10. Cultural Heritage

10.1 Summary

10.1.1 This chapter presents the findings of the cultural heritage assessment for the proposed Limekiln Wind Farm. A desk-based assessment and walkover survey were undertaken to establish the cultural heritage resource that may be affected by the proposed wind farm. The potential effect on this resource was then assessed.

10.1.2 The construction phase of this wind farm has the potential to directly affect two previously recorded archaeological assets and may effect previously unrecorded cultural heritage assets within the area. Without mitigation these effects will be of no more than a slight to moderate level of adverse effect. Appropriate mitigation will reduce this effect.

10.1.3 Effects on three cultural heritage assets have been identified for the operational phase of this wind farm. There will be no greater than a slight level of adverse effect on the setting of these assets.

10.2 Introduction and overview

10.2.1 This chapter assesses the predicted effects of the proposed Limekiln Wind Farm (the 'proposed development') on cultural heritage assets. The extent and methodology of the assessments required to support the proposed development were agreed through formal Scoping in February 2016 (**Appendix 1.C)**.

10.2.2 Cultural heritage assets have been defined as all relict man-made assets pre-dating First Edition Ordnance Survey mapping (surveyed 1872 in this area) and selected assets post 1872, such as wartime or industrial sites. This includes all Scheduled Monuments, Listed Buildings, Inventory Historic Gardens and Designed Landscapes and Inventory Battlefields. Cultural heritage, as it is interpreted here, thus includes all types of historic buildings and archaeological sites.

10.2.3 Potential impacts of the proposed development upon cultural heritage assets could comprise:

- Physical damage to the fabric of cultural heritage assets, generally resulting from groundworks associated with the construction of the proposed wind farm; and
- Adverse impacts upon the setting of cultural heritage assets, largely this relates to visual impacts.

10.2.4 Cultural heritage assets considered are listed in a Gazetteer and Concordance (**Appendix 10.A**) and in the interest of clarity are referred to by Asset (A) numbers issued in the course of this assessment.

10.3 Background

10.3.1 A comprehensive assessment of the cultural Heritage implications of a wind farm development at the proposed site was conducted to inform the original Limekiln Wind Farm ES in 2012 ('original proposal'). The methodology of the assessment for the original proposal was agreed through a formal scoping process (October 2011), along with further consultation with Historic Scotland (now known as Historic Environment Scotland). The proposal was the subject of a Public Local Inquiry (PLI) which included scrutiny of the 2012 ES. As a result of the PLI, the assigned Reporters concluded that

'other than the potential impacts on wild land, we conclude that the proposal would not give rise to any detrimental impacts, either singly or cumulatively, sufficiently to outweigh the benefits of the proposal.'

10.3.2 Based on this, and taking into account that the current proposed development is in all ways identical in scale, physical dimension, location and generation capacity as the original proposal, scoping for the proposed development (January 2016), determined that the cultural heritage assessment undertaken to determine the potential effects of the original proposal would provide the consenting authority with sufficient information to understand and assess whether the proposed development is likely to have significant effects on the cultural interests associated with the site under the EIA regulations (2000).

10.3.3 As such, the baseline information and the supporting assessments for cultural heritage are essentially a resubmission of the information submitted for the original proposal.

10.4 Methodology

Legislation and policy context

10.4.1 The planning statement that accompanies this application provides a detailed assessment of the planning legislation, policy and guidance relevant to the proposed development. This assessment has been undertaken with reference to relevant legislation, national and local planning policy, along with any applicable guidance.

Assessment Methodology and Significance Criteria

10.4.2 This cultural heritage assessment comprises a baseline survey, undertaken through documentary research and field survey. This is followed by an assessment of the potential direct and indirect effects of the construction, operational and decommissioning phases of the proposed wind farm. Mitigation is proposed and the significance of the residual effects assessed.

Study Areas

10.4.3 The study took in three concentric areas:

- The Inner Study Area; this is based on the application area (Figure 10.1). Within this study area all cultural heritage assets are considered in relation to both direct and indirect impacts. Also considered is the potential for previously unrecorded assets to be affected by the development;
- The Middle Study Area. This extends 5km from the boundary of the application area (Figure 10.2). Within this area all nationally important assets (Scheduled Monuments, Listed Buildings, Inventory Historic Gardens and Designed Landscapes and Inventory Battlefields) were considered in relation to potential operational impacts upon setting and to inform the potential for previously unrecorded cultural heritage assets within the Inner Study Area; and
- The Outer Study Area. This is based on the Zone of Theoretical Visibility (ZTV), as defined in the Landscape and Visual chapter (Chapter 9), within which cultural heritage assets highlighted specifically by consultees or identified as being at risk of significant effects upon setting were considered.

Data Sources

10.4.4 The desk-based study has been based on readily available and relevant documentary sources. The following archives were referred to:

- National Monuments Record of Scotland (NMRS);
- Vertical aerial photographs held by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS);
- THC's Historic Environment Record (HER);
- Databases of designated cultural heritage assets (scheduled monuments, listed buildings, battlefields, inventory historic gardens and designed landscapes and conservation areas) maintained by Historic Environment Scotland;
- Maps held by the National Library of Scotland; and
- Other readily accessible published sources.

Field survey methodology

10.4.5 A targeted walkover survey of the Inner Study Area was carried out on 17-19th January 2012 guided by modern mapping and a handheld gps system. Due to the density of plantation forestry within the study area the walkover was targeted on known cultural heritage assets and areas that are clear of forestry. It was considered that a walkover through plantation forestry would not be informative at this stage due to the highly restricted visibility within the woods. The intention of this walkover was to assess the presence/absence, character, extent and condition of known assets and to identify any previously unrecorded assets.

10.4.6 The area surrounding the Inner Study Area was driven around and visits made to cultural heritage assets in order to establish the potential for impacts upon their setting and to gather data to allow impacts to be assessed.

Consultation

10.4.7 Consultation with Historic Environment Scotland (previously known as 'Historic Scotland') has been undertaken with respect to the proposed development at the Limekiln site. A summary of consultation responses to the original proposal are provided below:

- Historic Environment Scotland in their pre-application advice response dated the 15th November 2010 stated that their concern "*is the potential impact of the proposal on the scheduled monument known as Clach Clais an Tuire, standing stone 1000m SE of Loanscorribest (Index no. 441).*" They requested that "*any photomontages or wireframes produced comprise the view towards the proposed wind farm from a point c.50m to the north-east of this monument.*" Finally they stated that "*at this stage, our view on the principle of this proposal is that development could be achieved at this location if the turbines of the proposed wind farm are not located in close proximity to the monument.*"
- Historic Environment Scotland's scoping response dated the 31st October 2011 stated "*The closest heritage asset is the scheduled Clach Clais an TUire*

standing stone 1000m SE of Loanscorribest (index no. 441). The wind farm should be designed to avoid significant impacts on setting."

- In response to formal consolation by the Energy Consents Division in relation to the submitted Environmental Statement (ES) for the original proposal, Historic Environment Scotland stated in their letter addressed to the Energy Consents Division (1st March 2013), that *'Historic [Environment] Scotland does not wish to object to the above proposed development.'* In comments annexed to the response, it is further stated that '*We* [Historic Environment Scotland] *have assessed the ES and have concluded that there is enough information within it to form a view on the development.'*

10.4.8 Historic Environment Scotland Scoping response in relation to the current proposed development, provided in January 2016, stated that as the development was identical in all ways to the original proposal they have '…no additional comments to make to those expressed in our previous responses'.

10.4.9 As such, the cultural heritage assessment is essentially a resubmission of the cultural heritage assessment provided for the original development.

Assessment Criteria

Assessment Criteria for Construction Impacts

10.4.10 Construction work has the potential to damage or destroy cultural heritage assets. This may occur either as a result of the design of the development or as an accidental consequence of construction plant movement. The impacts may be direct, for instance where an archaeological deposit is removed or damaged during ground-breaking works, or indirect, for example where changes in hydrology may lead to waterlogged archaeological deposits becoming desiccated and degraded. Setting impacts pertaining to the construction phase are short-lived and are therefore not considered to be significant and have not been considered further within this chapter.

10.4.11 The sensitivity of a cultural heritage asset to construction impacts reflects the level of importance assigned to it. This is the product of a number of factors, including its potential as a resource of archaeological data, its association with significant historical events, its role as a local landmark with cultural associations and its aesthetic value.

10.4.12 Official designations applied respectively to archaeological assets and buildings have been taken as indicators of importance as they reflect these factors. Scheduled Monuments and Category A Listed Buildings are of national significance; non designated sites considered to be of schedulable quality, are also recognised here as assets of national importance. Category B and C(S) Listed Buildings are classified, respectively, as being of regional and local importance (Historic [Environment] Scotland, 2011). It is also recognised that groups of local or regionally significant sites can have a collective group value. Sensitivity is assigned to undesignated cultural heritage assets according to the professional judgement of the assessor.

10.4.13 In determining the magnitude of effect, the value or special interest of the asset affected is first defined. This allows the identification of key assets and provides the baseline against which the magnitude of change can be assessed, the magnitude of effect being proportional to the degree of change in the asset's baseline value or special interest.

10.4.14 The criteria used for defining a cultural heritage asset's sensitivity to direct and indirect physical impacts and then assessing the magnitude of those impacts are summarised in Tables 10.1 and 10.2 below.

Table 10.1 Criteria for Assessing the Sensitivity of Cultural Heritage Assets to Construction Impacts

Sensitivity of Receptor	Definition
High	Scheduled Monuments, Category A Listed Buildings and undesignated archaeological assets of national importance
Medium	Category B Listed Buildings and undesignated archaeological assets of regional importance
Low	Category C(S) Listed Buildings and undesignated archaeological assets of local importance
Negligible	A badly preserved or extremely common type of archaeological asset or building of little value at local, regional or national levels

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

Magnitude of impact	Definition
Large beneficial	The asset is preserved in situ, where it would be lost if the development did not take place, preserving or enhancing the asset's value.
Medium beneficial	The asset is preserved by record, where it would be lost if the development did not take place
Small beneficial	The asset is preserved by record where it would otherwise continue to naturally degrade if the development did not take place
Negligible / None	Very slight or negligible alteration of the cultural heritage asset
Small adverse	Slight physical alteration of the cultural heritage asset not affecting key elements, slightly reducing the asset's value
Medium adverse	Loss of one or more key elements of the cultural heritage asset substantially reducing the asset's value
Large adverse	Total loss or major alteration of the cultural heritage asset removing the asset's value.

Assessment Criteria for Operational Impacts

10.4.15 During the operation phase of developments, the setting of cultural heritage assets may be affected. Historic Environment Scotland has produced a guidance note on setting as part of its 'Managing Change in the Historic Environment' series of documents. This defines setting in the following terms:

> "Setting should be thought of as *the* way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated." *(Historic [Environment] Scotland, 2010, Para 2.1)*

10.4.16 Hence setting is not simply the visual envelope of the asset in question. Rather, it is those parts of the asset's surroundings that are relevant to the cultural significance of the asset. In general, there will be an appreciable historical relationship between the asset and its setting, either in terms of a physical relationship, such as between a castle and the natural rise that it occupies, or a more distant visual relationship, such as a designed vista or the view from, for example, one Roman signal station to another. Some assets' cultural significance will relate to an aesthetic relationship with their surroundings which may result from design or be fortuitous. In such instances the relevant landscape elements will be considered to form part of the asset's setting. The cultural significance of assets has been considered in terms of the values described in Scottish Historic Environment Policy(Historic [Environment] Scotland , 2011, Para 5):

- *Intrinsic* - those inherent in the monument;
- *Contextual* – those relating to the monument's place in the landscape or in the body of existing knowledge; and
- *Associative* – more subjective assessments of the associations of the monument, including with current or past aesthetic preferences.

10.4.17 Most setting impacts will relate to contextual and associative values.

10.4.18 The sensitivity of a cultural heritage asset to changes in its setting can be evaluated in the first instance by reference to any relevant designation, whereby assets designated as nationally important will generally be considered the most sensitive. Consequently, the assessment has focussed on nationally important cultural heritage assets in the study areas which are considered in relation to impacts upon setting, with other assets being considered where, in the assessor's professional opinion, there is potential for significant impacts or where they have been raised by consultees. Following reference to the designation of the asset, sensitivity can be more finely assessed by reference to the importance of the asset's surroundings, to its character and value as a cultural heritage asset and the appreciation of its value. Also taken into account is the extent to which an asset is visible on the ground. Some assets may have a well-defined and appreciable setting but the asset itself is barely perceptible; such assets will generally be less sensitive than those that are readily appreciable.

10.4.19 Table 10.3 is a general guide to the attributes of cultural heritage assets of high, medium, low or negligible sensitivity to setting impacts. It should be noted that not all the qualities listed need be present in every case and professional judgement is used in balancing the different criteria.

Table 10.3 Criteria for Assessment of Sensitivity of a Cultural Heritage Asset to Impacts on its Setting

Sensitivity	**Guideline Criteria**
High	Setting makes a considerable contribution to the significance of the asset. The asset has a clearly defined setting that is readily appreciable on the ground and is vital to its significance or the appreciation thereof. The asset will generally be readily appreciable on the ground.

Medium	Setting makes some contribution to the significance of the asset. The asset's significance and the appreciation thereof relate to some extent to its setting. The asset will generally be appreciable on the ground.
Low	Setting makes a small contribution to the significance of the asset. The asset's surroundings have little relevance to its significance or the appreciation thereof. The asset is difficult to identify on the ground or its setting is difficult to appreciate on the ground.
Negligible	The asset is imperceptible in the landscape and its significance or the appreciation thereof does not relate to its surroundings.

Magnitude

10.4.20 The magnitude of an effect reflects the extent to which relevant elements of the cultural heritage asset's setting are changed by the development and the impact that this has upon the character and value of the asset and the appreciation thereof. Guideline criteria for magnitude defined as high, medium, low or negligible magnitude are described in Table 10.4. As with other criteria presented, this is intended as a general guide and it is not anticipated that all the criteria listed will be present in every case.

10.4.21 The following are guides to the assessment of magnitude of effect:

- *Obstruction of or distraction from key views.* Some assets have been sited or designed with specific views in mind, such as the view from a Roman signal station to an associated fort or a country house with designed vistas. The obstruction or cluttering of such views would reduce the extent to which the asset could be understood and appreciated by the visitor. Developments such as that proposed outside a key view may also distract from them and make them difficult to appreciate on account of their prominence. In such instances the magnitude is likely to be greatest where views have a particular focus or a strong aesthetic character.
- *Changes in prominence.* Some assets are deliberately placed in prominent locations in order to be prominent in the surrounding landscape, for example prehistoric cairns are often placed to be silhouetted against the sky and churches in some areas are deliberately placed on ridges in order to be highly visible. Developments can reduce such prominence and therefore reduce the extent to which such assets can be appreciated.
- *Changes in landscape character.* A particular land use regime may be essential to the appreciation of an asset's function, for instance the fields surrounding an Improvement Period Farmstead are inextricably linked to its appreciation. Changes in land use can leave the asset isolated and reduce its value. In some instances, assets will have aesthetic value or a sense of place that is tied to the surrounding landscape character.
- *Duration of effect.* Effects that are short term are generally of lesser magnitude than those that are long term or permanent.
- *Reversibility of Effects* Readily reversible effects are generally of lesser magnitude than those that cannot be reversed.
- *Effects upon a defined setting* will be of greater magnitude than those that affect unrelated elements of the asset's surroundings or incidental views to or from an asset that are unrelated to the appreciation of its value.

10.4.22 It should be noted that the assessment of magnitude will be based on the interplay of these factors. No single factor will be taken to over-ride other factors, for instance an adverse effect that would be of high magnitude will not generally be reduced to low magnitude, simply on the grounds that it is reversible. It should also be noted that whilst the development may be present within the visual envelope of an asset this does not automatically mean there is an effect on the setting of the asset. Where this is the case, the reasoning behind this will be given.

Table 10.4 Criteria for Assessment of Magnitude of an Effect on the Setting of a Cultural Heritage Asset

Magnitude	**Guideline Criteria**
Large beneficial	The contribution of setting to the cultural heritage asset's significance is considerably enhanced as a result of the development; a lost relationship between the asset and its setting is restored, or the legibility of the relationship is greatly enhanced. Elements of the surroundings that detract from the asset's cultural heritage significance or the appreciation of that significance are removed.
Medium beneficial	The contribution of setting to the cultural heritage asset's significance is enhanced to a clearly appreciable extent as a result of the development; as a result the relationship between the asset and its setting is rendered more readily apparent. The negative effect of elements of the surroundings that detract from the asset's cultural heritage significance or the appreciation of that significance is appreciably reduced.
Small beneficial	The setting of the cultural heritage asset is slightly improved as a result of the development, slightly improving the degree to which the setting's relationship with the asset can be appreciated.
Negligible / None	There are changes in the surroundings of the asset, however these do not affect its cultural significance.
Small adverse	The contribution of the setting of the cultural heritage asset to its significance is slightly degraded as a result of the development, but without adversely affecting the interpretability of the asset and its setting; characteristics of historic value can still be appreciated, the changes do not strongly conflict with the character of the asset, and could be easily reversed to approximate the pre-development conditions.
Medium adverse	The contribution of the setting of the cultural heritage asset to its significance is reduced appreciably as a result of the development and cannot easily be reversed to approximate pre-development conditions. Relevant setting characteristics can still be appreciated but less readily.
Large adverse	The contribution of the setting of the cultural heritage asset to its significance is effectively lost or substantially reduced as a result of the development, the relationship between the asset and its setting is no longer readily appreciable.

Significance

10.4.23 The significance of an effect on a cultural heritage asset, whether a physical effect (direct or indirect) or an indirect effect on its setting, is assessed by combining the magnitude of the effect and the sensitivity of the cultural heritage asset. The matrix in Table 10.5 provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly where the sensitivity or effect magnitude levels are not clear or are borderline between categories. Predicted adverse effects of a moderate to very substantial level are considered significant for the purpose of the EIA Regulations.

Table 10.5 Criteria for Assessing the Significance of Effects on Cultural Heritage Assets

Magnitude of change	Sensitivity of receptor: HIGH	MEDIUM	LOW	NEGLIGIBLE
LARGE	SUBSTANTIAL	SUBSTANTIAL	MODERATE	NEGLIGIBLE
MEDIUM	SUBSTANTIAL	MODERATE	SLIGHT	NEGLIGIBLE
SMALL	MODERATE	SLIGHT	NEGLIGIBLE	NEGLIGIBLE
NEGLIGIBLE	SLIGHT	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE

10.5 Baseline information

Development site description and geology

10.5.1 The Inner Study Area comprises approximately 1140ha of upland moorland varying in height from 60 – 140m aOD. The bedrock of the north and west of the area is an unnamed igneous intrusion while that in the east and south is red sandstone. The superficial geology of the north of the Inner Study Area is diamicton till whilst in the south it is peat. In terms of present land-use this area is almost completely covered by plantation forestry.

Site history

10.5.2 The archaeological record for this area of Caithness is relatively rich with assets dating from the prehistoric to the early modern period present. The Neolithic to Bronze Age is represented by chambered tombs (A37, A42 & A43), standing stones (A39 & A44) and a stone circle (A45). Also possibly dating to the Bronze Age are an asset type – stone rows – unique to Caithness and the east of Sutherland. The site type is composed of multiple rows of small, upright stones commonly radiating in a fan shape from a cairn. One such site (Borlum Stone Rows: A10) is located near the northern limit of the Inner Study Area. There is also a scheduled example of this monument type (Cnoc Freiceadain stone rows: A41) in the Middle Study Area.

10.5.3 The Iron Age to early medieval period is represented by brochs (A36, A38, A47 & A49) in the Middle Study Area and a possible broch (A16) within the Inner Study Area. Brochs are stone-built towers typically with a stair, well and intra-mural chambers built within the wall thickness. The exact function of brochs remains open to debate but the nature of these structures clearly suggests that defence was a priority. Caithness has the highest concentration of brochs in Scotland; these large dry-stone towers are commonly located on top of natural mounds.

10.5.4 Dating to the early medieval period are the Pictish inscribed stones (A30) located within the Middle Study Area. Such stones clearly testify to Pictish cultural activity in the area in the last quarter of the first millennium AD.

10.5.5 Dounreay Castle (A35) is a late medieval castle dating to the late 16th century. This castle was built in the style of the Lowland Scots castles rather than the more typical Highland style castle. As such this castle reflects the influence that the Lowland Scots exerted here and is a symbol of the wealth of some of the larger estates of Caithness during the medieval period. The medieval period is also represented by Reay burial ground, old church and cross slab (A34); the cross slab is believed to date to the 9th - 10th century.

10.5.6 Evidence for the Vikings in Caithness is largely concentrated along the coast. In the area surrounding the application area Viking burials were recovered in the early 20th century in the sand dunes at Reay. This set of burials is the largest concentration of Viking burials recorded on mainland Scotland.

10.5.7 From the medieval period through to the early 19th century, the inland glens and straths of Caithness were populous with communities of farmsteads and townships farming the land. Outlying these settlements in more remote areas small shielings related to summer pastoral activity were commonly used.

10.5.8 The Sandside Estate clearances took place in the 1830s. This period saw the inland glens and straths cleared of their densely populated farming settlements with the population being moved out to the coast to make way for the adoption of large scale sheep farming. These clearances left behind a legacy of abandoned remains of townships, farmsteads and shielings. Historic assets in the Inner Study Area which are likely to date to this period include A1, A7 and A24 – A28.

10.5.9 Large scale sheep farming subsequently gave way to the creation of sporting estates and the development of extensive plantation forestry. To this day these remain the principal land-uses for the inner straths of Caithness, whilst the coastal fringe of this part of Caithness has been dominated by the Dounreay Nuclear Plant and the employment and infrastructure that this large industry has brought to the area.

Designated cultural heritage assets within the Inner Study Area

10.5.10 There are no designated cultural heritage assets within the Inner Study Area.

Undesignated cultural heritage assets within the Inner Study Area

10.5.11 There are 28 non-designated cultural heritage assets (**Appendix 10.A**) within the Inner Study Area. These include hut circles, burnt mounds, enclosures, a township, farmsteads, cairns and a possible broch. These assets are largely concentrated in the north of the application area but there is also a number along the east side. No assets have been previously recorded in the central or western parts of the application area. This may reflect the restricted access to these areas rather than an absence of assets.

Designated cultural heritage assets within the Middle Study Area

Scheduled monuments

10.5.12 There are 18 scheduled monuments (Table 10.6) in the Middle Study Area. These are largely prehistoric in date and include five cairns, a stone circle, standing stones, stone rows as well as five brochs. The early historic period is represented here by

two carved Pictish symbol stones (A33). There is also one scheduled monument dating to the medieval period; the remains of Reay burial ground, old church and cross slab (A35).

10.5.13 One of the scheduled monuments, Cnoc Freiceadain long cairns (A42) is also a property in care.

Table10.6 Scheduled Monuments within the Middle Study Area

A. No.	Name
30	Sandside House, two carved stones
32	Knock Stanger, cairn
34	Reay, burial ground, old church and cross slab
35	Dounreay Castle
36	Knock Urray, broch
37	Cnoc-na-h'Uiseig, chambered cairn
38	Achvarasdal House, broch
39	Achvarasdal House, two stones
40	Achunabust, broch
41	Cnoc Freiceadain, stone rows
42	Cnoc Freiceadain, long cairns
43	Hill of Shebster, chambered cairn
44	Clach Clais an Tuire, standing stone
45	Bridge of Broubster, stone circle
46	Carn Liath, cairn
47	Tota an Dranndain, broch
48	Creagan a'Bheannaich, chapel and graveyard
49	Tulach Gorm, broch

Listed buildings

10.5.14 There are 14 listed buildings in the Middle Study Area. The group comprises three Category A Listed Buildings (Table 10.7), eight Category B Listed Building and three Category C(S) Listed Buildings (**Appendix 10.B**).

Table10.7 Category A Listed Buildings within the Middle Study Area

A. No.	Name
29	Sandside House Kiln Barn And Single Storey Range Of Former Byres, Cottage And Dairy, And Implement Shed

31	Sandside Harbour 1 And 2, Sandside And Fishing Store
33	Reay Parish Church And Enclosure Wall

Other Designations

10.5.15 There are no World Heritage Sites, Inventory gardens and designed landscapes, Inventory battlefields or Conservation Areas within the Middle Study Area.

Potential for previously unrecorded cultural heritage assets within the Inner Study Area

10.5.16 The potential for previously unrecorded cultural heritage assets within the Inner Study Area is considered in relation to the location and number of recorded cultural heritage assets in the surrounding area and the topography and vegetation cover of the application area.

10.5.17 Known cultural heritage assets in the application area are concentrated in the north of the area. The potential for previously unrecorded cultural heritage assets will be greatest in areas along watercourses above the strath floor or in well drained higher ground. Such areas are traditionally the most attractive for settlement in this part of Caithness. As much of the application area remains densely afforested, the walkover survey that was undertaken as part of this assessment was limited to clearings and areas that were easily accessible. It is therefore possible that upstanding archaeological remains may survive within more densely planted and less accessible areas of the plantation.

10.5.18 Due to the high number of cultural heritage assets recorded in the surrounding area and the relatively small amount of the Inner Study Area surveyed due to dense plantation forestry, it is considered that there is moderate potential for cultural heritage assets to survive unrecorded within the application area.

Trends and projected future baseline

10.5.19 The projected future cultural heritage baseline will remain the same if there is no development. The exception will be any unknown cultural heritage assets within the plantation forestry which are likely to continue to be degraded by root action while the forest is growing. When the plantation forestry is felled the cultural heritage assets within it may be subject to damage from earthworks and plant movements related to this process.

Information gaps

10.5.20 The Inner Study Area is largely covered in dense plantation forestry. Such conditions made an archaeological survey of the whole area impracticable as visibility within plantation forestry is poor and the potential for identifying previously unrecorded cultural heritage assets is limited. The results of a walkover survey for much of the Inner Study Area are therefore missing and the potential for this area can only be assessed on the basis of known cultural heritage assets in the surrounding area.

10.6 Topic specific design evolution

Scheme layout response to potentially significant effects

10.6.1 The scheme has been laid out with cultural heritage constraints in mind. The northern section of the application area has been avoided as far as possible due to the number of undesignated cultural heritage assets in the area.

10.6.2 Also the area of the limekiln (A23) has been avoided as far as reasonably practicable to allow the relationship between the limekiln, the building and the quarry to be preserved.

10.7 Predicted effects of the scheme

Direct (construction period) effects

10.7.1 There will be direct construction effects on two known cultural heritage assets.

10.7.2 The Claperon Dyke (A10) will be crossed by the access track. This dyke is a relatively common site type and it may be a plantation dyke related to the planting of the forestry or it may relate to an earlier period of land division. This is considered to be a site of no more than local importance and negligible sensitivity to construction effects. The proposed access track will cross Claperon Dyke removing a small section. This will be an adverse effect of small magnitude. It is therefore considered that without mitigation there will be a negligible level of effect on Claperon Dyke which is adverse but not significant in EIA terms.

10.7.3 The access track will also cross through the area of Milton Township and its associated area of rig and furrow (A28). Milton is a post-medieval agricultural township with possible origins in the medieval period. This is a relatively common site type in the highlands and there is no reason to suggest that this asset is of more than local importance. It is therefore considered to be of low sensitivity to direct construction effects. The track is routed to avoid the upstanding buildings of Milton, however given the proximity of the track to the structures there is potential for accidental impacts from construction plant. Accidental damage could result in impacts of up to medium magnitude on Milton with the partial removal of buildings of importance to the township. There will be direct effects on the area of rig and furrow and possibly on subsurface assets within the area of the township. This is likely to be an effect of small negligible magnitude on the rig and furrow as only a relatively low percentage of it will be damaged by the access track being built across the area. The potential impact on subsurface assets related to the farmstead within the area is unknown but could be up to complete removal of the asset which would be an impact of large magnitude. It is considered that without mitigation there will be between a negligible/ slight to slight/moderate level of effect on the Milton Township which is adverse but not significant in EIA terms.

10.7.4 Due to the plantation forestry covering much of the Inner Study Area a pre-application walkover survey has not been carried out for much of the construction footprint. It is therefore possible that upstanding cultural heritage assets survive unrecorded. The potential for upstanding assets is reduced as the process of planting and maturing forestry is likely to have damaged or removed such assets.

10.7.5 As much of the application area remains densely afforested, the walkover survey that was undertaken as part of this assessment was limited to clearings and areas that

were easily accessible. It is therefore possible that upstanding archaeological remains may survive within more densely planted and less accessible areas of the plantation. Therefore there is potential for previously unrecorded cultural heritage assets to be affected as a result of the construction of the turbine bases, access tracks and associated infrastructure. As this resource is unknown, their sensitivity and the magnitude of the effect cannot be assessed.

10.7.6 It is considered, in this assessment, that there is moderate potential for previously unrecorded cultural heritage assets within the Inner Study Area. There is potential for previously unrecorded cultural heritage assets to be affected within this area as a result of the construction of the turbine bases, access tracks and associated infrastructure. As this resource is unknown their sensitivity and the magnitude of the effect cannot be assessed.

Indirect (operational period) effects

10.7.7 The potential for the operational phase of the proposed development to affect cultural heritage assets has been considered. Setting issues are the only operational effects of the development that have the potential to have significant effects on cultural heritage assets. The starting point for the assessment of setting effects is reference to the ZTV (as described in the Landscape and Visual Chapter 9), which is used to identify those assets where views to or from the asset may be changed by the proposed development. It should be noted that the ZTV is based on a bare earth model that does not allow for the masking effects of local topography, vegetation and buildings. It is therefore possible for assets that are within the ZTV to, in reality, have no views which include the proposed development due to local conditions. This phase of work was therefore supported by site visits.

10.7.8 The setting of assets within the ZTV, or with relevant views to assets within the ZTV, has been defined and the spatial / visual relationship of the proposed wind farm to the asset and its setting briefly described. Where the wind farm has the potential to have effects on the setting of an asset, this has been taken forward to a detailed assessment.

Scheduled monuments with little or no visibility

10.7.9 Of the eighteen scheduled monuments within the Middle Study Area five (A30, A35, A38, A39 and A49) will not be subject to effects on their setting as there will be no intervisibility with the proposed wind farm. These five sites are listed in Table 10.8.

Table 10.8 Scheduled Monuments within the Middle Study Area with little or no intervisibility with the proposed wind farm

A. No.	Name	Visibility with proposed wind farm
30	Sandside House, two carved stones	Not visible. These stones have been removed from their original settings and placed against the garden wall of Sandside House. The walls block any views to or from these stones to the proposed wind farm. No third party views of these stones will be affected by the presence of the proposed wind farm.
35	Dounreay Castle	Not visible. The castle is located almost wholly outwith the ZTV of the proposed wind farm. The intervening

A. No.	Name	Visibility with proposed wind farm
		buildings of Dounreay Nuclear Plant will block any remaining views to the proposed wind farm. No views of this site will be affected by the presence of the proposed wind farm.
38	Achvarasdal House, broch	Not visible. The broch is located within the Achvarasdal managed woodland, no views out in the direction of the proposed wind farm and no important views to this asset in which the proposed wind farm extension will be visible. Very unlikely this woodland will be removed during the lifespan of the wind farm as this is a community managed woodland surrounding a care home. No views of this broch will be affected by the presence of the proposed wind farm.
39	Achvarasdal House, two stones	Not visible. The stones are located within the Achvarasdal managed woodland, no views out in the direction of the proposed wind farm and no important views to this asset in which the proposed wind farm extension will be visible. Very unlikely this woodland will be removed during the lifespan of the wind farm as this is a community managed woodland surrounding a care home. No views of these stones will be affected by the presence of the proposed wind farm.
49	Tullach Gorm broch	Not visible. This broch lies outwith the ZTV of the proposed wind farm and therefore the turbines will not be visible from this asset. No views of this broch will be affected by the presence of the proposed wind farm.

Scheduled monuments with potential for setting effects

10.7.10 **Cnoc Stranger (A32)** is the scheduled remains of a prehistoric cairn. It is located within a consolidated sand dune at the head of Sandside Bay to the west of Sandside Burn. The views to the north east are over Sandside Bay to the Pentland Firth with the Dounreay Nuclear Plant, visible to the east of the bay. The view to the south is over agricultural land to the village of Reay and to the west is also over fields to the woodland at Sandside House.

10.7.11 Cnoc Stranger has intrinsic value in its fabric which has the potential to add to our knowledge on funerary and ritual activity during prehistory.

10.7.12 The contextual value of this asset is in its coastal location at the head of Sandside Bay. It would appear to have been located here due to the strong visual relationship with the sea. However, the relationship between the cairn and its coastal setting is diminished in that the cairn is not readily apparent as it is within a consolidated sand dune.

10.7.13 There is no associative value to this monument. It is considered that Cnoc Stranger is a monument of low sensitivity to effects on its setting.

10.7.14 The proposed turbines will be visible 3.5km to the south east of this cairn. There is no culturally significant relationship between this cairn and the land on which the proposed wind farm will be located. Additionally there are no culturally significant views towards this cairn which will be affected by the proposed wind farm. It is considered that the proposed wind farm will not affect the setting of Cnoc Stranger.

10.7.15 **Reay burial ground, old church and cross slab (A34)** is the scheduled remains of Reay burial ground which contains the remains of a medieval church and a cross-slab dating from the 9-10th century. The burial ground is surrounded by a stone wall and deciduous trees; to the south of the burial ground is a modern house.

10.7.16 This monument has intrinsic value in its fabric as a data source for highland ecclesiastical and funerary practices during the medieval and post- medieval periods.

10.7.17 The contextual value of this asset lies in its relationship with the settlement of Reay. This is the community that the church and burial ground were built to serve and it is therefore the association with this community which is of importance.

10.7.18 The associative characteristics of this monument lie in the relationship between the monument and the descendants of the people who worshipped and were buried here. It is considered that Reay burial ground, old church and cross slab is an asset of medium sensitivity to effects on its setting.

10.7.19 The setting of this burial ground draws its importance from its relationship with the surrounding village of Reay. The nearest turbine of the proposed wind farm will be located 2.9km to the south, the views to the turbines will be largely filtered by the surrounding trees and buildings. The burial ground has no culturally significant relationship with the area on which the turbines will be located, nor will the proposed wind farm affect any significant views from the village to the burial ground. It is considered that the proposed wind farm will have no effect on the setting of Reay burial ground, old church and cross slab.

10.7.20 The scheduled monument **Knock Urray (A36)** is the remains of a probable Iron Age broch. It is located approximately 400m south of the Dounreay Nuclear Plant in an area of improved grazing with large pylons carrying electrical cables across this broch from the north west to the south east.

10.7.21 Knock Urray has intrinsic value in its fabric as a data source on the architecture, defensive and domestic life of the broch during the Iron Age.

10.7.22 The contextual landscape setting of this broch has been greatly diminished by its proximity to the Dounreay Nuclear Plant. Although it can still be seen that this monument has been located here due to the quality of the surrounding land and for the long views along the coastal plain and (prior to the Nuclear plant) to the Pentland Firth.

10.7.23 This monument has no associative value. This monument is considered to be of negligible sensitivity to impacts on its setting.

10.7.24 The proposed wind farm will be visible from Knock Urray 4.4km to the south. There is no culturally significant relationship between this broch and the land on which the proposed wind farm will be located. Views to this broch are largely from further in land looking towards the coast, the proposed wind farm will not be visible in these views to the broch. Additionally, the setting of Knock Urray has already been significantly altered. It is therefore considered that the proposed wind farm will not affect the setting of this broch.

10.7.25 The scheduled monument **Cnoc-na-h'Uiseig, chambered cairn (A37)** has been heavily disturbed by large scale construction works related to the World War II airfield built on the site. This cairn is located on the coastal plain between the

Dounreay Nuclear Plant which is approximately 500m to the south west and Forss Wind Farm approximately 2km to the north east.

10.7.26 This chambered cairn has intrinsic value as a data source on the funerary and ritual activities of the prehistoric period. This value will have been reduced due to the amount this cairn had been disturbed by the previous construction works.

10.7.27 The contextual value of this cairn lies in its relationship with the landscape built with views along the coastal plain and out to the Pentland Firth. The contextual value has been diminished by its proximity to the airfield, Nuclear Plant and Forss Wind Farm.

10.7.28 This monument has no associative value. This monument is considered to be of negligible sensitivity to effects on its setting.

10.7.29 The proposed wind farm will be visible from Cnoc-na-h'Uiseig 5.9km to the south west. At this distance the turbines will lie outwith the coastal plain and sea views which are of importance to this monument. The setting of Cnoc-na-h'Uiseig has already been significantly altered and there is no clear relationship between the cairn and the area of ground on which the wind farm will be located. Additionally there are no culturally significant views towards this cairn that will be affected by the proposed wind farm. It is considered that the proposed wind farm will not affect the setting of this cairn.

10.7.30 **Achunabust Broch (A40)** is the scheduled remains of an Iron Age Broch. It is located in an improved field to the immediate north west of Achnabust Farmhouse. This broch survives as substantial turf-covered earthworks. From this broch the view is over the surrounding low agricultural land with the Pentland Firth visible in the distance.

10.7.31 Achunabust Broch has intrinsic value in its fabric as a data source on the architecture, defensive and domestic life of the broch during the Iron Age.

10.7.32 The contextual value of the broch is drawn from its relationship with its surroundings on the top of a rise with long views over the surrounding flat agricultural land to the north and northwest. It appears likely that the broch would have been located in this position for the defensive value these long views would have afforded it.

10.7.33 There is no associative value to this broch. It is considered that Achunabust Broch is a monument of medium sensitivity to impacts on its setting.

10.7.34 The proposed wind farm will be visible over the hills of Creag Leathan and Creag Mhor to the south west at a distance of 2.8km to the nearest turbine. Views to this broch of importance are when approaching it from the north or south over the flat agricultural land, the proposed wind farm will not affect these views. The intervening hills will result in the turbines lying outwith the landscape which gives contextual value to this broch and will not affect the setting of this monument.

10.7.35 The scheduled monument – **Cnoc Freiceadain, stone rows (A41) –** was recorded in 1910 by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) as thirteen rows of approx 157 stones radiating generally to the east-south-east from a square of four stones. However, by the time it was recorded by the Ordnance Survey in 1969, the monument had been heavily disturbed with only 36 upright stones remaining. The stone rows lie on the lower slopes of the Hill of Shebster with views over the coastal plain to the Pentland Firth. The Dounreay Nuclear Plant somewhat dominates the view to the northwest.

10.7.36 The intrinsic value of this asset will have been greatly diminished by the level to which it has been disturbed. However, subsurface, the footings of the stones may still survive and they may be able to add to our knowledge of this site type.

10.7.37 This monument has contextual value due to the relative uniqueness of multiple rows of small standing stones to Caithness and Sutherland. These stone rows are recorded as being orientated west north west to east south east with the fan of stones widening to the south.

10.7.38 This monument has no associative value and it is considered to be of negligible sensitivity to impacts on its setting.

10.7.39 The turbines will be visible to the south west of Cnoc Freiceadain stone rows at a distance of 4.8km to the closest turbine. At this distance and not within a view direction of importance to the stone rows, the proposed wind farm will not affect the setting of the Cnoc Freiceadain stone rows.

10.7.40 The scheduled monument – **Cnoc Freiceadain long cairns (A42) –** comprises the remains of two long cairns positioned approximately at right angles to one another. These cairns appear to be relatively well preserved with the southern cairn being virtually intact. It is probable that these two long cairns have been built incorporating three earlier chambered cairns (Close-Brooks, 1995, 162).

10.7.41 These cairns are located on the northern summit of the Hill of Shebster, this location affords them extensive views over Caithness and on clear days across the Pentland Firth to the Orkneys.

10.7.42 The western long cairn is orientated north west to south east; to the north west the view is over the coastal plain to the Pentland Firth. The Dounreay Nuclear Plant is now a notable feature in this direction, with this cairn appearing almost aligned to the buildings of the plant. The view to the south east is to the rising ground of Yellow Moss where Baillie Wind Farm is currently under construction.

10.7.43 The eastern long cairn is orientated north east to south west. The view to the north east drops off the summit of the Hill of Shebster to the flat agricultural coastal plain with the Pentland Firth beyond. The view to the south west is along the summit of the Hill of Shebster towards the Hill of Shebster chambered cairn (A43).

10.7.44 The Cnoc Freiceadain long cairns' intrinsic value is in their fabric. These well preserved cairns have the potential to add to our knowledge of the funerary and ritual activity of the prehistoric period in Caithness.

10.7.45 The contextual value of these cairns lies in their clear relationship with the surrounding landscape. They have been located on the Hill of Shebster to make use of the wide views over the coastal plain to the Pentland Firth and Orkney beyond.

10.7.46 This monument has associative value in its visual relationship with the Hill of Shebster chambered cairn (A43). Although these cairns may not have been contemporary, they would have been recognisable and show a continued use of this hill for funerary and ritual practices during prehistory. It is considered that this is an asset of medium sensitivity to effects on its setting.

10.7.47 The closest turbine of the proposed wind farm is located 4.4km to the south west of this cairn. At this distance, the wind farm will not change the prominence of the Cnoc Freiceadain long cairns' in skyline views to these assets. The turbines will lie outwith

the key views from this monument which are largely over the coastal plain through to the west, north and north east. It is concluded that the wind farm will have an effect of negligible magnitude on the setting of the Cnoc Freiceadain long cairns.

10.7.48 It is considered that there will be a negligible level of effect that is adverse but not significant in EIA terms on the setting of Cnoc Freiceadain long cairns.

10.7.49 **The Hill of Shebster, chambered cairn (A43)** is the scheduled remains of a heavily robbed Neolithic round cairn. This cairn is located in a field on the southern plateau summit of the Hill of Shebster. This location affords the cairn views over the flat agricultural land to the west with the rising hills of Sutherland beyond. To the northwest the view is over the coastal plain to the Pentland Firth and the Orkney Islands visible in the distance on clear days; the Dounreay Nuclear Plant is now also a notable feature in this direction. To the north the view is along the rise of the Hill of Shebster with the Cnoc Freiceadain long cairns (A42) visible on the summit. To the south the view is restricted to the top of the Hill of Shebster with only hills of a similar height or higher visible beyond.

10.7.50 The Hill of Shebster chambered cairn has intrinsic value in its fabric which has the potential to add to our knowledge of the funerary and ritual activity of the prehistoric period in Caithness. This value will be diminished by the level to which this cairn has previously been robbed.

10.7.51 The contextual value of this asset lies in its relationship with its surroundings, in particular that it was built on the top of a hill with wide views over the coastal plain to the Pentland Firth and Orkney beyond.

10.7.52 This monument has associative value in its visual relationship with the Cnoc Freiceadain long cairns (A42); although these cairns may not have been contemporary with the chambered cairn they would have been recognisable and show a continued use of this hill for funerary and ritual practices during prehistory. It is considered that this is an asset of medium sensitivity to effects on its setting

10.7.53 The closest turbine of the proposed wind farm is located 3.8km to the south west of this cairn. At this distance they will not change the prominence of Shebster Hill chambered cairn in skyline views to the cairn. The turbines will lie outwith the key views from this monument which are to the north and west. It is concluded that the wind farm will have an effect of negligible magnitude on the setting of the Hill of Shebster chambered cairn.

10.7.54 It is considered that there will be a negligible level of effect that is adverse but not significant in EIA terms on the setting of The Hill of Shebster chambered cairn.

10.7.55 The scheduled monument **Clach Clais an Tuirc standing stone (A44)** is a large standing stone which is approximately 1.9m high. It is located to the east of Achvarasdal Burn in an area of heather moorland surrounded on all sides by plantation forestry. To the immediate north of the standing stone is a circular dry-stone sheepfold. The view to the south west, although somewhat limited by the plantation forestry, is along the course of the Achvarasdal Burn between the hills of Creag Leathan and Creag Mhor.

10.7.56 Clach Clais an Tuirc holds intrinsic value in that the footing of the standing stone may reveal information on the way in which the stone was erected and may also reveal information on the people that erected it through artefacts deposited or lost in the

footing. This stone has contextual value in its relationship with the wider landscape. At present the understanding of this setting is diminished by the surrounding plantation forestry. This standing stone has no apparent associative value. Clach Clais an Tuirc is considered to be a monument of medium sensitivity to effects on its setting.

10.7.57 The closet turbine of the proposed wind farm will be located 1.4km to the south west of Clach Clais an Tuirc. The turbines will be largely blocked from view by the Creag Leathan and Creag Mhor hills.

10.7.58 The ZTV indicates that up to 15 turbines will be visible. However, these will largely be screened from view by the Creag Leathan and Creag Mhor hills, and the plantation forestry – although not necessarily present for the lifetime of the wind farm – will initially partly screen the turbines. The presence of the turbines will not affect the contribution of the surroundings to the understanding of the stone's contextual relationship with the landscape. While the standing stone may have some sense of place, the effect of the turbines will be greatly minimised by the surrounding commercial forestry plantation, the topographic separation from the intervening hills and the distance from the turbines. When the plantation forestry is felled the effect of the turbines will still be minimised by the topographic separation and the distance from the turbines. Consequently, the effect on the sense of place is given little weight and it is concluded that the impact will be of small magnitude on the setting of Clach Clais an Tuirc standing stone. This will be a slight level of effect on the setting of Clach an Tuirc that is adverse but not significant in EIA terms.

10.7.59 The scheduled monument the **Bridge of Broubster stone circle (A45)** is the remains of a stone circle. It comprises five upstanding stones, the largest of which is approximately 1.3m high while the remaining stones are on average 0.5m high. In addition to the upstanding stones there are a number of outlying stones which may have formerly been upright and part of the stone circle. It is located in an area of peat moorland on the eastern slopes of the wide strath of Forss Water.

10.7.60 This monument has intrinsic value in its subsurface remains as a data source on the ritual activities of the prehistoric period in this area.

10.7.61 The stone circle has contextual value in its position in the landscape overlooking the strath of Forss Water.

10.7.62 This monument has no associative value. It is considered that this is a monument of medium sensitivity to impacts on its setting.

10.7.63 The proposed wind farm will be visible beyond the hills of Cnoc na Claise Brice and Broubster Hill to the west, the nearest turbine will be at a distance of 5.2km from the stone circle. It is considered that the proposed wind farm will lie outwith the landscape that is of importance to the setting of this stone circle ie the views over the Strath of the Forss Water. Additionally the proposed wind farm will not be located in culturally significant views to the stone circle. It is considered that the proposed wind farm will not have an effect on the setting of the Bridge of Broubster stone circle.

10.7.64 The scheduled monument **Carn Liath Cairn (A46)** is the ruined remains of a possible Neolithic chambered cairn. It survives as a large mound of stones measuring 32m by 18m and up to 2m high. The mound is surrounded by 14 upright slabs. However, these do not create a recognisable structure or kerb.

10.7.65 Carn Liath Cairn is not located in a prominent position. It is located in an area of grass moorland with Forss Water passing the cairn to the immediate west. As the area is relatively tussocky moorland, the cairn is not visible in the wider landscape and there are no identifiable culturally significant views to this asset. The mound and the upright stones are only appreciable at a short distance from the cairn.

10.7.66 This monument is of national importance due to the intrinsic value of its fabric which may preserve interior structures and deposits. The fabric of this cairn has the potential to contain information that will improve our knowledge of prehistoric ritual and funerary practices and architecture.

10.7.67 The contextual value of this cairn is not clear as there are no readily identifiable landscape features that it may be aligned with; nor are there any contemporary cairns with which it has obvious sightlines. The location of this cairn suggests that it was located for proximity to the Forss Water and therefore that the key views are those along this watercourse. This cairn has no associative value. It is considered to be of low sensitivity to effects on its setting.

10.7.68 According to the ZTV, 11-15 turbines will be visible approximately 5.1km to the northwest. The turbines will be located outwith the valley of Forss Water and at present would be beyond the plantation forestry. There is no apparent culturally significant relationships between this cairn and the land on which the proposed wind farm will be located. It is considered that the proposed wind farm will not have an effect on the setting of Carn Liath Cairn.

10.7.69 The scheduled monument **Tota an Dranndain broch (A47)** is the remains of an Iron Age broch together with the remains of associated structures and outer defences. The broch survives now as a large circular turf and stone earthwork approximately 17m in diameter and 1.5m high. Tota an Dranndain is located approximately 170m to the west of the Forss Water. The farmstead of Torr a' Bhathaich has been built to its west and to its south and a drystone wall has been built to the immediate south of the broch. The building of the farmstead and field walls in such proximity to the Broch have somewhat diminished its presence in the landscape.

10.7.70 The location of the broch would have commanded views north to south along the valley of the Forss Water. Views to the broch of importance would be those looking along the valley towards it from the north or south.

10.7.71 Tota an Dranndain broch has intrinsic value in its fabric as a data source on the architecture, defensive and domestic life of the broch during the Iron Age.

10.7.72 The contextual value of Tota an Dranndain is visible in that it would have been afforded long views north to south along the Strath of Forss Water which would have added to the defensive properties of its location. The contextual value has been diminished by the proximity of the field walls to the broch.

10.7.73 This monument has no associative value. It is considered that Tota an Dranndain is of low sensitivity to impacts on its setting.

10.7.74 The ZTV suggests that between 11 and 15 of the turbines will be visible to the north west from Tota an Dranndain Broch at a distance of 5km to the nearest turbine. The turbines will be located outwith the valley of Forss Water and at present would be beyond the plantation forestry. There are no apparent culturally significant

relationships between this cairn and the land on which the proposed wind farm will be located. Additionally the proposed wind farm will lie out with views of importance towards this asset. It is considered that the proposed wind farm will not affect the setting of Tota an Dranndain Broch.

10.7.75 **Creagan a' Bheannaich, chapel and graveyard (A48)** are the scheduled remains of a possible early ecclesiastical site. This survives as a grass-covered stony mound, believed to be an early Christian site. This is based on local tradition and the presence of a cross-incised stone which was found incorporated in a nearby stone dyke. This stone (A30) is now located in the grounds of Sandside House.

10.7.76 Creagan a' Bheannaich has intrinsic value in its fabric, which has the potential to add to our knowledge of early ecclesiastical activity in Caithness and to resolve the debate as to the nature and date of this asset.

10.7.77 This asset is of limited contextual value as it is not recognisable from any distance and even in its immediate vicinity it is not readily appreciable as an archaeological asset. There are no third party views to this monument. Considered as a chapel and graveyard it can be presumed that this asset was built to serve the surrounding community of the strath of Forss Water. Due to the diminished nature of Creagan a' Bheannaich and the confusion as to the nature of this asset, it is considered to be of low sensitivity to negative effects on its setting.

10.7.78 Between 11 and 15 of the proposed turbines will be visible at a distance of 5.3km to the northwest from Creagan a' Bheannaich. The turbines will be located outwith the valley of Forss Water and at present would be beyond the plantation forestry. There are no culturally significant relationships between this asset and the land on which the proposed wind farm will be located. It is considered that the proposed wind farm will not affect the setting of Creagan a' Bheannaich.

Listed buildings

10.7.79 There are three Category A listed buildings within 5km of the proposed wind farm. The possible effect of the proposed wind farm on their setting is laid out below. The Category B and C(S) listed buildings in the Middle Area have been considered for potential effects on their setting but none has been identified and therefore these categories of buildings have not been considered further. The exception to this is the Category B buildings; Sandside House, the NW and the SE walled gardens, the privy and the dovecot. As these buildings form a complex along with the Category A Sandside House Kiln Barn and Single Storey Range of former Byres, Cottage and Dairy and Implement Shed (A29) they have been assessed together.

10.7.80 **Sandside House Kiln Barn and Single Storey Range of former Byres, Cottage and Dairy and Implement Shed (A29)** are Category A listed while Sandside House, the NW and the SE walled gardens, the privy and the dovecot are Category B listed. These buildings form a complex on top of a small hill to the west of Reay and Sandside Harbour. Views from these buildings towards the proposed wind farm are blocked by the garden wall and deciduous woodland to the south. There are no directed views from these buildings towards the area of the proposed wind farm. Nor are there any views to these buildings which will be affected by the proposed wind farm. It is considered that the proposed wind farm will not affect the setting of Sandside House Kiln Barn and associated buildings.

10.7.81 The Category A listed building **Sandside Harbour (A31)** was built for trade and fishing circa 1830. This is a simple rectangular basin design with associated buildings. The intrinsic value of this monument lies in its fabric as a well-preserved example of an early 19th century harbour and its associated buildings. The harbour and buildings are all orientated to the east towards Sandside Bay and the sea. The contextual value lies in this relationship between the buildings and its surroundings; primarily this is the view to the sea. There are no significant views in other directions from this asset. Although the relationship with the sea is still readily apparent, the harbour entrance almost directly faces Dounreay Nuclear Power Station, 1.9km to the east. This asset has no associative aesthetic values. Sandside Harbour is considered to be of low sensitivity to effects on its setting.

10.7.82 The ZTV suggests that the proposed wind farm will be fully visible 4.4km to the south east of Sandside Harbour. However, the harbour buildings do not face in the direction of the proposed wind farm and the harbour has no relationship with the area of ground on which the turbines are located. It is therefore considered that the proposed wind farm will have no effect on the setting of Sandside Harbour.

10.7.83 **Reay Parish Church and enclosure wall (A33)** is a Category A listed building. It was built in 1739 and altered in 1933. This church remains in ecclesiastical use as Reay Parish Church. The church is located to the north of the A836, the main north coast road, halfway between the two concentrations of housing in Reay.

10.7.84 The intrinsic value of this church lies in the potential its fabric holds on the architecture of 18th century ecclesiastical structures. The church has associative value through its relationship with the community of Reay and the continuity it provides as a place of worship for generations of parishioners. It has associative value and aesthetic attributes as an immediately recognisable large white building in a landscape of relatively low buildings.

10.7.85 The proposed wind farm will be visible 3km to the south of Reay Parish Church. Lying outwith views of the church from the A836 and the village of Reay. The proposed wind farm will not be in views of cultural significance to Reay Parish Church and will not impact on its setting.

Non-statutory register sites

10.7.86 With regard to the non-designated assets within the Inner Study Area, it is considered that the **Aryleive Limekiln (A23),** the possibly associated building (A22) and the quarry pit which lies between them should be considered for operational effects on their setting. Given their proximity to one another, it seems probable that the Aryleive limekiln, the building and the quarry are all contemporary. They probably date from the agricultural improvement period of the 19th century and were certainly present by the time that the First Edition Ordnance Survey Map was surveyed in 1872. This limekiln is likely to have been used largely in the processing of lime for agricultural use as soil fertiliser. It is possible that the lime processed here was also put to construction use such as mortar, plastering and whitewashing as was the lime from other Highland Limekilns (Brown 1996, 11). Limekilns are found throughout the Highlands and are a key feature of the agricultural improvement period of the 19th century.

10.7.87 Although the limekiln and structures will be located within the wind farm, care has been taken to retain them as a unit and no turbines or infrastructure will be located

within the clearing in which they are situated. The limekiln will retain its spatial relationship with the probably contemporary building and quarry and the local setting of these monuments will not be affected.

Table 10.9 Potential receptors of indirect effects

Receptor	Sensitivity of heritage asset to effects on its setting	Magnitude of effect
Cnoc Freiceadain long cairns (A42)	Medium	Negligible
The Hill of Shebster, chambered cairn (A43)	Medium	Negligible
Clach Clais an Tuirc standing stone (A44)	Medium	Small

Direct and indirect effects during decommissioning

10.7.88 There will be no direct effects on cultural heritage during decommissioning. The mitigation put in place during the construction phase will remove the potential for effects during decommissioning.

10.7.89 There are no indirect effects on cultural heritage during decommissioning

10.8 Mitigation and enhancement measures

Construction

10.8.1 A small section of the Claperon Dyke (A10) will be removed during the construction of the access tracks. This will be an adverse effect of negligible level. As such no mitigation is proposed for this effect and it will remain a negligible level of effect that is adverse but not significant in EIA terms.

10.8.2 The access track will be built through the Milton Township and associated rig and furrow (A28). This will result in an adverse effect between a level of negligible/slight and slight/moderate. To mitigate the potential for accidental impacts on upstanding assets of the township these features will be fenced off prior to construction commencing and contractors informed not to enter these areas. This will remove the potential for damage to upstanding cultural heritage assets.

10.8.3 To mitigate the potential for damage or removal of subsurface assets related to the township during the construction period an appropriate programme of archaeological works will be put in place. This will be agreed with the THC's Historic Environment Team in advance of construction.

10.8.4 Due to the plantation forestry covering much of the Inner Study Area, a pre-application walkover survey has not been carried out for much of the construction footprint. There is potential for previously unrecorded upstanding cultural heritage assets to be subject to construction impacts. A post-felling walkover survey of the construction footprint will be carried out prior to construction during which any previously unrecorded upstanding cultural heritage assets identified, will be recorded. Any construction effects on the cultural heritage assets recorded during the

post-felling walkover survey will be mitigated through an appropriate programme of archaeological works to be approved by THC's Historic Environment Team.

10.8.5 The potential for previously unrecorded assets in the Inner Study Area is moderate. The likelihood of previously unrecorded assets lying within the construction footprint, and hence being affected by groundworks, is likewise considered to be moderate. Any construction effects upon previously unrecorded cultural heritage assets will be mitigated through a programme of archaeological works, to be approved by THC's Historic Environment Team. This programme will allow for features to be recorded appropriately and is likely to comprise a watching brief on ground-breaking works with further work being undertaken as appropriate.

Operation

10.8.6 No significant operational effects are predicted on the setting of cultural heritage assets from the operation of the proposed wind farm. No mitigation is therefore required.

Decommissioning

10.8.7 No direct decommissioning impacts are predicted for cultural heritage assets within the Inner Study Area.

10.9 Assessment of residual effects

10.9.1 Following mitigation there will be residual construction effects of a negligible adverse level on the Milton township (A28). This level of effect is adverse but not significant in EIA terms.

10.9.2 Following mitigation there will be no residual construction effects on any other cultural heritage assets.

10.9.3 Potential operational effects have been identified for three cultural heritage assets (A42, A43 & A44). As no mitigation for operational effects is proposed these effects will remain. The residual operational effects are of no greater than a slight level of effect that is adverse but not significant in EIA terms.

Table 10.10 Summary of significance of residual effects

Receptor	Type of effect	Sensitivity of Asset	Magnitude of change	Level of effect and significance	Predicted residual effect
Claperon Dyke (A10)	Direct Construction	Negligible	Small	Negligible	None
Milton Township (A28) upstanding remains	Direct Construction	Low	Medium	Slight	None
Milton Township (A28) subsurface remains	Direct Construction	Low	Up to Large	Up to Moderate	Negligible
Previously unrecorded assets	Direct Construction	Unknown	Unknown	Unknown	Unknown
Cnoc Freiceadain long cairns (A42)	Indirect setting	Medium	Negligible	Negligible	Negligible

Receptor	Type of effect	Sensitivity of Asset	Magnitude of change	Level of effect and significance	Predicted residual effect
The Hill of Shebster, chambered cairn (A43)	Indirect setting	Medium	Negligible	Negligible	Negligible
Clach Clais an Tuirc standing stone (A44)	Indirect setting	Medium	Small	Slight	Slight

10.10 References

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