dalmellington) is not within the ZTV. The Craigengillan GDL (GDL00111) lies largely outside of the ZTV. The wireframe visualisation generated for that small area of the GDL that does have intervisibility with the Proposed Development (Ref: LVIA Chapter 6, Figure 6.11a), demonstrates that the proposed turbines would have so little visual presence that there would be no realistic prospect of an impact on the GDL considered as a cultural heritage asset. These assets have therefore not been further considered for assessment. Of the non-designated heritage assets, 24 of the 29 nationally important non-designated assets and of the four regionally important non-designated assets, three are not within the ZTV, and are not assessed further. The flint tool scatter recovered from the Smittons Bridge (MDG3956) appears to be from a transported or disturbed assemblage, probably not in the original depositional location and therefore is not assessed further for setting change effects.

Stroanfreggan Craig Fort (SM1095)

7.6.14 This fort occupies a local summit at the lower south-western end of Stroanfreggan Craig, which is a rocky ridge that falls away sharply along its south-eastern flank. The defences comprise two stone ramparts set between 5 m and 10 m apart, both of which are heavily robbed. The inner encloses a D-shaped area on the summit measuring approximately 50 m by 38 m. A modern cairn occupies the highest point within the inner enclosure. The ends of the outer rampart apparently rest on the edge of the crag. Elements of the defences have been incorporated into the lines of more recent drystone dykes. The fort is generally thought to date to the Iron Age, though there have been suggestions that it dates later, to the early medieval period.

7.6.15 The setting of the fort has two main elements. The first element is probably the most important. This is the views from the fort across the Water of Ken and the accompanying extensive flood plain of the river to the west and south-west. The fort has commanding views over this area, which potentially includes crossing points, suggesting a likely reason for the position of the fort. Views over the nearby landscape to the south-east, east, and north are not as extensive and complete, but are still considerable, re-iterating the strategic value of this location. The second main element are views to more distant hills, which form a backdrop to the area, with the closest range to the west. The location of the fort itself is not that prominent even viewed from the relatively nearby road, as its form tends to merge somewhat with the natural landform of the Craig. The first element of the setting makes a medium contribution to the value of the asset. The second element, that is the longer distance views, makes a low contribution to the value of the asset. The Proposed Development would be barely discernible in good visibility conditions: in the weather and lighting conditions the currently operational turbines of Windy Standard II, which area of a similar visual scale, could not be seen (Figure 7.3 Plate 7.2). The magnitude of impact is assessed to be nil, with **no** significance of effect.

Plate 7.2 View northeast from Stroanfreggan Fort (SM1095)

Culmark Hill Cairn (MDG3845)

7.6.16 This asset, assessed by DGAS as being nationally important consists of the heavily robbed remains of a cairn. The local setting is dominated by the nearest hills that ring the location of the asset, that include the peak of

Culmark Hill itself, Marsalloch Hill, Dundeugh Hill and Mackilston Hill. Further views are limited by these hills. Views toward the cairn from the lower valley are generally screened by local topography. The setting makes a low contribution to the value of the asset. The limited number (three) of the proposed turbines that are predicted to be visible from the asset would not be clearly discernible at the distance between them and the asset (10 km). The movement of the proposed turbines would not be a detectable change on the limited amount of movement due to the current turbines. The magnitude of impact would therefore be neutral, leading to an effect of **no** significance.

Smittons findspot and enclosure (MDG3934)

7.6.17 This asset, assessed by DGAS as being nationally important consists of a scatter of lithic tools of Mesolithic date, together with other possible occupation residues, and an enclosure thought to be of later date, probably 18th century. The high value element of the site is the traces of Mesolithic activity. The key element of the setting of this is probably the proximity of the river, though the precise course is likely to have changed since the Mesolithic period. Longer distance views are dominated by the nearer ranges of hills and Stroanfreggan Craig, with modern conifer forestry also forming a dominant element in the landscape. The immediate floodplain element of the landscape makes a low contribution to the value of the asset, with longer distant views making a low to negligible contribution. The proposed turbines are modelled to have limited visibility (two turbines at hub height), and will be further screened by woodland and the Smittons Bridge. The presence of the turbines will have no discernible effect on the immediate flood plain setting of the asset and an adverse impact of very low magnitude leading to an effect of **negligible** significance.

Scalloch farmstead and field system (MDG11404)

7.6.18 This asset, assessed by DGAS as being nationally important consists of the location of a farmstead, noted as ruined in the 1st Edition OS 6-Inch map. An associated enclosure and field system are mapped in the area. The setting of these types of assets consists largely of the near landscape that would have formed part of the working area of the farmstead and other farmsteads. While the asset itself is situated in open ground, modern conifer forestry surrounds the site on three side sides, coming within 120 m at the closest. This alters the sense of the relatively open landscape of the further views and cuts the site off from views toward the location of other farmsteads. The current setting makes a very low contribution to the value of the site. The ZTV indicates that three of the proposed turbines would be visible at hub height. At a distance of approximately 12 km the new turbines would form a minor change in the current view in the direction of the proposed turbines, which includes the other turbines at Windy Standard. The magnitude of effect is assessed to be neutral, resulting in an effect of **no** significance.

Shiel Burn - Colt Hill- Black Hill Road (MDG9425)

7.6.19 The intermittently visible route of a road appears to take a circuitous route through the landscape in this area, frequently following contours. The road has not been dated, though it is generally thought to be earlier than the Medieval period. The eastern portions of the route probably run under modern forestry. The dominant element of the setting is the immediate landscape through which the route passes, particularly the slopes above the road. The immediate landscape makes a low contribution to the value of the asset. The predicted intervisibility of the turbines with the asset varies considerably over the traceable length of the route, varying from no intervisibility to seven turbines. The trend of the route is from ENE to WSW, so that travel westerly along the route would not be directly towards the proposed turbines, but with them forming a peripheral element to a viewer's right. The current turbines of the combined Windy Standard developments currently form a noticeable but not dominant element in the landscape viewed from the road. The proposed turbines would make a minor change to the current view in this direction. While the current arrays of turbines form a minor distracting element in the setting of the asset, they do not greatly impinge on the setting of the immediate landscape and the dominance of the slopes above the road. The alteration in the visible configuration of turbines would be barely discernible from the asset. The change in the setting due to the new turbines would be an impact of very low to neutral magnitude, resulting in an effect of **negligible to no** significance.

Cumulative Impact Assessment

7.6.20 Cumulative effects have been assessed for assets that have been identified as receiving an impact from the Proposed Development. Two criteria have been used to select assets and potential cumulative developments. The first is that the other wind farm developments must be within 10 km of the affected heritage asset and intervisible with it. The second is that such a development is either under construction, has been given planning consent, or has an active planning application or is undergoing a planning appeal. The developments that meet these criteria and therefore have been included for the purposes of cumulative assessment are: South Kyle (under construction), Pencloe Forest Resubmission, Windy Standard III (consented), Benbrack Variation, Enoch Hill Variation (consented), and Sanquhar II (application), with respect to the King's Cairn and Cairn West of Water of Deugh Scheduled Monument. The addition of the under construction and consented developments to the existing turbines will considerably widen the horizontal extent of views from these assets that will be occupied by wind turbines (Figures 7.2 and 7.3). In particular the scale and proximity of the developments at South Kyle and Benbrack Variation will form dominant elements in the landscape and almost surround the Scheduled Monument. By contrast the Proposed Development falls within the current range of turbines and is of more similar apparent visual scale. The dominating presence and coverage of the horizon of the other developments, particularly that of South Kyle and Benbrack Variation are such that the incremental cumulative effects of the Proposed Development are of a very slight adverse impact, resulting in an effect of **negligible** significance.

Mitigation

7.6.21 Mitigation in relation to direct impact on most heritage assets has been embedded into the design of the proposed infrastructure, in order to avoid direct impacts where possible. Appropriate mitigation would consist of a watching brief on the elements of the ground works (turbine base, hard standing, crane base, auxiliary crane bases and laydown area) associated with the construction of turbine five, as this area intersects with the mapped extent of Asset 38. The precise scope of the watching brief would be negotiated with DGC Archaeology Service and the agreed mitigation programme would be documented in a Written Scheme of Investigation.

7.6.22 No mitigation is proposed with respect to the potential impacts due to setting change.

Residual Effects

7.6.23 The completion of the archaeological mitigation outlined above would minimise the loss of the archaeological resource that could occur as a result of the construction of the Proposed Development. No significant residual effects in EIA terms are anticipated in relation to direct physical from the construction of the Proposed Development.

7.6.24 No mitigation has been proposed in respect of the impacts from setting change and the effects would be the same as those stated in the assessment of indirect impacts. There would be no significant effects in EIA terms.

7.7 SUMMARY OF PREDICTED EFFECTS

7.7.1 Table 7.6 summarises the predicted effects of the Proposed Development on the assessed heritage assets.

Table 7.6: Summary of predicted effects

Predicted Effect	Significance	Proposed Mitigation	Residual Effects	Cumulative Effects
Direct effect on known heritage assets within the Proposed Development (Asset 38)	Very Slight	Watching brief and	Nil	-
Setting effect on non-designated heritage assets within the ISA	Neutral to Negligible	None	Neutral to Negligible	-
Setting effect on King's Cairn and Cairn West of Water of Deugh (Asset 5, SM1046)	Negligible	None	Negligible	Negligible
Setting Effect on Stroanfreggan Fort (SM1095)	None	None	None	-
Setting Effect on Culmark Hill Cairn (MDG3845)	None	None	None	-
Setting Effect on Smittons Findspot and Enclosure (MDG3934)	Negligible	None	Negligible	-
Setting Effect on Scalloch Farmstead and Field System (MDG11404)	None	None	None	-
Shiel Burn - Colt Hill- Black Hill Road (MDG9425)	Negligible to None	None	Negligible to None	-

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7.8 STATEMENT OF SIGNIFICANCE

7.8.1 This assessment has considered data from a diverse range of sources in order to determine the presence of cultural heritage assets which may be affected by the Proposed Development. The potential effects on the identified assets, mitigation measures for protecting known heritage assets during construction and recording of assets, both known and currently unknown, which could be lost, and the residual effect of the Proposed Development has all been considered.

7.8.2 In summary, the landscape of the Proposed Development and the immediately surrounding area contains many post-medieval and modern agricultural heritage assets, a smaller number of prehistoric assets, and a very limited number of Roman and medieval assets set variously in conifer forestry, moorland and rough pasture. The potential of unknown assets dating form these periods is considered to vary between low (Roman, modern), low to moderate (prehistoric, medieval) and moderate (post-medieval). For the reasons set out above, there have been found to be no likely significant effects on these heritage assets.

7.8.3 There are no likely significant effects on the setting of heritage assets arising from the construction or operation of the Proposed Development. The development therefore does not significantly adversely affect the fabric or setting of any Listed Buildings, the integrity of the setting of any Scheduled Monuments or the setting of any GDLs on the Inventory of Gardens and Designed Landscapes.