A13. CULTURAL HERITAGE

A13.1 INTRODUCTION

The design of the proposed Viking Wind Farm has changed since the Section 36 application, and its associated Environmental Statement, were submitted in the spring of 2009. This chapter describes how these changes affect cultural heritage interests.

Before reading this chapter, please first read Addendum Chapter A1, the Introduction, and Chapter A4, the Development Description. Failure to read these two chapters carefully may lead to a misunderstanding of the assessment work described in this chapter. Furthermore, because this addendum chapter is not intended to provide a complete, new assessment of the issues, but instead provides a discussion of the effects of the work which has taken place since the 2009 ES was submitted, it must be read in conjunction with the cultural heritage chapter of the 2009 Environmental Statement.

The assessment has also been reviewed to reflect recent changes in standard good practice in the assessment of the setting of cultural heritage features and to address the concerns and accommodate the recommendations of the responses of the statutory consultees, Historic Scotland and Shetland Amenity Trust.

A13.2 CONSULTATION RESPONSES

For a full list of all comments from statutory consultees please refer to Appendix A1.1.

Consultee responses were received from Historic Scotland (HS) and Shetland Amenity Trust (SAT), to the cultural heritage chapter of the ES.

A13.2.1 Historic Scotland

Table 13.1: Summary of Historic Scotland response

Historic Scotland - Cultural Heritage		
HS1	Predicted significant impact on setting of 8 scheduled monuments (Burravoe chambered cairn (cc); Graven cc; Knowe of Bruland c; Hayfield cc; Crooksetter Hill cc SE; Crooksetter Hill cc NW; Skeo of Gossaford cc; and Hill of Dale cc) assessed as unacceptable in terms of national policy for the protection of the historic environment. Hill of Dale cc close to search area for borrow pits and tracks.	Significant further consultation has taken place with HS and with Shetland Amenity Trust (SAT); turbines have been deleted due to impacts on Cultural Heritage; and a revised and expanded Archaeological Management Plan and Heritage Strategy have been developed.

HS issued a formal response to the planning application on 22nd July 2009, a summary of which is presented below along with a note in parentheses as to where in the addendum each of the issues raised by HS is addressed.

Having taken into account the information supplied, and having visited each of the monuments, HS agreed with the findings of the ES that the impact of the development on the settings of some monuments would be likely to be significant. HS considered that the impact at five monuments would be unacceptable in terms of national policy for the protection of the historic environment. HS lodged an objection to the proposal on the grounds that it would have a significant and adverse effect on the following eight monuments:

- Burravoe, chambered cairn and cairn 470 m NE of (index no 3469)
- Graven, chambered cairn 150m NE of (index 3524)
- Hill of Dale, chambered cairn (index no 3564)
- Know of Bruland cairn Laxo (index no 2038)
- Hayfield, chambered cairn 150m ESE of (index no 5722)
- Crooksetter Hill, chambered cairn at SE summit (index no 3576)
- Crooksetter Hill, chambered cairn near NW summit (index no 3608)
- Skeo of Gossaford, cairn 400m W of (index no 3483).

Please see section A13.5.2 regarding the revised baseline assessment of these monuments, and A13.7(b) regarding the revised impact assessment.

HS further argued that remediation of those monuments would improve the position at three further Scheduled Ancient Monuments (SAMs).

- HS consider that the visual impact of the wind farm on five of the potentially significantly impacted monuments could be mitigated to an acceptable level by the removal or re-siting of 35 turbines (see A13.7 (b)).
- The adoption of a suitable mitigation strategy would enable HS to review their position and potentially withdraw objection to the scheme (see A13.8.2).
- HS disagrees with the ES that a development of 25 years duration could be regarded as less damaging to the settings of monuments than a permanent development might be (see A13.42 c).
- HS asserted that the criteria for the original setting of the monument are not particularly relevant in this case since they (HS) consider that the starting point for any assessment of setting should be the current setting (see A13.4.2 (c)).
- HS assessed the location of turbines in relation to 13 scheduled monuments with a potential 'major' impact. There are five monuments where HS accepts that no mitigation is practicable, due to the number of turbines visible at intermediate distance (see A13.8.2).
- Whilst the turbines would have an impact in the landscape that would alter its character and therefore influence the settings of the monuments for all 13 identified monuments, HS considers the setting of five of these would still be understandable. This is largely due to the fact that the turbines are on average more than 2 km away (see A13.7 (b)).
- HS has identified five monuments for which the removal or relocation of the nearest turbines would reduce the impact of the development. The removal of

those turbines would in addition reduce non-critical impacts on a further three monuments (see A13.7 (b)).

A13.2.2 Shetland Amenity Trust

Shetland Amenity Trust (SAT) issued a formal response to the planning application on 28th July 2009. The response is divided into three sections which address Methodology, Impact and Mitigation respectively. Comments on how the ES has dealt with each of these components are followed by Recommended Planning Conditions. A summary of the comments is presented by order of section below:

Section 1: Methodology

- SAT expressed concern about the walkover survey undertaken as part of the ES. SAT suggested that a more detailed survey including closer spacing of transects would be required to inform the micro-siting of turbines (see Appendix A13.5).
- A number of archaeological sites were not included in the ES. These are listed as SMR 2407, SMR 5481 and SMR 3072. Another site SMR 7910 has been reported since the ES was submitted (see A13.5.1 and Appendix A13.1).
- SAT noted that AOC sites 9 & 10 SMR 7728 would be destroyed by borrow pits and require mitigation (see A13.8.1). In this context it is important to note that the borrow pit locations given in the 2009 ES and illustrated on various plans are *areas of search*; there is no suggestion that the entire area depicted or that every possible borrow pit would be excavated. Therefore considerable scope would exist within the boundaries of the areas of search for archaeological mitigation, including avoidance of archaeological remains.
- The early mapping which shows the development is not considered by SAT to be useful and a more useful exercise would have been to overlay the development on to 19th century OS maps. This was considered but did not prove useful.
- SAT informed VEP that there are 49 19th century maps in the Shetland Archives which had not been consulted (see A13.4.1 and Appendix A13.1).
- No intrusive investigation had been undertaken as part of the EIA and some pre-determination including geophysical survey and trial excavation, which SAT felt would be advisable in advance of the EIA (see Appendix A13.5).
- A Planning Condition was suggested by SAT including the requirement to re-write the cultural heritage report and to undertake walkover survey, geophysical survey and trial trenching.

Section 2: The Impact

- SAT raised queries over the applicability of the criteria used to assess direct impact.
- SAT said the map of archaeological potential should be produced in greater detail (see Figures A13.20.1-A13.20.5).
- Archaeological sites in Shetland are found from sea level up to 460 m high and SAT thought the ES should recognise this as well as the significance of domestic archaeological sites (see Table A13.2).

- A Planning Condition was recommended by SAT including comprehensive mapping of areas of archaeological potential and revisions to criteria for classifying the magnitude of direct impact. (Figures A13.20.1-A13.20.5)

Section 3: Mitigation

- The language used in the mitigation section was said by SAT to be insufficiently robust and inconsistent in places (see A13.8.1 and Appendix A13.5)
- If watching brief works are undertaken, SAT suggested that each machine would need to be monitored by an archaeologist, and an Archaeological Clerk of Works would need to be employed (see Appendix A13.5).
- SAT suggested evaluation would be required for all areas of ground disturbance. This should take the form of 20% trial trenching and/or geophysical survey (see Appendix A13.5).

  A Planning Condition was recommended by SAT including the following 4 requirements:

  a) An Archaeological Clerk of Works would be required to oversee archaeological works (see Appendix A13.5).

  b) All known archaeological sites would be fenced off prior to the commencement of ground works, to include a 10 m buffer zone around the visible archaeology (see Appendix A13.5).

  c) An evaluation would be taken for all areas of ground disturbance and would comprise 20% trial trenching, although geophysics might allow this figure to be reduced (see Appendix A13.5).

  d) Where watching briefs are appropriate, where multiple machines are undertaking ground breaking work simultaneously, multiple suitable qualified archaeologists would be required in order to monitor each machine (see Appendix A13.5).

  e) The developer would afford reasonable access to the Regional Archaeologist or her representative at all times (see Appendix A13.5).

A13.3 CHANGES IN THE POLICY CONTEXT

A number of changes in legislation and guidance have occurred since the submission of the original ES in spring 2009.

A revised Scottish Historic Environment Policy (SHEP) was launched in July 2009. The revised policy contains a new chapter superseding the existing UK policy and sets out revised responsibilities of government bodies for the care of the historic environment in their ownership and also includes policy on historic battlefields. The key principles of SHEP remain unchanged.

The *Memorandum of Guidance on Listed Buildings and Conservation Areas* (Historic Scotland 1998) was officially withdrawn in July 2009 and planning authorities are now directed to SHEP (2009), SPP (2010) and Historic Scotland's *Managing Change in the Historic Environment* for consideration of planning applications affecting the historic environment and the setting of individual elements of the historic environment.

SPP 23 *Planning and the Historic Environment* was superseded by SPP (2010) in February 2010. Paragraphs 110-124 contain planning policies relevant to the historic environment. No substantive change in policy occurred as a result of the consolidation process.

In August 2009 Historic Scotland released a guidance note entitled *Setting* (Consultation Draft).

There has been no material change in policy relevant to the Viking Windfarm Section 36 application.

A13.4 CHANGES IN METHODOLOGY

Having studied the responses from HS and SAT and taking into consideration minor changes in policy outlined above the following were undertaken:

- Each of the eight monuments identified by HS (see A13.2.1 above) was re-visited and relevant observations recorded for each.
- Further documentary sources were examined, for example map records in the Shetland Islands archives.
- Meetings were held with HS (9th April 2010) and SAT (31st March 2010, 21st April 2010 and 3rd June 2010).
- Following these meetings and continuing consultation via email and telephone conversations, the assessment was reviewed and the review is presented below.

A13.4.1 Baseline assessment

Feedback from SAT indicated the existence of maps and plans in the Shetland Archives that were not consulted as part of the original EIA baseline assessment. Additional maps and plans held in the National Archives of Scotland and the Shetland Archives have been consulted for the baseline assessment. The Site Gazetteer in Appendix A13.1 lists the six additional cultural heritage sites found as a result of this exercise. These additional sites are also plotted on location maps (Figures A13.1-A13.4).

A13.4.2 Impact evaluation

(a) **Direct Impacts on known receptors**

The method for assessing direct impacts on archaeology remains unchanged. Table 13.2, as included in the 2009 ES, contained a typing error and a corrected version is set out below. Standard definitions of the terms 'Monument' and 'Site' as conventionally used in heritage management documents and this table are also provided, for clarification:

Table A13.1 Criteria for classifying magnitude of physical impact

Physical impact	Criteria
High	Major loss of information content resulting from total or large-scale removal of deposits from a site whether or not the site is associated with a monument. Major alteration of a monument's baseline condition. Any physical alteration to a Scheduled Ancient Monument. Any alteration to a Category A Listed Buildings, considerable

	alterations to a Category B or Category C Listed Building
Medium	Moderate loss of information content resulting from material alteration of the baseline conditions by removal of part of a site whether or not the site is associated with a monument. Slight alteration of a monument's baseline condition
Low	Minor detectable impacts leading to the loss of information content. Minor alterations to the baseline condition of a monument.
Negligible	Very slight or barely measurable loss of information content; Loss of a small percentage of the area of a site's peripheral deposits. Very slight and reversible alterations to a monument.
None	No impact. *(In the 2009 ES, this cell incorrectly stated "No physical impact anticipated".)*

Monument

A monument is any physical object visible at ground level that by its survival holds the potential to inform us and future generations about persons, actions, periods, or events in the past[1].

Site

An archaeological site is a physical object, or arrangement, not now visible at ground surface made, caused or installed by human activity, that by its survival holds the potential to inform us and future generations about persons, actions, periods, or events[2].

There have been no other changes to the method for assessing direct impacts upon *known* archaeological or cultural heritage receptors.

(b) **Direct Impacts on unknown receptors**

Following feedback from SAT (see section A13.2) maps of archaeological potential have been produced in greater detail for the areas subject to potential direct impact (Figures A13.20.1 to A13.20.5). The information used to inform the mapping included maps of known archaeology (Figures A13.21 – A13.26), Slope Angle, Elevation, Soil and indicative peat depth. Professional judgement has also been applied and assumes a relationship between archaeological remains and topology. Table A13.2 below describes how each of the zones has been defined.

Table A13.2 Criteria for classifying archaeological potential

Archaeological Potential	Criteria
High	The altitude of the valley floors ranges from < 10 m OD (in areas such as Weisdale) to the limit of improved fields around the 80 m contour. The angle of slope in these areas is generally below 10º and as such is unlikely to have hindered past human activity. Peat depth studies within the high potential zone have been limited

[1] Every monument is also located within a site, formed of the debris associated with the construction, use and destruction or abandonment of the monument; but sites are not monuments, in terms of the definitions used here.

[2] Sites may be revealed by the use of special techniques like aerial photography or geophysical survey.

	but where they have been undertaken they generally range from 1.5m to >2.5m. Peat of over 4m in depth was recorded in several valleys during the peat survey. The likelihood of important archaeological sites existing as subsurface remains buried beneath peat in such locations is high. Where there is no evidence for later ploughing or other disturbance, it is likely that a large proportion of archaeological sites will be represented as upstanding remains as is the case at Flamister and along the Burn of Grunnafirth. The valley floors of the Burn of Sandgarth, Burn of Weisdale, Burn of Kergord, Burn of Sandwater, Burn of Burrafirth, Burn of Lunklet, Burn of Forse, Burn of Quoys, Burn of Grunnafirth and Laxo Water are therefore considered to have a relatively high potential for undiscovered archaeological remains. Modern settlement is focused around the coastal fringes and heads of voes. These areas range from 0 – 80 m AOD and contain most evidence for known archaeological remains within the study area. The potential for finding buried subsurface remains in these areas is high.
Medium	This second zone includes the lower slopes of the hills with a slope angle of less than 15º. This zone ranges in altitude from approximately 50m to 140m in the upper reaches around Maa Water. Many cultural heritage monuments, particularly prehistoric and medieval/post-medieval settlements and agricultural remains exist as upstanding remains on the lower slopes of hills where later human activity has been less intense. Peat depths in this area vary but are on average 1.5- 2m deep. Undiscovered sites and monuments are likely to exist in this area and will include site types that would not be expected to have any visible remains. Archaeological survey programmes undertaken in similar areas in Shetland have consistently demonstrated that settlement remains occur up to 100 m AOD. The area of medium potential also includes the majority of hill tops and ridge lines within the proposed development area which range in altitude from 115m AOD at Whitelaw Hill to 281 m AOD at Scalla Field. Archaeological features recorded on the ridges and hill tops tend to fall into three site types: Neolithic chambered cairns, Bronze Age funerary cairns and Medieval or later features associated with the hill farming economy. Structures on the ridges and hill tops are the least likely to be affected by later disturbance; although they may have been subject to some peat ingress. Peat depth studies in this area have demonstrated that peat depths on the hill tops and ridges vary but are generally in the 0-1.5m range. It is unlikely that major sub-surface archaeological sites remain to be discovered on the ridges and hill tops within the wind farm but there remains a Medium potential for the discovery of archaeological remains.
Low	These include areas where slope angle is greater than 20º and

	elevation >100m and there is no known archaeology within 100m. Peat depth and condition in these areas varies but on steeper slopes is consistently less than 1.5m.

It is important to note that these are generalised zones. Large parts of the area proposed for development have been subject to significant erosion of peat, and peat depth alone cannot be used to predict archaeological potential. The results of the peat probing survey (published in the 2009 ES) display significant location variation and do not allow depth to be extrapolated accurately across the site to areas not subject to peat survey. It should further be noted that this attempt at establishing probability based on archaeology and topology takes no cognisance of the low probability of encountering isolated archaeological deposits of extraordinarily high value such as hoards of Bronze Age objects in peat bogs. There is no model for the potential distribution of unexpected remains of this type.

(c) **Indirect Impacts**

Given the changes in policy and guidance, the methodology for indirect impact assessment has been revised. As changes in layout to the proposed wind farm have tended to lessen the impact on settings of protected heritage assets, this methodology has only been applied to protected heritage assets which were judged to be subject to potential impacts significant in terms of EIA regulations in the original ES. This reassessment is summarised in Appendix A13.4 and revised wirelines are presented in Figures A13.27.1 to A13.27.9. Detailed discussion of the reassessment for the eight monuments specified by Historic Scotland in their objection to this proposal is provided in Section A13.6 below. Impacts of Minor or lesser significance have not been reassessed.

Setting

There is no statutory definition of the term 'setting'. The X'ian Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas adopted by the 15th General Assembly of ICOMOS in October 2005 (ICOMOS 2005) states that:

> *'The setting of a heritage structure, site or area is defined as the immediate and extended environment that is part of, or contributes to, its significance and distinctive character'*

In August 2009, Historic Scotland released a consultation document as part of their Managing Change in the Historic Environment series of guidance notes intended to explain how to apply the policies contained in the Scottish Historic Environment Policy (SHEP). This document describes some issues related to setting:

> *'Monuments, buildings, gardens and settlements were not constructed in isolation. They were deliberately positioned with reference to the surrounding topography, resources, landscape and other monuments or buildings. These relationships will often have changed through the life of a historic structure.*
>
> *Setting can be thought of as the way in which a historic structure's surroundings contribute to how it is experienced, understood and appreciated.*
>
> *Setting often extends beyond the immediate property boundary of a historic structure into the broader landscape*' (Historic Scotland 2009).

It also states that:

> *'The setting of a historic structure can incorporate a range of factors, not all of which will apply to every case. These include:*
>
> *current landscape or townscape context;*
>
> *visual envelope, incorporating views to, from and across the historic structure;*
>
> *key vistas, framed by rows of trees, buildings, or natural features that give a structure a context, whether or not intentional;*
>
> *the historic structure's prominence in views throughout the surrounding area;*
>
> *character of the surrounding landscape;*
>
> *general and specific views including foregrounds and backdrops;*
>
> *relationships between both built and natural features;*
>
> *aesthetic qualities;*
>
> *other non-visual factors such as historical, artistic, literary, linguistic, or scenic associations, intellectual relationships (e.g. to a theory, plan or design), or sensory factors;*
>
> *a 'Sense of Place': the overall effect formed by the above factors'* (Historic Scotland, 2009).

Collcutt (1999) (pages 504 and 509) has suggested that various aspects of setting need to be assessed including:

- Intrinsic visual interest and visual qualities;
- Topographic setting, identifying visual relationships to topography and natural features that can be linked with the function of the site or the reason for placement of the site in the landscape;
- Land use setting, identifying whether land use is sympathetic to intellectual understanding of the site;
- Group setting including both contemporary and diachronic groupings or patterning, listing other sites, above or below ground that could assist with creating a network of relationships.

The reporter at the Baillie Hill PLI (2009) stated that 'there is no unambiguous definition of what the setting of a scheduled ancient monument is meant to consist, either generally or in relation to particular monuments'. In this particular case he found that the immediate setting of the monuments involved was the surface of the ridge on which they were located. He acknowledged that the concept of setting in this case could extend to greater distances and encompass the relationship between these monuments and cognate examples up to 25 km away, albeit that in this instance he believed that the significance of that wider setting would survive the development. The reporter's comments in this instance are consistent with the position outlined by Colcutt (1999) pages 501-3[3].

[3] Colcutt has published revised views on setting in a paper issued in 2009 which enlarges the views set out in 1999 but does not supersede it.

The immediate setting of a monument is thus defined as the setting in which a visitor would make an informed observation of the monument. This involves elements of topographic setting and the functional relationship between the monument and the landscape. It can range in scale from a few metres to many kilometres. In the aggregate it constitutes the basis on which the visitor forms an understanding of the monument in terms of aesthetic, historic, scientific, social or spiritual value. Immediate settings are highly sensitive to change

The wider setting of a monument covers the area of landscape intervisible with the monument whether or not that intervisible area has a functional relationship with the monument. The sensitivity of wider settings to change is highly variable and sensitive to other factors including distance.

Cultural value

Cultural value is defined as the cultural worth or importance of a heritage asset. The extent of the value is determined by establishing its capacity to inform present or future generations about the past. This definition is accepted by heritage professionals both in Britain and internationally. This definition is fully outlined in the Burra Charter (ICOMOS 1999) which states that 'cultural significance' or 'cultural heritage value' means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (Article 1.2). This sentiment has since been adopted by heritage organisations including Historic Scotland, who use the term 'cultural significance' in their Scottish Historic Environment Policy (SHEP) where they claim that to have cultural significance a monument must have a particular 'artistic; archaeological; architectural; historic; traditional (factors listed in the 1979 Act); aesthetic; scientific; [or] social [significance] – for past, present or future generations' (Historic Scotland 2009, page 63). In the case of many heritage sites and monuments their general cultural value has already been established through the scheduling and listing processes applied by Historic Scotland.

Visual sensitivity

A monument's visual sensitivity refers to its capacity to retain its ability to inform this and future generations in the face of changes to its setting. For example, monuments with high visual sensitivity will be vulnerable to changes to their setting and even slight changes may reduce their information content. Less visually sensitive monuments will be able to accommodate large-scale changes to their setting without losing their ability to inform.

Setting is a key issue in the case of some, but by no means all monuments. A nationally important site with high cultural value does not necessarily have high visual sensitivity. Our evaluation of the visual sensitivity of a given monument and the subsequent significance of an impact on its setting takes cognisance of the Historic Scotland Guidance, the criteria of which also closely match those laid down in the Burra Charter (ICOMOS 1999, 2.1).

The assessment of the scale of any impact on the setting of a given monument is based on the magnitude of proposed change to the setting of a monument and the extent to which that change would compromise or reduce the monument's cultural value, i.e. its ability to inform this and future generations about humanity's past. The 'ability-to-demonstrate' is the key criterion used in establishing the cultural value of a monument or place as defined within the Burra Charter (ICOMOS 1999). A direct impact on cultural value will occur if, and only if, views to or from the object of cultural value form an essential part of the information content of the monument: all other visual impacts are indirect.

Certain sites and monuments exist, for which it is generally accepted that their builders designed the monuments with particular intentional vistas or sightlines, perhaps incorporating or sighting across other monuments or natural features (see Renfrew & Bahn, 2001, 397; Bergh 1995; Bradley 2000). Amongst these we may include burial monuments including chambered cairns which are the focus of this assessment. Some scholars (e.g. Bergh 1995) have argued that some monuments have been sited so that sightlines between them would have a particular significance, or that their inter-visibility was a factor in the original selection of their locations. Even single monuments, it has been argued, could have significant relationships with the physical landform. Professor Alexander Thom (1967 & 1971) argued that sightlines projected from stone circles used features on the distant horizon to define precise astronomical orientations. In such instances the sightline between the monument and its horizon is arguably a characteristic of the monument itself. Thus, the positioning of a structure that caused an interruption to that sightline would reduce the information content of the monument by removing or compromising one of its fundamental characteristics. This amounts to a reduction of its information content and in consequence an impact of this type would be a direct impact and would significantly reduce the cultural value of the site or monument.

Impacts on setting, in the context of monuments, can thus give rise to two distinct types of effect. Where a direct designed-in sightline is interrupted, a reduction of the cultural value of the monument or building would occur. On the other hand, alterations to the quality and 'appropriateness' of a monument or building's aesthetic setting would not result in any loss to the inherent cultural value of that monument or building. It should be noted that there is no direct comparison between the loss of cultural value caused by a physical intervention assessed as, for example, 'Low' and an impact on setting assessed as 'Low'. In the former case there is an irretrievable loss of some cultural value whilst in the latter there is, usually, no permanent loss, and such loss as occurs is a reduction in visitor amenity, not in the cultural value of the monument itself. Of the eight monuments discussed in detail this assessment, seven are chambered cairns with the potential to have designed-in sightlines as just described and impacts on their setting could result in loss of cultural value.

The formal and rational recording of the physical parameters of the monument and its surrounding landform, including the observer's emotional response to it, sets out the framework from within which an aesthetic appreciation can be developed. This approach is well established in critical artistic and architectural aesthetics and is formalised in 'Hegel's wheel' (Fernie 1995). The philosopher Georg Wilhelm Friedrich Hegel (1770-1831), in his consideration of a philosophy of art, and in an attempt to avoid the biases of zeitgeist recommended a contextualisation of works of art taking cognisance of criteria like the social, economic, political, historical and technological backgrounds from which the work of art originated.

Figure A13.28 is based on an exemplar from *Art History and its Methods* by Eric Fernie (1995) and illustrates the approach followed in this assessment. Whilst it is not explicitly set out in these terms, this is also the approach followed by ICOMOS's (1999) Burra Charter, in its definition of cultural significance in terms of explicitly stated criteria for which operational guidelines continue to evolve (Guidelines to the Burra Charter: cultural significance, 1988). Similarly it underpins the UNESCO World Heritage Convention. Figure A13.28 depicts an archaeological version of Hegel's wheel, using the criteria of the Burra Charter. The Burra Charter criteria are appropriate for establishing the cultural value of monuments and their settings not least because the scheduling criteria now used by HS (Historic Scotland 2009, Annex 5) embrace this approach. These criteria, albeit

somewhat reorganised, provide a basis for determining cultural value as a preliminary to establishing 'national value' in the formulation of the decision to schedule specific sites and monuments. The cultural significance criteria from the Burra Charter and SHEP 2009 have thus been used in an archaeological version of Fernie's visualisation of Hegel's wheel to explore the issues of the aesthetics of monument settings (Table A13.3 below).

Historic Scotland have traditionally insisted that the impact on the setting of a Scheduled Ancient Monument is not affected by the amenity value of a monument or the frequency with which the monument is visited (Historic Scotland 2009). There is a restricted, technical sense in which this is true, but the reporter at the Clyde PLI (2006) concluded that the scale of impact is clearly related to the extent to which the site is visited. It may be considered, by extension, that if, for example, the setting of a monument experienced some visual impact but was never visited again by human beings, the impact would remain real but unrealised; the net effect of the impact would be irrelevant. Whilst it is accepted that the social/amenity value is not a direct reflection of a monument's inherent cultural value or of its potential appreciation by future observers, it is nevertheless a reflection of the existing interaction between people and place against the baseline of a monument's current setting. As it is people and not physical features that are ultimately affected by changes to the setting of monuments they visit (See Lambrick and Hind 2005) current social values are judged to be relevant when assessing the sensitivity of a monument's setting and the significance of impacts upon it.

Factors from which each monument's cultural value and visual sensitivity has been defined are outlined in Appendix A13.2. Detailed assessments for each monument using these criteria are located in Appendix A13.4.

The criteria used to establish the magnitude of impacts on the settings of monuments have remained unchanged. Table A13.3 shows the revised criteria for assessing significance of impact on setting.

Table A13.3 Significance of the effects of impacts on the setting of cultural heritage features

	Visual Sensitivity of Cultural Heritage Feature			
Impact magnitude	**Negligible**	**Low**	**Moderate**	**High**
High	Minor	Minor	Moderate	Major
Medium	Negligible	Minor	Minor	Moderate
Low	None/Negligible	Negligible	Minor	Minor
Negligible	None	None	Negligible	Minor
The impacts recorded in highlighted cells are 'significant' in terms of the Environmental Works (EIA) (Scotland) Regulations 2000.				

It should be noted that all of the impacts identified on the setting of cultural heritage features are of about 25 years duration and removal of the turbines after their operating lifespan will fully redress the situation, leaving no long-term visual impacts.

A13.5 CHANGES IN BASELINE CONDITIONS

A13.5.1 Historical and archaeological background

Two archaeological sites located within the proposed development area were omitted from the baseline conditions as submitted in the ES, for the reasons given in the next paragraph.

Since submission a further three sites have been entered into the Shetland Sites and Monuments Record and these have also been included in the baseline data.

The omitted sites included a boundary comprised of an earth and stone bank at Sound **(Site 449)** with two sections of dry-stone walling visible to the southeast of the boundary. The site could not be located during survey undertaken in 2005 despite extensive searching (Lynn 2005). The second site comprises a possible cist which was in extreme ruinous form when first recorded at Hill of Sound **(site 450)**. This site like the aforementioned boundary could not be located during field survey in 2005 (Lynn 2005).

The sites added to the Sites and Monuments Recorded following submission of the original ES are a chambered cairn at Hill of Sound **(Site 451)** a possible prehistoric house at Burn of Weisdale **(Site 452)**, and a cairn and cist at Loch of Skellister **(Site 453)**.

Archive research undertaken as part of this addendum has discovered a further five cultural heritage sites relating to post-medieval farming activity. Four of these **(Sites 454-456, 458)** are sheep folds or 'sheep buils' located outwith the major settlements on the lower slopes within the proposed wind farm and demonstrate the use and management of the land or grazing during the 19th century. The management of this land is further demonstrated by the depiction of a 'public road' (**Site 457**) which ran from Kergord to Lamba Water.

The 19th century plans and maps also provide interesting data about place-names showing many subtle variations on extant place names as well as some markedly different place names. For example in Delting we see Loom Shun as 'Lume Shin' and Susetter as 'Sursetter', Burn of Valayrs as 'Burn of Valure' whereas the Hill of Susetter is named 'Castle Hill'.

The consultation of additional 19th century estate maps and plans also demonstrated that many of the stone outcrops and small marker cairns recorded within the area such as the Hag Mark Stone (**Site 341**), Stone of Brecklee (**Site 4**) and Ludowic Stone (**Site 177**) were used in the 19th century (and probably earlier) as boundary markers. For example a plan (SA 6/19) dating to 1856 divides the land in the Kergord quadrant on a *'straight line from the Hag Mark Stone to the Butter Stone'*. As discussed in 13.5.3 (f) in the 2009 ES the land on which the wind farm is proposed has evidently been the subject of dispute of ownership during the 19th century and many of the plans showing the wind farm at the date were drawn up in an attempt to resolve land ownership issues.

A13.5.2 Field Assessment of Scheduled Ancient Monuments

Following the changes in policy and subsequent changes in methodology noted above further assessment of the baseline conditions and settings of the following eight monuments has been undertaken: Laxo (**Site 27**), Hill of Dale (**Site 83**), Graven (**Site 173**) Hayfield (**Site 291**), Crooksetter (**Sites 306 & 307**) and Burravoe (**Site 319**). The immediate setting, wider setting and condition of each monument is described and these matters have been used to inform the judgement made in section A13.7 (b). Photographs of these monuments are located in Appendix A13.1.

Knowe of Bruland Cairn, Laxo

Immediate setting

The immediate setting of the cairn is a grass covered knoll, the top of which is occupied by the cairn.

Wider setting

The cairn is located at the head of a voe surrounded by hills on all sides except seaward. Modern concrete-lined channels drain the hills north of the cairn below the road which is here lined with metal crash barriers. North of the road on higher ground are the remains of post-medieval and early modern stone built farming settlement with the modern buildings of Laxo to the north-west. Land on the lower northern hills is drained improved pasture which gives way to open heather moorland towards the horizon; the horizon to the north is located at a distance of no more than 1 km. A large house dominates the head of the voe north-west of the cairn at the junction of the B9071 and B9075 with low rolling heather hills beyond. The setting from south through to west-south-west features the B9075 with a high tension power line within 100m and Laxo Burn. Beyond this the setting comprises open heather moorland up to a distance of approximately 3 km.

Condition

A modern fence runs over the centre of the monument from south-west to north-east with nine fence posts within the scheduled area. The centre of the cairn has been quarried out and has clearly had a large amount of material removed. The local landowner recalls his father noting that stones from the cairn had been used in the construction of the nearby road. The Historic Scotland warden report of 1999 records a single inactive rabbit burrow in the side of the mound, however the cairn now shows evidence of active rabbit erosion. It is likely that less than 30% of the monument now survives although it is not impossible that the contents of the chamber may be *in situ* and intact. The cultural value of the monument has been significantly reduced by destruction of the chamber and large part of cairn. Some cultural value subsists in the remains of the cairn that persists in particular the possibility that *in situ* deposits survive below the centre.

Hill of Dale, Chambered Cairn

Immediate setting

The cairn is located on a local crest below the summit of the hill which provides an intimate setting for the cairn.

Wider setting

The cairn is set amid eroding peat hags with erosion gulleys up to 1.5 – 2m deep in places. The convex nature of the hill restricts views of the cairn from all directions and with the exception of west-north-west it is not visible from more than 200 m away. Views north-east, east to south-west are extensive but those in the northern circuit are restricted and local. The wider setting comprises open hills which give way to voes and open sea to the north-east.

Views south and south-east are the most extensive available from the cairn. Views north-west through to north in which the nearest turbines are located are dominated by local peat erosion and are likely to have been of less significance for the builders. The cairn is located approximately 0.5 km from the road but access involves a steep climb through eroding peat landscape. A public footpath and stile mark the general route to the cairn but the path and associated access track fade out near the summit and access is restricted to the able bodied and fit.

Condition

The Historic Scotland warden report of 1993 makes reference to two visible chambers in the stone tumble; these were not visible at the time of the AOC survey (January 2010) indicating that some damage has occurred to the cairn in the intervening period. A

probable entrance passage in the south-east is marked by a single upright orthostat. Most of the entrance passage and chamber are covered in stone tumble precluding further assumptions about internal architecture. There is no evidence of a façade. It is estimated that approximately 60% of total monument survives. Active peat erosion is evident throughout the landscape and the cairn appears to be eroding from the peat on its north-east side. The cairn is clearly undergoing damage from visitors and the possible entrance in particular show obvious signs of recent disturbance.

Graven Chambered Cairn

Immediate setting

The immediate setting is close and intimate. The cairn is located in the shoulder of a steep concave hill and is well bedded into the slope. It is likely that a platform has been constructed for this monument by cutting back into the hill slope. The convex shape of the hill means that the monument is only visible locally and difficult to locate at a distance of greater than 200m

Wider setting

The cairn commands distant prospects from east to north to west across a complex industrial landscape featuring an airport, oil terminal and busy harbour. The local horizon to south and west is 200 m away at most thus the wider setting is restricted in that direction. The cairn is located within 0.5km of a busy industrial harbour and a small airport. Aeroplanes and helicopters land frequently (up to 70 movements per day). Several large tankers and smaller vessels were noted moving around the harbour. Steam and flare offs from the oil plant also feature.

The cairn is just visible on the horizon on the approach to Graven from north-east on the B9076. The cairn is visible for approximately 1km along the stretch of road that runs closest to the voe adding further weight to the hypothesis that the cairn was designed to be viewed from the sea. Owing to its low height it now survives as an insignificant feature difficult to locate in the landscape, however it may once have been visible from some distance and like other cairns in the area, it is likely to have been visible from the sea.

Condition

The cairn as it now survives is a circular tumble of stones and is approximately 10 m in diameter. The cairn is somewhat denuded but part of the chamber is still visible and the major architectural features survive. Approximately 80% of the visible monument now survives. The original chamber is rectangular in shape and located slightly south of the centre of the cairn. It measures circa 1.5m long by 1 m wide and deep. On the west side of the chamber a large slab aligned north-south is visible. The east side of chamber curves back in a knuckle with *in situ* stone slabs. Collapse of the chamber at the north side might indicate that the chamber continued to the north. The second hollow to the south appears to be superficial and may have been caused by people trying to locate the entrance. It is not possible to identify unambiguously the entrance passage and therefore the potential for a designed-in sightline is not presently recoverable. It is, however, unlikely that the entrance orientates to the south as the local horizon is too close.

Hayfield Chambered Cairn

Immediate setting

The cairn is located in a natural dip on a low rounded knoll reaching towards the end of the voe and is surrounded by low rounded undulating hills which comprise the immediate

setting of the cairn. At its highest point the cairn is 1.5m above the knoll and averages c. 1m high.

Wider setting

The wider setting comprises the voe and seascape beyond.

Condition

It is difficult to detect the original shape of this cairn; it appears to be circular with a squared off front, possibly D-shaped or 'heel-shaped'. The cairn is partly turf covered with some visible stones and kerb and a façade is detectable. The central depression has been excavated and stones rolled in although evidence for a central chamber and two side chambers is still visible. The interior has been significantly disturbed and the mound has c. 30 rabbit holes and is serving as a rabbit warren. The upper part of the monument is thus in very poor condition but it is possible that deposits lying in the lower chambers may be relatively undisturbed.

Burravoe Chambered Cairn

Immediate setting

The remains are located on a south-west facing slope below the hill summit which continues to rise behind the cairns to the north and east. The remains are located in an area of fenced-off pasture surrounded by evidence for later settlement and cultivation, including prehistoric field walls and plantiecrubs; and a modern concrete sheep fank lies within 10m of the monument.

Wider setting

The remains command extensive views across a landscape of open broken peat and heather moorland hills from east through to south-west towards the summits of Riding Hill and Duddin Hill. Views to the north are restricted by the summit of the knoll and dominated by improved pasture. Views south-west through to north-west look out over prehistoric settlement and cultivation remains in the foreground with modern settlements of Burravoe and Brae in mid ground with views over Busta Voe to the settlement of Busta beyond.

Condition

The basic footprints of the monuments are probably still recoverable with some confidence and comprise a heel-shaped chambered cairn and possible associated circular cairn. The circular cairn is very small and does not appear to have held a chamber. There is a possibility that the smaller cairn is a Bronze Age burial cairn or round house manufactured from the stones of the Neolithic cairn. The extensive surrounding evidence for later settlement in the vicinity of this cairn lends support to the premise that the round cairn constitutes a later addition to the monument. Little of the three-dimensional structure of either monument survives, and they are in near terminal condition and still undergoing destructive erosion, mainly from animal trample.

Crooksetter south-east

Immediate setting

The cairn is set just below the edge of an escarpment on an outcrop of white quartz which rises behind the cairn to the south towards the Sullom Voe Monument.

Wider setting

The wider setting comprises a basin from east to west with heather moorland and distant views of hills. Modern development dominates the wider setting to the south. Aesthetically the setting of this monument would have been beautiful but the encroachment and then erosion of peat has created a wet messy foreground. Modern plant and equipment all conspire to alter the current aesthetic appeal.

Condition

The cairn has seen significant disturbance to its centre and is too occluded to infer the location of an entrance passage or any detail of internal architecture. It is not possible to determine the original height of the cairn which has been heightened in relatively recent times by the addition of a modern walkers' cairn which precludes assumptions as to how far it was visible across the landscape.

Crooksetter north-west

Immediate setting

The cairn is set astride a ridge that rises 90m from the sea (north to south). The immediate setting comprises a local knoll on the ridge below the summit. The ridge continues to rise to the south-east beyond the cairn. The skyline is visible in all directions.

Wider setting

The wider setting comprises open views in all directions except to the south-east where the summit of the hill behind it restricts views to a few hundred metres. From north-west through west to south-west Sullom Voe is visible in the near ground and dominates the field of view. Scatsta airport is visible somewhat more distantly. Views to the north look out over broken peatlands towards the entrance to Sullom Voe. Views east look over the sea with land visible into the far distance.

Condition

Approximately 60% of the external façade is visible and of the internal facing some 50% is visible with some stones of the chamber discernable. The external north kerb is also identifiable as is the internal kerb revetment. There has been significant disturbance to the centre and a walkers' cairn has been erected on top of the cairn. It is possible that the internal stones of the walkers' cairn cover the uprights of a chamber. Some erosion of peat around the cairn is also evident.

Skeo of Gossaford

Immediate setting

The cairn is located on top of a local eminence below the summit of hill which comprises its immediate setting.

Wider setting

The wider setting comprises open views north-south. Views south-west through to north-west are constrained by the hill which rises behind it. Extensive views across the landscape of hills with Busta House Hotel to the east and the modern complex settlement of Burra across Busta Voe beyond this. The cairn is located below the summit of a hill whose convex nature prevents visibility in the landscape from approaches greater than 150m distant. The cairn is, however, visible from surrounding hilltops.

Condition

This monument survives in a poor condition with evidence for significant past disturbance. This cairn contains no evidence for large stones that would be typical of a chambered cairn; most stones are less than 20cm in diameter and they would not be big enough to achieve corbelling. The diameter of the cairn is larger than most chambered cairns. This is a multiple cist cairn of Bronze Age date not a chambered cairn of Neolithic date. Bronze Age cairns do not usually possess an apparent or preferred axis. It is not possible to determine the original height of the cairn which precludes assumptions about how far it may have visible across the landscape. What is clear is that it is now in a near terminal state.

With the exception of the changes in the baseline noted above, the baseline condition as described in Chapter 13 of the 2009 ES remains unchanged.

A13.6 CHANGES IN THE PROPOSED WIND FARM

Please see Chapter A4 for full details of changes to the proposed wind farm and Appendix A4.6/7 for details of the overall design process and the recent revisions process.

The total number of turbines proposed has been reduced from 150 to 127. This amounts to a reduction of about 15%. The total length of tracks has been reduced and about 14 km of track has been removed. The reduction in the total footprint of the development would amount to a reduction in the area subject to groundbreaking works which amounts to a reduction in the total area of archaeological deposits potentially disturbed by the wind farm.

The removal of turbines reduces the overall predicted impact on the setting of protected heritage assets in the vicinity of the proposed wind farm. The removal of turbines D1, D2 and D3 on heritage grounds would amount to the reduction of a Major adverse significant impact on the setting of Graven cairn to an impact of Minor significance which is not significant in terms of EIA regulations.

A13.7 CHANGES IN THE IMPACT ASSESSMENT

(a) **Direct Impact**

The deletion of the access track at Newing, in South Nesting, would remove the predicted impact on **Site 82** (a horizontal mill at Newing) and there would be no impact on this site.

(b) **Indirect Impact**

A summary of changes to the indirect impacts on the settings of protected heritage assets is provided in Appendix A13.4. A discussion of changes to the impact assessment for the eight monuments which formed the focus of the Historic Scotland objection is provided below. The detailed assessment is located in Appendix A13.4.

Laxo Cairn

Given the current poor condition of the monument and the fact that it is located within a relatively intimate setting from which views towards the proposed wind farm are not perceived as significant the visual sensitivity of this monument is judged to be Low. Wirelines (Figure A13.27.1, Site No. 27) indicate that a total of 22 turbines would be visible from Laxo, 14 of which would be seen to hub height. These turbines would appear

above the low ridge to the south-west and would be a prominent feature in the local landscape. The magnitude of impact on this monument is judged to be Moderate. The positioning of turbines in the landscape would not reduce the cultural value of this monument. The turbines would not interrupt views out to the voe which appear to be most significant to the setting of the cairn. The placement of turbines in this location would not significantly affect the ability of this and future generations to understand this monument in its setting and thus the significance of impact on the setting of this monument is judged to *Minor*.

Hill of Dale Chambered Cairn

The Hill of Dale is located below the crest of a hill within an eroding peat landscape and commands extensive views south and east across the landscape. The visual sensitivity of the Hill of Dale is judged to be low. Wirelines (Figure A13.27.1, Site No. 83) indicate that seven turbines would appear above the low ridge in the west-north-west beyond the immediate landscape setting of eroding peat. The nearest of these turbines (D9) is located at 0.75 km and would appear as a prominent feature in the landscape. Owing to the proximity of these turbines the magnitude of impact is judged to be high. The turbines would not interrupt any designed-in sightlines and their presence in this landscape would not significantly affect our ability to understand and appreciate the significance and setting of this cairn and thus the significance of impact on the setting of this monument is judged to be *Minor*.

Graven

Graven survives in a good condition below the crest of a hill. Whilst its immediate setting is intimate it is visible from some distance across the landscape and commands extensive views over Scatsta and the Sullom Voe oil terminal. With the removal of turbines D1, D2 and D3 the nearest turbine is located at a distance of 1.4 km. Wirelines (Figure A13.27.3, Site No. 173) indicate that 14 turbines would be visible at intermediate distance and the magnitude of impact is judged to be moderate. The turbines would not significantly affect the ability of this and future generations to understand the significance of this monument in its landscape setting and thus the significance of impact on the setting of this monument is judged to be *Minor*.

Hayfield

The cairn is not located on highest point of the knoll and appears to have been sited to exploit the natural landform so that it appears as a prominent feature when approached from the north, it survives in relatively poor condition with evidence for disturbance to the interior and significant rabbit erosion. Hayfield is judged to be of low visual sensitivity. Wirelines (Figure A13.27.3, Site No. 291) show that 30 turbines would be visible from this location and eight of these turbines (K48, K55, K56, K67, K68, K70, K71 and K72) would appear as an intrusive presence in a landscape hitherto unmarked by human intervention; this constitutes a high magnitude of impact. On the assumption that the entrance to the cairn is in the south-east, the wind farm has the potential to interrupt a designed-in sightline that was arguably aligned with the rising of the mid summer sun. However, it would not be possible to ascertain the alignment of the passage without further investigation. The current condition of the monument makes any impact on designed-in sightlines a theoretical prospect and the positioning of the turbines in this landscape is unlikely to reduce significantly our understanding of the setting of the surviving remains. The significance of impact is judged to be *Minor*.

Burravoe

Wirelines (Figure A13.27.5, Site No. 319) indicate that eight turbines (D26 D27, D28, D29, D30, D31, D32, and D33) would be clearly visible in views east from the monuments at Burravoe and the magnitude of impact would be high. The heel-shaped cairn is oriented away from the wind farm and towards the settlement of Brae. The round cairn has no apparent preferred orientation and thus views towards the wind farm are no more or less significant than others. The condition of the monuments is currently so poor that they are already overwhelmed by modern elements of the landscape such as the modern sheep fanks and fences; it is difficult to see how alterations to the wider setting could significantly alter the already minimal ability to understand these monuments in their setting and they are judged to be of low visual sensitivity. The significance of impact is judged to be *Minor*.

Crooksetter south-east

Crooksetter south-east survives in a moderate condition with evidence for significant disturbance to its centre. The views from the cairn are most extensive to the south and west overlooking the industrial complex at Sullom Voe. The visual sensitivity of Crooksetter south-east is judged to be moderate. The nearest turbine would be over 3.8km distant and the predicted magnitude of impact is Low (See also Figure A13.27.6 Site 327). Given the proximity of Sullom Voe and the distance to the proposed wind farm it is unlikely that the presence of the turbines in the landscape would materially affect our ability to understand and appreciate this monument in its setting and the significance of impact is judged to be *Minor*.

Crooksetter north-west

Crooksetter north-west survives in relatively good condition although it has evidently been subject to some internal disturbance, and a walkers' cairn has been constructed on the top. This cairn is visible across the landscape and appears to have been sited to exploit the extensive views from the hill as well as to be seen from long distances. The cairn also overlooks the industrial complex at Sullom Voe. The visual sensitivity of Crooksetter north-west is judged to be moderate. Views towards Crooksetter south-east from this cairn would feature the wind farm in the backdrop. The wind farm would not be visible in the direct line of sight towards Crooksetter south-east but would be seen within 10-20° albeit at some distance. The nearest turbine would be over 4 km distant and the wind farm would be visible at an intermediate distance (see Figure A13.27.6, Site 328) amongst other vertical elements in the landscape including the remains of the WWII station at Swinster and several telecommunication masts. Thus, the magnitude of impact is judged to be low. Given the proximity of Sullom Voe and the distance to the proposed wind farm it is unlikely that the presence of the turbines in the landscape would materially affect our ability to understand and appreciate this monument in its setting and the significance of impact is judged to be *Minor*.

Skeo of Gossaford

Skeo of Gossaford survives in a very poor condition with evidence for significant past disturbance. This is a Bronze Age multiple cist cairn rather than a chambered cairn and as such the monument has no apparent preferred axis. The visual sensitivity of Skeo of Gossaford is judged to be low. The nearest turbine would be over 4km distant and the magnitude of impact is judged to be low (see also Figure A13.27.5). The distances involved and the complexity of intervening landscape are such that the inclusion of these turbines is unlikely to intrude significantly on the setting of this monument and the significance of impact is judged to be *Negligible*.

A reassessment of impacts on monuments judged in the 2009 ES to have undergone a significant impact has been undertaken with references to the changes in layout and in light of changes in the method of impact assessment described in sections A13.3 and A13.4 above. This reassessment has resulted in a revised significance of impact assessment. In addition to the eight monuments discussed in detail above, five monuments **(sites 107, 140, 141, 301 and 309**) previously judged to be subject to impacts of Major significance are now judged to be subject to impacts of Minor significance.

Nine monuments (**Sites 306, 321, 368, 376, 383, 386, 388, 421, 428**) previously judged to be subject to impacts of moderate significance are now judged to be subject to impacts of minor significance. Two monuments (**Sites 145 and 307**) previously judged to be subject to impacts of Moderate significance in the ES are now judged to be subject to impacts of Negligible significance.

A13.8 CHANGES IN MITIGATION

A13.8.1 Direct Impacts

Appendix A13.5 provides details regarding a programme of archaeological works designed in consultation with the Shetland Regional Archaeologist to investigate the potential for archaeological sites within the development area and allow for the preservation or recording of any significant archaeological remains.

The necessary archaeological works would consist of seven components:

- Archaeological Clerk of Works.
- Walkover survey to inform micro-siting of turbines and tracks in sensitive areas
- Demarcation of Archaeologically Sensitive Areas
- Geophysical survey;
- Archaeological trial trenching;
- Archaeological watching brief;
- Archive deposition.

An Archaeological Clerk of Works would be appointed to oversee the agreed programme of archaeological works. The creation of this role reflects the need to co-ordinate a range of archaeological works in a large and complex site and to ensure that the developer meets its obligations to minimise impacts on the archaeological resource.

Direct impacts on known sites would be mitigated primarily through avoidance. Minor adjustments in the turbine and track layout (following walkover survey), combined with appropriate use of protective fencing (demarcation of archaeologically sensitive areas) would mitigate against potential impacts.

Table A13.6 details *known* sites within 100m of the proposed wind farm that would be fenced off during construction works:

Table A13.4: Summary of required mitigation measures for known archaeological sites and monuments

Site No	Site Name	Type	Potential Impact	Mitigation
9	South Filla Runnie	Military remains	Located in the centre of proposed borrow pit search area.	Erection of semi-permanent fencing around perimeter of site and micro-siting of borrow pit.
10	Mossy Hill	WW2 Military Remains	Located on edge of proposed borrow pit search area.	Erection of semi-permanent fencing around perimeter of site and micro-siting of borrow pit.
341	Hag Mark Stone	Stone	Located within 77 m of proposed access track.	Erection of semi-permanent fencing around perimeter of site
347	Maa Water	Field system	Located within 67 m of proposed access track.	Erection of semi-permanent fencing around perimeter of site
349	Scalla Field	Marker cairn	Located within 73 m of proposed access track	Erection of semi-permanent fencing around perimeter of site
445	West Kame	Mound	Located immediately adjacent to a proposed access track.	Erection of semi-permanent fencing around perimeter of site and micro-siting of track
447	Laxo Burn	Possible prehistoric settlement	Located immediately adjacent to a proposed access track. Risk of damage during construction of access track.	Erection of semi-permanent fencing around perimeter of site and micro-siting of track
448	Catfirth	Linen Industry Landscape	A proposed access track runs through this landscape. A proposed anemometer is also in the northwest section of the landscape	Erection of semi-permanent fencing around upstanding elements of this landscape. Micro-siting of access track and anemometer. Excavation and recording of landscape prior to any disturbance
450	Hill of	Cist	Located within 50 m of a proposed access track and borrow pit to the east and with 53 m of an anemometer to the west	Erection of semi-permanent fencing around perimeter of site
457	Kergord	Road	A proposed access track crosses the line of this former road	Excavation and recording of road prior to any disturbance.

Direct impacts on unrecorded sites would be mitigated through a programme of archaeological evaluation (geophysical survey and trial trenching) and monitoring of ground works (archaeological watching brief).

In addition, whilst there will be no direct impact on potential buried archaeological remains by the proposed floating roads, it is recognised that the effectiveness of methods of prospecting for buried archaeological remains within deep peat are unclear. In recognition of this ambiguity, it is proposed that a programme of reconnaissance coring in areas of deep peat (where floating roads are proposed) is undertaken to test the effectiveness of geoarchaeological coring as a prospection technique.

Appendix A14.6, the Site Environmental Management Plan, provides details of the archaeological management aspects related to the excavation and reinstatement of materials on site.

A13.8.2 Indirect Impacts

The Guidelines for Landscape and Visual Assessment indicate that the purpose of mitigation is to reduce the impacts by '*...employing strategies of avoidance, remediation and compensation*.' In the design and redesign of the wind farm configuration and precise placement of individual turbines, Viking Energy Partnership undertook an iterative exercise so as to minimise their visual impacts. This process was described in the 2009 ES and is updated in Appendix A4.6/7.

The re-assessment undertaken following Historic Scotland's consultation response has highlighted the impacts of specific turbines on the ability to understand monuments in their current landscape setting. Turbines D1, D2 and D3 have been identified as having a potentially unacceptable impact on the setting of the monument of Graven, and it is probable that their placement in this location in the landscape would affect this monument to an unacceptable degree. These turbines have thus been removed.

Each of the remaining 32 turbines identified by Historic Scotland for relocation or removal has been considered with regards to its impact on the ability to understand and appreciate the significance of the monuments in their settings. The process is discussed in detail in Section A13.7 above. The possibilities of relocating turbines D32 and D9 to reduce their potential impacts on the settings of Burravoe and Hill of Dale respectively were considered in detail. Ecological and ornithological constraints do not allow for the relocation of either of these turbines without causing significant impacts elsewhere.

We have concluded that the turbines would be a significant presence in the landscape when viewed from these monuments. However, the monuments are in poor condition, are some distance from the turbines, and are located at the heads of voes overlooking extensive land and seascapes which would be unaffected by the turbines. For these reasons we consider that the erection of these turbines would not significantly affect the ability of this and future generations to understand the monuments in their current settings.

As SHEP (2009) makes clear (paragraphs .1.50-161) the Scottish Government is committed to promoting greater access to and understanding of the nation's heritage. The number of visitors accessing the cairns which have formed the focus of this report is in general low and whilst it is unlikely that these sites would ever be foci of mass visitation, visitor numbers could be increased significantly without detriment to the monuments. Low visitor numbers may have resulted from the fact that the cairns are generally hard to understand for the lay visitor and professional alike. SHEP also emphasises the need for enhanced technical, professional and academic knowledge of heritage sites and monuments

(paragraphs 1.50-1.61). Access for enjoyment and education is also an ambition of the Scottish Government (paragraphs 1.52-1.54) which is committed to seeking out new ways of promoting and enabling access and understanding, for example by community involvement and the development of cultural tourism routes (paragraphs .1.54). The value to local communities of the potential contribution of tourism and of promoting, supporting and regenerating communities is acknowledged, as is the need to make adequate provision for the sustainable management of the historic environment (SHEP 2009, paragraphs 1.60-162).

The proposed wind farm, if approved, would alter the context in which the heritage of the Central Mainland is viewed. Viking Energy proposes to undertake a major heritage project that would allow people to experience, enjoy and connect with their heritage in harmony with policies expressed in SHEP (2009) and outlined above. The aim is to work with the local community to design and implement a heritage strategy that would increase the understanding and raise the profile of the heritage of Central Mainland Shetland, thus providing mitigation by compensation for alterations to the context in which heritage is viewed. It is intended that this project would make a positive and lasting contribution to the community and heritage environment and help future projects to flourish. The details of the heritage strategy are being negotiated and developed with major stakeholders and are summarised below. A detailed outline of the strategy is provided in Appendix A13.6.

Community survey and excavation programme

The aim of this programme is to engage the community in the use of a variety of survey and excavation techniques to create a high quality record of the Neolithic monuments in Central Mainland Shetland. The programme would focus on obtaining a better understanding of the Neolithic tombs, houses and quarries in the vicinity of the proposed wind farm and placing them in their environmental context. Several Neolithic monuments located in the vicinity of the proposed wind farm survive in poor condition (see above) and would benefit from further research, repair and consolidation; they would form the focus of the project. It is proposed that this programme is undertaken with the aid of a steering group of internationally recognised academics who would act to ensure that the research is of the highest quality and disseminated to a wide audience.

Community schools programme and touring regional exhibition

The aim of the schools programme is to engage the young people of Shetland with their heritage through participation in excavation, survey and research. It is proposed to link the programme into the curriculum through the production of 'teacher's packs' and displays of the results of research within schools, local community halls and other suitable locations.

Community archive project

The aim of the archive project is to link the community survey and excavation programme with the historical record thus providing an opportunity for local communities to investigate the more recent heritage of Central Mainland Shetland. The archive project would also aim to investigate how the presence of Neolithic monuments in the landscape have been perceived and understood in the past and how they are perceived by present generations.

Improved access to heritage monuments

As part of the survey and research programme, consideration would be given to how the Neolithic monuments could be better accessed, interpreted and presented. This would include providing further information about each of the monuments, possibly in the form

of on-site interpretation panels and off-sited media such as websites, television programmes and tourist publications. It is anticipated that the proposed high profile Neolithic Shetland research programme would generate media and public interest, and the potential for devising cultural tourism routes would be explored.

A13.9 SUMMARY AND CONCLUSIONS

- There would be no direct impacts on known archaeological monuments by the proposed wind farm.
- The undertaking of the mitigation measures outlined above before, during and after construction of the proposed wind farm would reduce the overall residual effects on known archaeology to "Minor".
- The implementation of the mitigation plan outlined above and detailed in Appendix A13.5 would ensure the appropriate protection and investigation of hitherto unknown archaeological remains.
- There would nevertheless be a significant alteration of the overall context within which the heritage of the Central Mainland is viewed but there would be no significant impacts on the settings of individual nationally important monuments.
- A heritage strategy designed to investigate the Neolithic monuments of the Central Mainland has been outlined and described in Appendix A13.6.
- There would be no significant, irreversible impacts on cultural heritage associated with the Viking Wind Farm.

A13.10 REFERENCES

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RHP3927 Plan of amended marches of Delting Scattald. 1872

RHP3928 Tracing plan of Delting Scattald, showing alleged marches. 1870

RHP5570 Plan of Olnafirth south of the Voe and parts of Weisdale, Nesting and Lunnasting parishes, showing the scattalds. 1800

RHP14999 Photostat copy of plan of Collafirth and Lunnasting. [Late 19th century]

RHP49413 Photocopy of Ordnance Survey 6 inch plan (Shetland, XXXVII, XXXVIII) marked to show scattalds of parish of Nesting. 1879

RHP3924 Plan of the Commonty in the parish of Delting (n. 95). 1873

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RHP3926 Plan showing adjusted marches in the division of Delting Scattald.1871

RHP3927 Plan of amended marches of Delting Scattald. 1872

RHP3928 Tracing plan of Delting Scattald, showing alleged marches. 1870

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RHP5570 Plan of Olnafirth south of the Voe and parts of Weisdale, Nesting and Lunnasting parishes, showing the scattalds. 1800

RHP14999 Photostat copy of plan of Collafirth and Lunnasting. [Late 19th century]

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RHP49408 Photocopy of plan of scattald of North Olnafirth in parish of Delting 1870

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RHP3971 Plan of the proposed division of Scattald of Aithsting.1876

RHP3972 Plan of Aithsting Scattald relating to a valuation thereof. 1875

RHP3973 Plan of the Scattald of Aithsting. 1876

RHP3974 Bound sketch plans (3) relating to parts of Aithsting Scattald.

SA6/13 Manuscript plan of division of the Scattald of Aithsting, Shetland. 8th March 1877

SA6/19 Lithographed map of the Survey of the Scattald or Commonty of Weisdale, Zetland, undated. Circa 1856.

SA6/33 Manuscript plan showing parish and scattald divisions between Delting and Lunnasting. Undated

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SA6/74 Manuscript plan of Crown, Nesting

SA6/76 Manuscript plan of the scattalds in the parish of Nesting 1879

SA6/77 Lithographed plan of the communities in the Parish of Delting. 1875

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