

## **Buckies Hill, Halkirk, Caithness Proposed Wind Farm**

### **Archaeological Walkover Survey and Cultural Heritage Impact Assessment**



## Buckies Hill, Halkirk, Caithness – Proposed Wind Farm

Client	<b>Green Cat Renewables</b>
National Grid Reference	<b>ND 1110 6252 (centred)</b>
Planning ref	<b>12/04289/SCOP</b>
Site Code	<b>BWF14</b>
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## BUCKIES HILL WIND FARM

### Archaeological Walkover Survey and Cultural Heritage Impact Assessment

#### Summary

*An archaeological walkover survey and cultural heritage impact assessment was carried out on the 11<sup>th</sup> of February 2014 on behalf of Green Cat Renewables in advance of the installation of five 0.9mW wind turbines on Buckies Hill, southwest of Buckies Farm, Halkirk, Caithness. The work was undertaken to assess the nature and extent of any archaeological and historical sites likely to be directly and indirectly affected by the proposal for new wind turbines and an access road. This study will inform recommendations for the protection and management of archaeological and heritage sites within the development area and within the surrounding landscape.*

*Five new archaeological sites comprising three field dykes, a track and one possible structure were recorded during the walkover survey. Two slab-built dykes are likely to be directly impacted by the development. In the surrounding landscape, there are numerous scheduled monuments, five of which were visited during the landscape survey. The cultural heritage assessment has included a review of the Post Medieval and Prehistoric sites within 2km of the proposed development area in addition to a review of all scheduled monuments within a 10km radius of the development. The study was conducted in order to assess the indirect impacts on the cultural heritage in the landscape. It has concluded that while the five new turbines would contribute to the cumulative impact of increasing number of wind farms on the appearance of this open and highly visible archaeological landscape, the intervisibility between clusters of monuments would be minorly impacted.*

#### 1.0 Introduction

Cultural heritage is represented by a wide range of sites and features, which result from past human use of the landscape. These include buildings still in use, ruinous yet upstanding structures, buried archaeological remains and artefact findspots. Cultural heritage sites also include areas of cultivation, landscaped gardens, field boundaries, industrial sites and shooting structures.

An archaeological walkover survey and cultural heritage impact assessment was carried out in advance of development of a site for a small wind farm at Buckies Hill (centred on ND 1110 6252), located northwest of Halkirk, Caithness on behalf of Green Cat Renewables. The work was requested by the Highland Council Historic Environment Team (HET) and Historic Scotland in 2012 during the consultation stage of planning as the proposed location for the wind farm is situated at the centre of an open landscape rich in prehistoric and Post Medieval sites. While the direct impact on cultural heritage sites was assessed, the indirect impacts of the proposed wind farm on numerous Scheduled Monuments (SMs) were also studied.

Five previously unrecorded archaeological sites were recorded in the development site during the walkover survey. Of the three dykes, one turf/stone structure and one relic track identified, two dykes would be directly impacted by the development.

Five Scheduled Monument sites were also visited during the fieldwork in order to assess the indirect visual impacts of the development on the archaeology of the landscape. Wirelines and photomontages of the proposed wind farm from seven SMs were also generated. The indirect impact on all cultural heritage sites within 2km and all scheduled monuments within 10km of the proposed wind farm site were included in the study. Due to the nature of the

encompassing landscape, which comprises open, gently sloping ground, it was found during the study that the new turbines would unavoidably have a visual impact on the setting of the cultural heritage in the landscape. It was found that the visual impact on a group of three brochs to the south and southwest of Buckies Hill and a group of four chambered cairns on Sordale would be the most significant, whilst a chapel site would be affected to a slightly lesser degree. The proposed turbines were also found to be visible from the majority of farmsteads and other archaeological sites within 2km of the proposed site, but were found not to affect the intervisibility between sites.

## 2.0 Site Location

The proposed wind farm site is centred on grid reference ND on Buckies Hill, approximately 3.5km from Halkirk, located in the parish of Latheron in Caithness (Figure 1). It is situated approximately 3.5km northwest of Halkirk and 4.5km south of Thurso near the northeast coast of Scotland. Five 0.9mW turbines at a height of 67m are proposed to be erected on Buckies Hill, a small hill situated in open farmland between farmsteads at Buckies, Aimster, Calder and Skinet on the southwest side of the River Thurso. Approximately 1.8km of access road is proposed as part of the wind farm development. This will run west-southwest from the B874 road southeast of Aimster to the summit of Buckies Hill. There are twelve existing, consented or proposed wind farm developments within a 20km radius of the site, three of which were visibly noted during the present impact assessment. A large spoil mound from a quarry near Achscrabster was also visibly noted during the fieldwork (Plate 1).

The underlying geology of the site is generally Middle Old Red Sandstone comprising conglomerate, sandstone, mudstone and siltstone underlying later glacial moraine deposits<sup>1</sup>. The proposed wind farm site is located along the northwest half of the top of Buckies Hill (110-122m OD) in an area of peat moorland under deer grasses and heather. The area proposed for development comprises undeveloped/uncultivated ground overlooking cultivated fields at the base of the hill.



Plate 1 Looking WNW from the west side of the proposed development site: large spoil mound from Achscrabster quarry and existing wind farm at Baillie visible in the distance

<sup>1</sup> BGS 2014

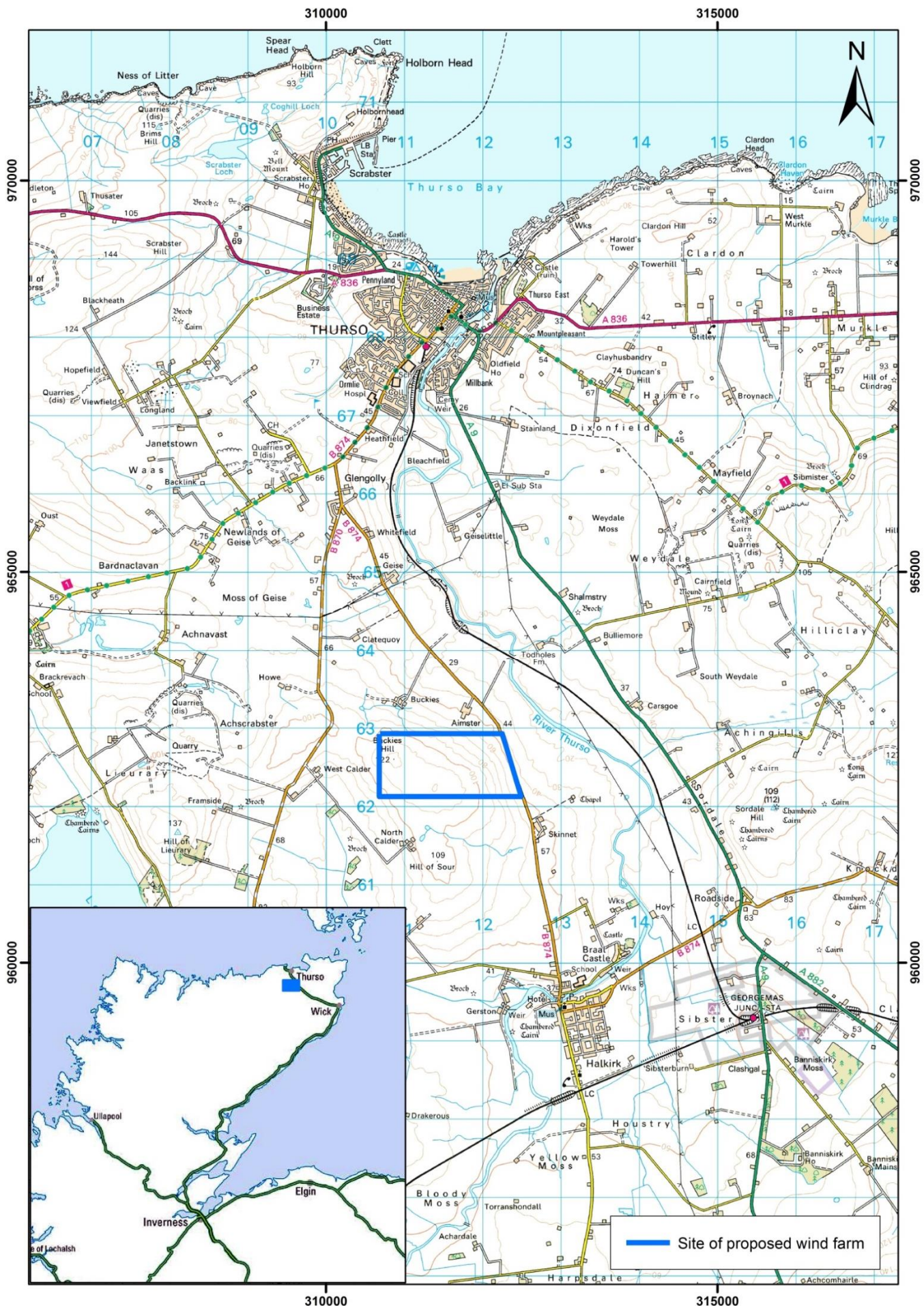


Figure 1 Location of the proposed wind farm at Buckies Hill. Ordnance Survey © Crown Copyright 2014. All rights reserved. Licence number 100022432

### 3.0 Archaeological and Historical Background

Buckies Hill is situated on the west side of the River Thurso in the parish of Halkirk in Caithness. The area is rich in prehistoric settlement sites and monuments scattered across the open moorland with Post Medieval farmsteads and pastureland surrounding the low hills. Within 2km to the south and southwest of Buckies Hill, there are three Iron Age broch sites and many more brochs and hut circles are in the wider landscape. There are at least four prehistoric cairns, which appear to be burial monuments, 1.5km to the northwest at Achscrabster along with four prehistoric chambered cairns 4km to the east on Sordale Hill with many more in the landscape. The extensive presence of prehistoric archaeological monuments in this area is impressive.

In the mid-17<sup>th</sup> century, notable settlement was recorded to the north and south sides of Buckies Hill. Settlement and cultivation increased up to the mid-19<sup>th</sup> century in the area with increasing numbers of crofts being occupied. By the mid-late 19<sup>th</sup> century, Buckies Hill appears to have been divided into grazings for the small farms of Buckies, Aimster, West Calder, North Calder and Skinnet. The land formed part of the territory owned by Sinclair of Dunbeath, who initiated improvements in the area's agricultural methods. Such methods included drainage, field enclosure and crop rotation alongside the introduction of large-scape sheep grazing which displaced many tenants to smaller land holdings<sup>2</sup>. The *John O'Groat Journal* even reported on one such improvement measure. On 11 July 1845, it was recorded that contractors from Thurso were planning to erect a stone wall between Scots Calder estate and Aimster, Buckies and Howe farms<sup>3</sup>. Caithness is known for its ready source of slab-like stone with Halkirk being a particularly good location to find this natural resource.

### 4.0 Methodology

#### 4.1 Aims and Objectives

The following sources provide guidance on the management and protection of cultural heritage sites:

- *Our Place in Time: The Historic Environment Strategy for Scotland*, The Scottish Government, 2014
- *Standards for Archaeological Work*, Highland Council Historic Environment Team, 2012
- *Planning Advice Note 2/2011 (PAN 2/2011)*, The Scottish Government, 2011
- *Managing Change in the Historic Environment: Setting*, Historic Scotland, 2010
- *Scottish Planning Policy*, The Scottish Government, 2010

The overall aim of the fieldwork and impact assessment was to identify and record any known and unknown archaeological or historical sites and features that might be affected by the construction of the wind farm development and to assess the indirect effects on previously recorded archaeological sites in the surrounding landscape. This would enable informed mitigation measures and recommendations to be proposed to ensure that the value of the cultural heritage would not be compromised by the erection of five 67m-high wind turbines at Buckies Hill.

<sup>2</sup> Am Baile 2014

<sup>3</sup> *Ibid*



## 4.2 Desk-based Assessment of the Development Area

A desk-based assessment was conducted prior to commencement of the field survey in order to assess the archaeological potential of the area based on previously recorded sites and any historical documentation. There were no previously recorded archaeological sites within the development area, although the historical maps for the site suggested that 19<sup>th</sup> century field boundary dykes crossed the area.

A search was made of all relevant records, including:

- National Monuments Record of Scotland (NMRS)
- Highland Council Historic Environment Record (HHER)
- National Library of Scotland Mapping
- Aerial imagery from Bing Maps
- Royal Commission on the Ancient and Historical Monuments of Scotland's (RCAHMS') National Collection of Aerial Photography (NCAP)
- Historic Scotland's database of Listed Buildings, Scheduled Monuments, Gardens and Designed Landscapes, Conservation Areas, Inventory Battlefields and World Heritages Sites

## 4.3 Archaeological Walkover Survey

The landscape around the proposed access route and turbine locations was walked over and surveyed on the 11th of February 2014. A corridor of approximately 300-350m around the access track and proposed turbine sites site was surveyed. Five Scheduled Monuments, which were highlighted during consultation, were also visited during the survey in order to conduct a landscape assessment. The weather for the survey day was partly cloudy with occasional squalls and wet ground conditions. The vegetation comprised heather, deer grasses and rushes.

Archaeological sites and on-site landscape views were recorded using high-resolution digital photography. Five previously unknown archaeological sites in the development area were recorded using a handheld Trimble Geo-XR Rover capable of decimetre accuracy.

Survey and recording methods from the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) were employed and all work was conducted in strict adherence to the *Institute for Archaeologists Code of Conduct*<sup>4</sup>.

## 4.4 Assessment of Cultural Heritage Sites

An area covering a 10km radius around the proposed wind farm was also studied as part of the cultural heritage assessment and in advance of the field survey. All archaeological or historical sites within 2km and all Scheduled Monuments within 10km were reviewed.

Analysis of a computer model of the proposed wind turbines and existing landform (DTM) to produce a zone of theoretical visibility (ZTV) was used to assess what the potential indirect visual impact of the wind turbines may be from the cultural heritage sites within the study area. In order to further assist with the assessment, photomontages and wirelines were taken from the Scheduled Monuments of Concern (Table 2).

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<sup>4</sup> Institute for Archaeologists 2012

## 5.0 Results of the Study

### 5.1 Desk-based Assessment

The desk-based assessment noted settlement in the area around Buckies Hill as early as the mid-17<sup>th</sup> century. The only sites depicted or recorded within the proposed development area were field boundaries.

#### 5.1.1 Cartographic Sources

Mapping held at the National Library of Scotland (NLS) in Edinburgh was checked on-line and produced the following results:

##### **Joan Blaeu: *Atlas of Scotland, 1654***

Blaeu's map depicts the River Thurso running southward from Thurso castle. There are numerous settlements annotated on both sides of the river with *Gees, Amster, Skinern* and *Braal* (from north to south) on the west side of the river near Buckies Hill.

##### **Herman Moll: *The Shires of Caithness and Sutherland, 1745***

Moll's map depicts *Amster* west of the river in the general location of Buckies Hill.

##### **William Roy: *Military Survey of Scotland, 1747-52***

Roy's map depicts increasing settlement and organised cultivation around Buckies Hill (Figure 2). A settlement is depicted at *Buckas* with *Emster* settlement to the east, both surrounded by cultivated fields. There are also settlements and cultivation shown on the southwest side of Buckies Hill at *Cadell*, south of Hill of Sour and on the opposite side of the river *Toddhole* is depicted at the base of Sordale Hill. There are no sites shown within the proposed wind farm development.

##### **John Thomson: *Atlas of Scotland, Caithness Shire, 1832***

Substantial houses are depicted at *Bukkies* and *Amster* with farms shown at *N. Calder* and *Skinnet* and an increasing number of farms in the surrounding landscape (Figure 3). There are no sites shown within the proposed wind farm development.

##### **1st Edition OS 25-inch to the mile – *Caithness, Sheet XI.11* Surveyed 1872, published 1876**

The Ordnance Survey (OS) mapping depicts the detail of a landscape with increasing land division, cultivated land parcels and associated farmsteads. The proposed development area was shown with no settlement structures, indicating, as on the previous maps, that Buckies Hill remained unsettled. However, Buckies Hill is depicted with field boundaries and a sheepfold at the northwest end, suggesting the area was utilised for grazing by the surrounding farms. The proposed wind farm site is crossed by three boundary dykes.



### 5.1.2 *Aerial Photographs*

A 1946 photograph (Sortie 106G/Scot/UK/0075, Frame 3052) from the National Collection of Aerial Photography<sup>7</sup> depicts the development area as mostly barren ground with extensive drainage channels and some linear field dykes. The sheepfold to the northwest of the site is also clearly visible. The image is similar to the modern aerial imagery supplied by Bing Mapping, although the field boundaries are less visible, having degraded over time.

### 5.1.3 *Historic Environment Sources*

A full search of the Highland Council Historic Environment Record (HER), Historic Scotland, Canmore and National Monuments Record of Scotland records revealed that no sites had been previously identified within the development area.

## 5.2 **Walkover Survey**

The walkover survey recorded five previously unrecorded archaeological sites (Table 1, Figure 4). Three sites are boundary dykes, one site is a track and one site is a possible turf/stone structure. No other archaeological sites were recorded in the survey area.

### 5.2.1 *Boundary dykes*

Two of the stone-built dykes, Site 1 (Plate 2) and Site 5, consisted of the remains of Caithness slabs set upright. The location of both dykes is depicted on the 1<sup>st</sup> Edition Ordnance Survey (OS) mapping. This type of dyke construction (Plate 3) is a common technique used in Caithness due to the readily available sources of flat slabs. Interestingly, the historical OS mapping also depicts numerous ‘old quarries’ in the area, which may be an indication of the quarrying for Caithness slab, if not for lime.

The third stone dyke, Site 3 (Plate 4), is a well-preserved boundary wall built with coursed Caithness slabs and capped with small upright slabs. Shown on the 1<sup>st</sup> and 2<sup>nd</sup> OS mapping, this wall appears to be a more significant boundary marker and possibly the one referred to in the *John O’Groat Journal* in 1845 as being constructed between Scots Calder estate and Aimster, Buckies and Howe farms (Section 3.2). The wall fits this description, running to the southwest side of the proposed wind farm development location with the farms of West and North Calder to southwest and the farms of Aimster, Buckies and Howe to the northwest and northeast.

Site 1 and Site 5 will be cut through during construction of the proposed wind turbine access track, whilst Site 3 should not be affected (Figure 4).

### 5.2.2 *Other sites*

Site 2 is a grass-covered track, which was cut into the slope, and runs parallel to a dyke (Site 1). Site 4 was the remains of a sub-oval turf/stone structure cut into a bank and is of unknown use. There are no concerns about direct impacts on these two sites.

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<sup>7</sup> NCAP 2014



Plate 2 Site 1, remains of slab-built dyke, facing N



Plate 3 Caithness slab-built dyke at Lower Bulloch Caithness in 1961<sup>8</sup>



Plate 4 Site 3: well-preserved boundary dyke along the SW side of the proposed development site, facing W

<sup>8</sup> SCRAN 2014

**Table 1** *Archaeological Sites within the Proposed Buckies Wind Farm Development*

Site No.	Site Type	Site Name	Description	Alignment	Condition	Period	Photo No.	Easting	Northing	Ht OD (m)	Distance to Nearest Wind Turbine
1	Dyke	Buckies Hill	A robbed-out field dyke consists of the remains of upright stone slabs standing 0.3m high and embedded into the ground.	NNW-SSE	Very degraded	Unknown	1	312154	962564	115	0.88 km
2	Track	Buckies Hill	The remains of a grass-covered track measuring 3m wide runs along the robbed-out dyke (Site 1). The track was cut into an E-facing slope and banked up to 0.5m high on the W side and 0.2m high on E side.	NNW-SSE	Very degraded	Unknown	-	312102	962670	117	0.86 km
3	Dyke	Buckies Hill	A well-preserved field dyke runs along the SW side of the proposed wind farm. The wall is double-faced comprising Caithness stone slabs and capped with a row of upright slabs.	NW-SE	Well-preserved	Post Medieval	2	310676	962556	170	0.60 km
4	Structure	Buckies Hill	The remains of a sub-oval turf/stone structure cut into a bank on the SW side. It measures 3m E-W by 2.5m internally and is best-preserved on the N side with a possible entrance on the W side. Structure of unknown use.	E-W	Very degraded	Unknown	4, 5	311231	962324	168	0.90 km
5	Dyke	Buckies Hill	The remains of a slab-built field dyke are now overlain by a post and wire fence line. It comprised upright slabs standing 0.5-0.75m high with some displaced slabs.	NE-SW	Degraded	Post Medieval	-	311076	962709	170	0.49 km

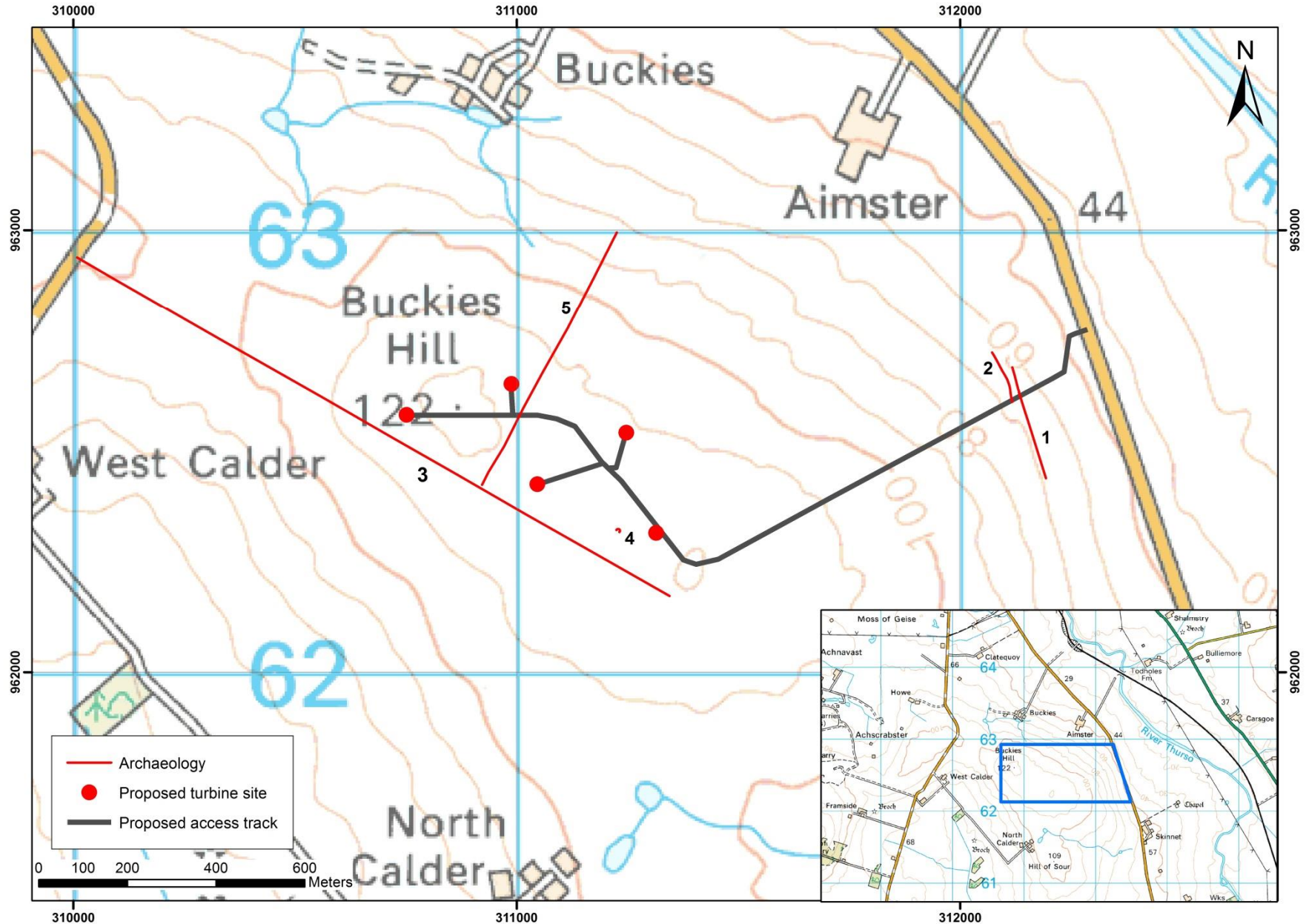


Figure 4 Location of archaeological sites within the proposed development area (February 2014). Ordnance Survey © Crown Copyright 2014. All rights reserved. Licence number 100022432

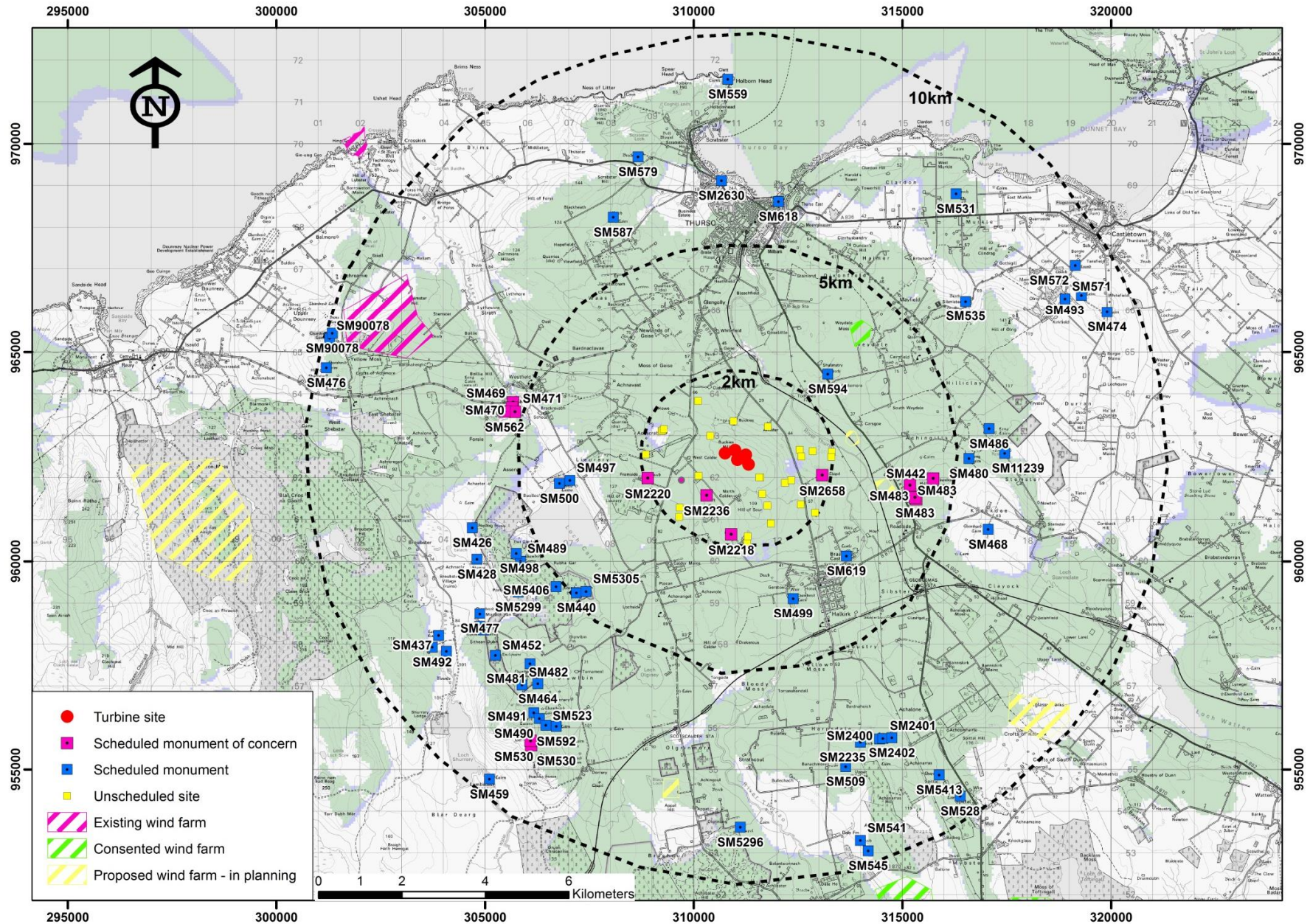


Figure 5 Zone of Theoretical Visibility (ZTV) Diagram for Buckies Hill Wind Farm showing SMs and existing, consented and proposed wind farms nearby





### 5.3 Indirect Impact Assessment of Cultural Heritage Sites

#### 5.3.1 Historic Environment Sources

The sites listed below were examined as part of the assessment of the indirect effects of the development on the cultural heritage of the area. While all records of archaeological and historical sites of interest were assessed within a 2km range from the proposed development, specific Scheduled Monuments (SMs) were assessed as monuments of concern for the development. All other SMs within a 10km radius of the development site were reviewed during the present study in order to assess the indirect impacts that the new turbines might have on the archaeological landscape.

As shown in the Zone of Theoretical Visibility (ZTV) diagram (Figure 5), due to the terrain of the area the proposed wind farm will be visible from the majority of monuments within 10km. The ZTV study uses a bare earth model and hence it represents a worst case scenario that does not take into account screening from the natural and built environments. The situation is the same with most of the other existing or proposed wind farms in the area – the lack of mountainous ground and the openness of the landscape allows for extensive views in most directions. Thus, although Buckies Wind Farm is a small development, it adds to the cumulative effect of indirect impacts on the cultural heritage sites.

#### 5.3.2 Scheduled Monuments of Concern

The Scheduled Monuments of particular interest, as identified by Historic Scotland and the Highland Council Historic Environment Team (Figure 5) included brochs, prehistoric chambered cairns, a prehistoric fort and a chapel site. Four of these are located within 2km of the proposed wind farm (Figure 6). None of these sites is known to be an interpreted site with sign-posted public access.

##### *St Thomas' Chapel – SM2658*

St Thomas' Chapel (**SM2658**) comprises the remains of a ruinous structure and the remains of a burial ground within a degraded enclosure. The site is fenced off with a line of trees to WSW, which provides some screening from the proposed wind farm although the views are partly open to Buckies Hill (Plate 5). The photomontage and wirelines (CH04, Appendix \_\_) show that the tops of four of the turbines and part of the fifth turbine will be openly visible from the east side of the site.

##### *North Calder, Framside and Upper Sour Brochs – SM2236, SM2220, SM2218*

Three of the broch sites (**SM2218**, **SM2236** and **SM2220**) are located to the southwest of Buckies Hill and Hill of Sour. Each site is highly visible in the landscape as a grass-covered mound, although there are no visible structural elements on the sites. All three structures have close, open views towards the proposed wind farm site to north or northeast, with North Calder broch (**SM2236**) having the closest view to the hill (Plates 6-8). Based on the wirelines and photomontages (CH01-03, Appendix \_\_), the entire turbine structure will be visible for the five turbines from each of the sites. However, the intervisibility between the brochs will not be affected by the Buckies Hill proposal.

There were other factors noted as affecting the setting of the sites. An existing single wind turbine situated between North Calder broch (**SM2236**) and Framside broch (**SM2220**) is visible to the west from North Calder, to the east from Framside and to the northwest from Upper Sour broch (**SM2218**). An existing large wind farm was also visible to the southeast

from each of the three sites. A large spoil mound associated with one of the local quarries had a further visible impact on the sites' setting.

*Sordale Hill / Gallow Hill Chambered Cairns – SM483, SM442*

A cluster of four structures on Sordale Hill comprise the Sordale/Gallow Hill chambered cairns, **SM483**. Three of the sites are prominent, grass-covered mounds whilst the massive stone uprights from a denuded cairn chamber form the southern site. The monuments are situated so as to have unbroken views over the River Thurso towards Buckies Hill with an existing wind farm at Baillie also being visible in the far distance to west (Plates 9-11). Overhead power lines also present themselves in the western view from the sites along with two distant wind farms, which are just visible to the south over the treeline (Plate 12).

The wireline (Figure 7) and photomontage (CH05, Appendix \_\_) indicates that all five of the proposed turbines on Buckies Hill will be prominently visible, with further distant views to substantial wind farms at Baillie and Limekiln and a small single turbine at Sordale.

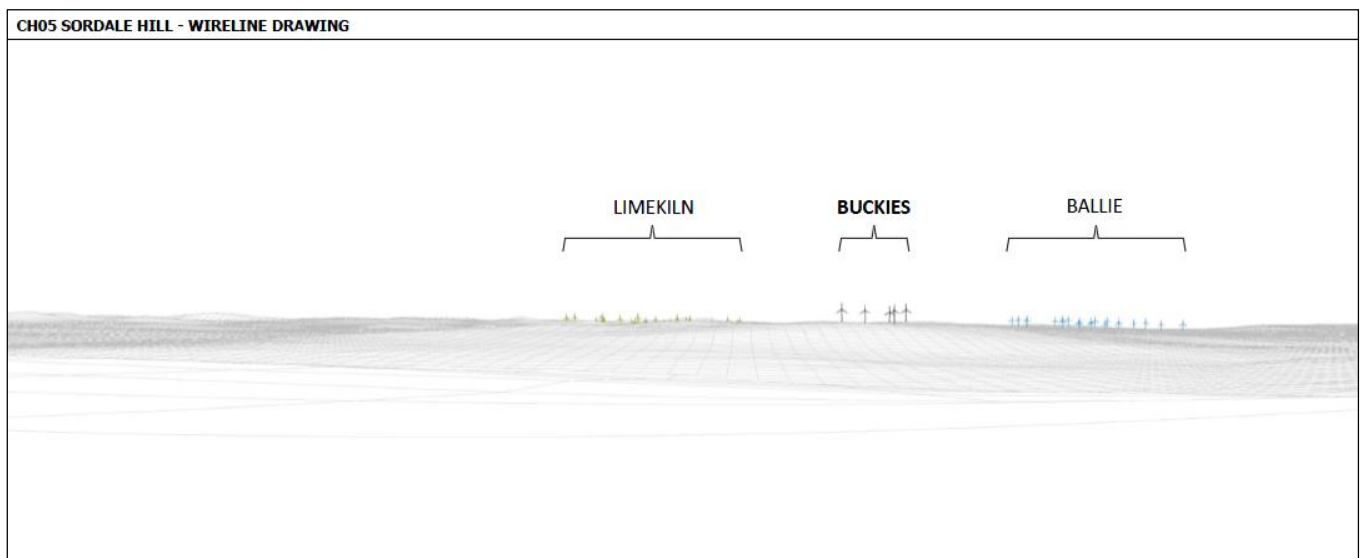


Figure 7 W-facing wireline from the chambered cairns on Sordale Hill, SM483<sup>9</sup>

*Knockglass (Westfield) – SM469, SM470, SM471*

Three SMs of concern at Knockglass (**SM469**, **SM470** and **SM471**) were not visited during this assessment. The wirelines (CH06 Westfield in Appendix \_\_) predict that the proposed Buckies Hill Wind Farm will have a very limited visual impact on these sites. The very tops of the turbines will be distantly visible to the east and will be mostly unnoticeable from over to top of West Calder farm. A row of existing electricity power lines are, at present, a much more visible feature from the site.

*Buaile Oscar fort and chambered cairn (Ben Dorrery) – SM530*

Buaile Oscar fort and chambered cairn (**SM530**) were also not visited during the present study. The wirelines and photomontage (CH07, Appendix \_\_) predict that the sites will have distant views of all five proposed turbines on Buckies Hill, as well as the single turbine at Sordale.

<sup>9</sup> Plan provided by Green Cat Consulting Ltd, April 2014

**Table 2**                      **Scheduled Monuments of Concern**

<b>SM No.</b>	<b>NGR</b>	<b>Site name</b>	<b>Distance to Nearest Wind Turbine</b>	<b>Site description</b>
<b>SM2658</b>	ND 1309 6205	St Thomas' Chapel	1.78 km	The ruins of the chapel are situated about 1/3 mile NE of Skinnet Farm. In pre-Reformation times this was the church of a parish subsequently united to the parish of St Fergus of Halkirk. The structure measures 19m E-W by 6m and comprises a rectangular drystone structure surviving to a height of 1m with tombstones set in the interior. In 1861, a sculptured stone was found here.
<b>SM2218</b>	ND 1085 6056	Upper Sour Broch	1.72 km	The remains of the broch site comprise a mound over a larger mound, grass-covered. The broch mound measures 18m diameter and 1.5m high and is overlain by a modern cairn. It is truncated on N side by ploughing and disturbed on the surface by quarrying with some coursed slabs exposed on the N side. The larger mound measures approximately 35m by 4m high.
<b>SM2236</b>	ND 1035 6160	North Calder Broch	1.09 km	On the summit of a grassy hill, which measures 40m NE-SW by 35m and 3.5m high, are the remains of a broch. The broch comprises a grass-covered, oval mound measuring 19m in diameter and 1m high with a central depression. There is no visible stonework.
<b>SM2220</b>	ND 0890 6199	Framside Broch	1.94 km	The site comprises a conical, grass-covered oval mound measuring 32m by 30m and 5m high, with some exposed walling visible on the N side. A platform 15m in diameter is visible on the top of the mound, and probably represents the broch structure.
<b>SM442</b>	ND1572 6198	Sordale Hill Chambered Round Cairn	4.44 km	The site of late Neolithic-Bronze Age chambered round cairn containing a cist comprises a grassy circular mound 2.5m high overrun by three modern fence lines. The kerb stones survive and a chamber 7m x 2m with a fallen lintel stone visible. A food vessel was reportedly recovered from the site in the early 1900s.
<b>SM483</b>	ND 1531 6157	Gallow Hill Chambered Long Cairn	4.06 km	A very large and relatively undisturbed long cairn measuring about 223ft long, apart from the horns which protrude from the SSE. In profile the monument is divided into three segments by transverse hollows indicating a multi-period construction. At the SSE end there is a steep-sided circular mound measuring about 90ft in diameter. It stands about 10ft high with a flat top about 45ft in diameter. Possibly a heel-shaped cairn.
<b>SM483</b>	ND 1518 6181	Gallow Hill Chambered Long Cairn	3.89 km	A trapezoidal long cairn measuring 47m N-S is formed by a stony grass-covered mound 1.15m high, horned at either end. The wider end lies at S, 20m wide, forecourt 3m deep; at N the horns are 15m wide, the forecourt 2m deep.

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM483	ND 1534 6151	Gallow Hill Chambered Cairn	4.11 km	The site is an Orkney-Cromarty type round cairn with a Camster type chamber. The remains of the site comprise a turf-covered mound, measuring 40ft by 27ft and 3ft high. The entrance has been completely removed and the tops of five stones are visible in the turf-covered mound.
SM530	ND 0594 5574	Buaile Oscar Fort and Chambered Cairn	8.40 km	Buaile Oscar is a uni-vallate fort on the summit of Beinn Freiceadain measuring 290m NNW-SSE by 150m transversely. The wall is best distinguished in NW where there is a simple entrance, 1.5m wide, where it is 4m thick and up to 1m high, and inner and outer facing slabs are evident. In N and NW the wall survives as a terrace surmounted by a slight bank, and in the S as a tenuous heathery scarp, except for a marked stretch of walling, 2-2.5m broad and up to 0.5m high, in the SE. A natural cliff forms the defence in the NE. The cairn is an Orkney-Cromarty Round Cairn with a possible Camster-type chamber. This cairn is situated within the fort which crowns the summit, towards its N end. The grass-covered mound stands about 1.3m high and measures 16m N-S by 17m transversely.
SM469	ND 0568 6378	Knockglass Chambered Long Cairn	5.22 km	A turf-covered, horned long cairn measures 40m NW-SE by 18m across the higher SE end and 11m across the NW end. Some possible kerb stones are visible in NW and SE. Some disturbance in W corner and no trace of a passage or chamber.
SM470	ND 0565 6367	Mill of Knockglass Chambered Cairn	5.22 km	The cairn is located in a narrow strip of rough grazing between the arable fields of Forsie Farm and the Forss Water. It is turf-covered with diameter of 11.5m, and stands 1.2m high to S and 1.7m to N. The top has been flattened by disturbance and there has been some robbing in the SE side and some walling is exposed.
SM471	ND 0572 6357	Westfield Chambered Cairn	5.13 km	This chambered cairn occupies a small rise at side of a flat field, an area around which has been left rough and has been augmented by field clearance. The edge of the cairn is difficult to trace, but the height is approximately 1.5m and the probable diameter is approximately 12m. The tops of three orthostats are exposed in centre of cairn and may have formed part of the chamber.
SM562	ND 0547 6258	Knockglass Broch	5.37 km	The site comprises the turf-covered remains of a broch with outworks. The broch mound measures 18.5m in diameter and 2m high and possible sections of walling were visible on the SE side of the broch.



Plate 5 Overlooking the E end of the enclosure around St Thomas' Chapel, SM2658, facing Buckies Hill to WNW



Plate 6 Looking NE over North Calder Broch (SM2236) towards Buckies Hill, showing close views to the proposed wind farm site



**Plate 7** Looking NNE over Framside Broch (SM2220): single turbine at West Calder in centre right and Buckies Hill in centre of image



**Plate 8** Overlooking Upper Sour Broch (SM2218) to Buckies Hill (in background), facing N



**Plate 9** Looking W across the northern long cairn (SM483) and over the River Thurso to Buckies Hill; image demonstrates uninterrupted views from the site to the proposed wind farm site with the existing wind farm at Baillie in distant background



**Plate 10** Looking WNW over the southern-most chambered round cairn (SM483) and over the River Thurso to Buckies Hill, with the existing wind farm at Baillie in distant background





Plate 11 Looking WNW over the southern end of the central long cairn (SM483) and over River Thurso to Buckies Hill; the existing wind farm at Baillie in distant background



Plate 12 Looking S over the southern-most chambered round cairn (SM483) showing the large wind farm visible in the far distance to far right

### 5.3.3 Cultural Heritage Sites within 2km

Within the 2km study radius four SMs were identified (Section 5.3.2). There were no ‘A’-listed buildings, Conservation Areas, World Heritage Sites, or Gardens and Designed Landscapes found to be located within this study radius. Only one ‘B’-listed building at Aimster Farm and one ‘C’-listed building at Skinnet Farm were identified within this area. Twenty-seven unscheduled sites of archaeological or historical interest are listed below in Table 3 with the sites mapped in Figure 6. The proposed wind farm is theoretically visible to all of the monuments, with the exception of the cairns and cist at Achscrabster, Highland HER sites **MHG972**, **MHG969** and **MHG925**.

The cultural heritages sites within the 2km radius of Buckies Hill comprise Post Medieval farm buildings, dykes and clearance cairns and prehistoric hut circles, cairns and a broch. All of these sites are in a ruinous condition, with the prehistoric sites consisting mostly of grass-covered mounds. None of the sites are known to be designated sites of interest for area visitors.

Apart from the SMs discussed previously, the most significant sites within the 2km area appear to be the group of cairns at Achscrabster, which are outwith the ZTV. The broch and cairn at Skinnet and the nearby hut circles are also of significant archaeological interest and the proposed development will certainly be partially visible to the northwest from the monuments. However, the landscape setting and the intervisibility between monuments would be only minorly affected by the proposed turbines. The heightened position of Buckies Hill itself would have naturally prevented visibility in the direction of the hill from individual sites.

**Table 3** *Unscheduled sites ≤ 2km*

HER No.	NGR	Site name	Distance to nearest wind turbine	Site description
<b>MHG972</b>	ND 0885 6256	Achscrabster burial cairns	1.9 km	Four grass-covered round cairns are situated close together in a line along a prominent ridge south of Achscrabster. From N to S they measure: 7m in diameter, 0.5m high; 11m in diameter, 0.8m high; 7m in diameter, 0.4m high; and 6m in diameter, 0.4m high.
<b>MHG969</b>	ND 0923 6311	Cairn of Howe	1.61 km	A grass-covered circular mound 28m in diameter and 1.7m high may be a prehistoric burial cairn or may be a natural mound. A polished stone axe and a flat bronze axe were found in the Cairn of Howe, parish of Thurso, about 1885, by Mr James Swanson, and are now in Thurso Museum. There is no evidence that they were found together or in connection with the original burial or burials in the cairn. The bronze axe is stated to have been picked out of the wall of the cairn.
<b>MHG925</b>	ND 0926 6313	Torranakist cist	1.57 km	There appears to be little left visible of the site of a stone cist containing human remains and found in 1869, as per the OS 6in. map, <i>Caithness</i> , 2nd edition (1907). The possible site is located adjacent to the Cairn of Howe.
<b>MHG19417</b>	ND 1040 6300	Shieling (?), Buckies Hill	0.55 km	Two possible shielings: at ND 1040 6308, the subcircular structure measures 9m in diameter overall with a bank 0.3m wide; at ND 1043 6304, the subcircular structure measures 10m by 5m and has an internal partition defined by very low grassy banks.

HER No.	NGR	Site name	Distance to nearest wind turbine	Site description
MHG19455	ND 1009 6383	Clatequoy Farmsteading	1.41 km	A rectangular stone/mortar farmstead of cruck construction measures 9.8m ENE-WSW by 5m. It contains opposing doors, one of which was later blocked, possible original function as a winnowing barn. It has been converted by removing the SE wall into a cart house.
MHG15167	ND 1178 6326	Aimster Farm Dwellings	0.86 km	The building on Aimster Farm are designated 'C' Listed Buildings.
MHG37046	ND 1094 6334	Buckies Farm	0.70 km	The Post Medieval farm buildings at Buckies Farm are still in use.
MHG19015	ND 1160 6201	Farmstead and kiln, Hill of Sour	0.41 km	Dimensions: 23.6 x 3.5m. A rectangular structure measuring 23.6m E-W by 3.5m is defined by grass and heather covered banks 0.5m high. It is divided into three compartments and with a small kiln in the NW corner. It is associated with an enclosure measuring 35 x 17m, subdivided into two areas.
MHG19411	ND 1012 6204	House, Burn of Sour	0.83 km	A stone and mortar rectangular house measures 17m NE-SW by 5.7m and is divided into two compartments with fireplaces.
MHG36801	ND 1165 6161	Cottage, North Calder	0.76 km	The site of a cottage by North Calder Farm.
MHG19014	ND 1177 6133	Farmstead, Hill of Sour	1.10 km	A farmstead comprising an unroofed long building and an enclosure is depicted on the 1st edition of the OS 6-inch map and is shown on the current edition of the OS 1:10560 map. The farmstead measures 32m E-W by 4m and comprises a grass-covered rectangular structure with banks 0.3m high maximum. It is located on the S wall of a larger enclosure 80m by 30m.
MHG19013	ND 1185 6091	Farmstead, Upper Sour	1.50 km	A farmstead comprising two unroofed buildings and an enclosure is depicted on the 1st edition of the OS 6-inch map. The partial remains of an enclosure are shown on the current edition of the OS 1:10560 map.
MHG19413	ND 1130 6060	Dyke, Upper Sour	1.71 km	A turf-covered bank measures 80m E-W and 1m wide, 0.5m high.
MHG37110	ND 1118 6053	Cottage, Upper Sour	1.87 km	The site of a cottage at Upper Sour Farm.
MHG977	ND 0967 6128	Hut circle, Carnavagry	1.69 km	A low rise is located in a cultivated field and may be the site of a destroyed hut circle or other structure.
MHG18942	ND 0965 6106	Farmstead, Carnavagry	1.87 km	A rectangular structure measuring 7m NNE-SSW by 4m is defined by a low grassy bank and associated with a field wall running 40m NNE and 32m SSW. A cruciform windbreak partly formed by the walls of two parallel longhouses whose original dimensions were approximately 17m N-S by 3.8m (W structure) and 11.5m by 5m (E structure). It formed part of the farmstead depicted on the 1st edition map.
MHG19405	ND 1254 6266	Clearance cairn, Skinnet	1.27 km	An irregular subrectangular grass-covered clearance cairn measures 10m E-W by 3m.
MHG19407	ND 1259 6250	Clearance cairn, Skinnet	1.28 km	An irregular subrectangular grass-covered clearance cairn measures 15m E-W by 3m.
MHG19409	ND 1286 6264	Dyke, Skinnet	1.57 km	A turf/stone boundary dyke, from ND 1286 6264 to ND 1306 6230, measures 125m and is aligned E-W.
MHG1779	ND 1330 6262	Hut circle, Skinnet	2.01 km	A turf/stone bank forms a hut circle with a diameter of 16m is situated on the SW side of River Thurso. The bank measures 2m wide and 0.5m high and there is no visible entrance.

HER No.	NGR	Site name	Distance to nearest wind turbine	Site description
<b>MHG701</b>	ND 1330 6250	Hut circle, Lower Horse Pool	1.99 km	A possible hut circle measuring 5m in diameter is situated in low-lying rough pasture just above the flood plain of River Thurso. It comprises a turf-covered bank spread from 2-2.5m and 0.2m high with a possible entrance in the W arc. A second suboval structure measures 6m by 5m within a wall similar to that of the hut circle, but no entrance is apparent. Other probable structural remains, which are unclear, are located nearby.
<b>MHG19410</b>	ND 1320 6220	Building, St Thomas' Chapel	1.87 km	A parallel pair of longhouses is defined by grass-covered walls 0.7m high. The SW structure measures 12.6m NW-SE by 4.5m and is divided into four compartments. The NE structure measures 27.2m NW-SE by 6.4m and is divided into six compartments.
<b>MHG1766</b>	ND 1257 6136	Skinnet Broch	1.58 km	An account in the Edinburgh Daily Review of 1865 by John Miller mentions: 'two or three human skeletons' in the broch at Skinnet; "one of them lay close to the fireplace, which still retained the strong red colour produced by using peat fuel (Miller 1865, 6)." Miller also notes a rock-cut well inside the broch and a dry ditch surrounding it. At present, the site comprises the remains of a grass-covered, suboval mound of earth and stones 3m high and 21m long by 14m wide. Destroyed by quarrying on E and W sides.
<b>MHG24062</b>	ND 1274 6170	Skinnet Farm	1.59 km	The buildings at Skinnet Farm comprise a house, walled garden, byre, dovecot and granary.
<b>MHG18344</b>	ND 1291 6117	Farmstead, Skinnet	1.97 km	A farmstead comprising one roofed long building and one unroofed building is depicted on the 1st edition of the OS 6-inch map and a roofed building is shown on the current edition of the OS 1:10560 map (1970).
<b>MHG19412</b>	ND 1234 6194	Dyke, Skinnet	1.09 km	A turf/stone bank measures 30m long NNW-SSE and 1m wide, 0.7m high.
<b>MHG2369</b>	ND 1219 6187	Cairn, Skinnet	0.98 km	On an E-facing heathery hillside there is a prominent turf-covered cairn. It is about 16.5m in diameter and 0.8m high. Several set slabs protrude through the turf and there is evidence of robbing on the structure.

### 5.3.4 Cultural Heritage Sites within 2-5km

Within the 2-5km study radius nine SMs were identified (Table 4), two of which were discussed previously as SMs of Concern (Section 5.2.1). The proposed wind farm is theoretically visible to seven of the SMs, the exceptions being two chambered cairns (**SM497** and **SM500**) west of Buckies Hill at the north end of Loch Calder (Figure 5).

Except for Braal Castle (**SM619**), the SMs within the 2-5km radius consist of prehistoric cairns, a broch and a hut circle and comprise grass-covered mounds, none of which are known to be directly sign-posted for visitor access. However, the ruins of Braal Castle are likely to attract attention, as the monument is located at the northeast end of Halkirk. Given its location in the village, the position of the proposed turbines is unlikely to have noteworthy visual impact on the site. The castle is situated on the northwest side of River Thurso and the significance of its setting is in the aspect across the river to southeast as well as north and southwest along the river.

**Table 4** *Other Scheduled Monuments 2-5km*

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM594	ND 1316 6443	Shalmstry Broch	2.76 km	Tulloch of Shalmstry is an oval, grass-covered mound measuring 26m N-S by 21m with some coursing evident on SW side and an entrance visible to E. Orientation N-S
SM497	ND 0703 6193	Tulach an T-Sionnaich Chambered Long Cairn	3.77 km	'The Mound of the Fox', a multi-period chambered cairn excavated by Corcoran in September 1961 and April 1963, in advance of raising of level of Loch Calder. The excavation showed that monument had originated as a minimal, round cairn, about 35ft in diameter, covering a passage grave consisting of a square chamber whose 7ft long passage had opened to S, but was blocked. The cairn was enclosed within a heel-shaped cairn, first to be identified on mainland of Scotland. The façade was built across entrance to passage and appeared to have measured c53ft from facade to rear and 51ft across chord of the facade. Subsequent to this, the structure was encapsulated in long cairn whose straight S end ran across facade of heel-shaped cairn, and which was completely surrounded by a low revetment wall. The long cairn was straight-sided, 127ft long, and tapered slightly from width of 34ft across its pseudo-facade to 26ft at slightly convex N end. It was aligned c15 E of axis of heel-shaped cairn, presumably to use a natural ridge to enhance its height which, except at S end was nowhere more than 3ft. The investigation revealed cist-like arrangements of stones, which formed part of cairn structure. There were few finds but pottery suggested to Corcoran that the heel-shaped cairn was in use during the Neolithic period and that it went out of use about period of local arrival of Beakers and that the long cairn was complete before deposition of a cinerary urn outside the revetment wall. At present the S and SW sides, including the chamber, have been eroded by waters of Loch Calder and the rest of the main body of the cairn is turf-covered.
SM500	ND 0682 6188	Tullochs of Assery Chambered Cairn	4.03 km	Cairn A is a well-preserved, short, horned cairn, probably the earlier of the two cairns. Excavation by Corcoran in 1961, in advance of the raising of the level of Loch Calder, revealed an apparently unique plan of two chambers set back to back and approached by passages through the north and south facades. Some damage has been caused to the cairn since excavation by the waters of the loch.
SM499	ND 1235 5911	Tulloch of Milton Chambered Cairn	3.38 km	The remains of a grass-covered cairn measures 34m by 24m and 1.7m high. There is a possible ring cairn 20m to the S.
SM440	ND0722 5928	Carriside Chambered Cairn	4.87 km	An Orkney-Cromarty round cairn, with a Camster-type chamber. The cairn is in a flat area of heather moorland at 80m OD, 350m NW of the deserted croft of Carriside. The cairn is turf-covered and the edge is fairly well-defined though disturbed in places by robbing. It measures 22m in diameter and 1.7m high; the area E of the chamber has been removed to almost ground level. The cairn appears to have been heel-shaped in plan and the entrance is in the SSE.

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM5305	ND 0738 5932	Carriside Hut Circle	4.69 km	Situated on gently sloping W side of Loch Calder are the remains of a possible hut circle. It measures 9.2m in diameter and is formed by a turf bank with some stone present; the bank is about 3.2m wide and 0.4m high. There is a possible entrance, 2.0m wide, in the SE.
SM619	ND 1379 6011	Braal Castle	3.21 km	The ruins of Braal Castle are situated at rear of present mansion, on the N bank of Thurso River. The tower is a rectangular, rubble-built structure measuring externally some 35 by 37ft and existing to level of top of second storey. The walls are from 8-10ft in thickness. The castle probably dates from 14th century. In 1375 or 1376, Robert II granted to his son David Stewart, Castle of Brathwell and all lands thereof. In 1547, castle was in the possession of George, Earl of Caithness.

### 5.3.5 Cultural Heritage Sites within 5-10km

Within the 5-10km study radius a total of forty-seven SMs were identified (Table 5). One of these sites to the southwest, Buaile Oscar (**SM530**), is discussed as a monument of concern in Section 5.2.1. The proposed wind farm at Buckies Hill will not be visible within the viewsheds from sixteen of these sites (**SM2630, SM618, SM246, SM428, SM477, SM478, SM437, SM2660, SM541, SM545, SM468, SM474, SM493, SM571, SM527** and **SM535**) based on the ZTV diagram (Figure 5).

Out of the remaining thirty-one sites, the majority of the monuments are chambered cairns and brochs. The landscape within the 10km radius and far beyond comprises a huge number of prehistoric monuments, all of which will have visible views to the various wind farms in the surrounding landscape and the proposed wind farm at Buckies Hill will add to this indirect impact. However, the monuments appear in clusters, particularly the groups in the southwest, southeast and northeast (Figure 5). As is the case for other sites, the proposed wind farm will not affect the intervisibility between these groupings. Nor will it add a significantly greater visual impact to the north and northwest where the monuments are already affected by the proximity to Thurso and an existing wind farm, respectively.

**Table 5 Other Scheduled Monuments 5-10km**

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM426	ND 0470 6080	Bridge of Broubster Stone Circle	6.31 km	A stone circle comprising six standing stones and described by Burl as a typical horse-shoe setting.
SM428	ND 0481 6005	Bridge of Broubster Standing Stones	6.46 km	The more southerly stone is 3ft 10ins high, 2ft broad and 8ins thick. It faces ENE-WSE, and the top is pointed. The other stone faces N-S and is 4ft 6ins high, 2ft 1in broad and 1ft 1in to 7ins thick.
SM498	ND 0575 6019	Tulach Buaile Assery Chambered Cairn	5.54 km	A turf-covered long horned cairn of Orkney-Cromarty group, with a Camster-type chamber.

<b>SM489</b>	ND 0585 6001	Torr Bann na Gruagaich Chambered Cairn	5.54 km	A grass-covered round Orkney-Cromarty type chambered cairn, measuring 19m in diameter with its chamber at the NNE end. There is no trace of a hornwork and there has been disturbance by forestry ploughing.
<b>SM5299</b>	ND 0582 5930	Footprint, Lorg an Fhamhair	5.96 km	On the W end of the summit of the hill of Port-an-eilein, NE of Shurrery church, is a flat, exposed rock-surface measuring 10ft square. Towards N end, near the medial line, there has been hollowed out the impression of a human left foot. It is exactly 12ins in length, 6ins in breadth across the sole and 4.5ins across the heel, while the depth of the impression is about 1.25ins. The artificial character of mark is quite obvious. The rock on which it is carved is said to have been called 'Clach na Luirg'.
<b>SM5406</b>	ND 0670 5940	Carriside Cairns	5.15 km	Two prehistoric cairns are located approximately 125m apart on open moorland.
<b>SM480</b>	ND 1655 6245	Sinclair's Sithean Long Cairn	5.23 km	A turf-covered long cairn, the site has been considerably robbed in places, leaving the surface very uneven and standing up to 7ft high at SE end and about 3.5ft high at NW end. The cairn is composed of irregular stones under turf. The presence of large stones on E corner of the cairn edge suggests that cairn was never horned. The Ordnance Survey Name Book (1872) states that cairn was opened 'many years ago' when human remains were discovered in a cist, just below surface at ESE end, about 1880.
<b>SM587</b>	ND 0808 6824	Thing's Va Broch	6.26 km	The site comprises a grass-covered stony mound measuring 45m by 42m and 4m high and enclosed by a bank measuring 60m by 55m. The site has been partially excavated in the past.
<b>SM579</b>	ND 0867 6969	Scrabster Mains Broch	7.41 km	The remains of the broch comprise a grass-covered mound measuring 16m in diameter and 3m high and bounded on the N by two banks.
<b>SM559</b>	ND 1085 7155	Holburn Head Fort	8.90 km	Located between two parallel chasms on a cliff-headland about 55m long is a bank, 0.75m high, of loose material quarried from one side. At the end of the headland is a wall measuring 0.5-0.9m high and 2.4m with an entrance in the middle.
<b>SM2630</b>	ND 1068 6916	Scrabster Castle	6.48 km	The remains of a tower castle site are described as follows: the curtain wall is partly destroyed by erosion and partly obscured by turf banks, but here and there short stretches of outer face are exposed. On W side the inner wall-face of a building about 5m square with a mural chamber is exposed, and there appears to have been a further building of indeterminate size, now overlaid by a pill-box, at extreme N end of promontory.
<b>SM618</b>	ND 1203 6861	St Peter's Church	6.06 km	Built into the tower of the church is a runic stone.
<b>SM531</b>	ND 1626 6881	Burnside Broch	8.04 km	The broch, situated on a level field, stands on an amorphous grassy mound, 3.2m max height and 62ft in diameter with some possible outworkings.
<b>SM535</b>	ND 1651 6622	Cairn of Sibmister Broch	6.43 km	On top of a steep grassy hillock are remains of a broch measuring 33m by 32m 1.5m high. The central mound has a diameter of 16.5m, 0.4m high. There are indications of possible structures on S sector.
<b>SM572</b>	ND 1912 6710	Olrig House Broch	9.11 km	A grass-covered mound measuring 33m x 29m and 2m high.
<b>SM493</b>	ND 1929 6637	Trothanmas Hillock Cairn	8.91 km	The cairn site comprises a partially grass covered mound, 2.5m high and 30m in diameter, mainly composed of sand and clay containing small stones and boulders. Badly eroded by rig-and-furrow and modern disturbance.

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM474	ND 1991 6596	Ring Hillock Cairn	9.31 km	The site comprises a conical grass-covered cairn, situated on top of a hill, measuring 38ft in diameter and 5-6ft high.
SM486	ND1708 6315	Stemster Hill Chambered Cairn	5.86 km	A chambered long cairn measuring 65m NE-SW in length and 2m high is situated on a ridge with two depressions on its W side. It appears to have originally consisted of 2 round cairns which have been conjoined into a long cairn.
SM11239	ND 1742 6260	Stemster Long Cairn	6.15 km	Located in an impressive situation, the long cairn measures 51m NE-SW with the wider end formed by a circular mound 15m in diameter and 2m high. It has been reduced in size by the construction of a reservoir and track running alongside.
SM468	ND 1703 6077	Mill of Knockdee Chambered Cairn	5.95 km	An Orkney-Cromarty cairn set at the edge of a field. It measures c9.6m in diameter and stands to a height of 1m, with part of it removed. Part of the chamber is visible.
SM2235	ND 1400 5565	Achies Broch	7.18 km	A circular grass-covered mound, with a circular depression 10m diameter on its summit measures approximately 44m in diameter overall.
SM509	ND 1364 5506	Achies Broch	7.61 km	A grass-covered circular mound 3m high and 30m in diameter has been truncated on the S side.
SM2400/ 01	ND 1446 5575	Achanarras Cairn	7.30 km	Cairn A is a stone circle comprising five prostrate stones at the foot of Achanarras Hill in marshy open moorland. It now measures only 10.0m in diameter and 0.5m in height. Cairn B, a probable cairn, in a similar topographic position to and 75m W of 'A', measures 56ft N-S by 43ft and survives to a height of 1m.
SM2402	ND 1475 5577	Achanarras Hut Circle	7.40 km	A circular grassy enclosure 0.5m high and 13m in diameter with an entrance in W and enclosing bank spread to a width of 4m.
SM5413	ND 1588 5487	St Magnus' Church and Burial Ground	8.73 km	Little is known of hospital of St Magnus beyond that it was mentioned in 1476 and was still in existence in 1633. The dedication is to Norse St Magnus, who was executed in 1116. The site of the hospital appears as a rectangular sunken area measuring 30.5m E-W by 6m transversely, with what appears to be a division near its W end. Between the hospital and chapel lie footings of several buildings with internal divisions, which appear to be contemporary, and associated with the hospital. S wall of these secondary buildings is also the N wall of hospital which survives to height of 0.4m. The site is within a disused graveyard.
SM528	ND 1637 5438	Fairy Hillock Chambered Cairn	9.43 km	Fairy Hillock is a short horned cairn, possibly of Orkney-Cromarty type. It is now an oval, turf-covered mound about 6ft high, measuring 60ft ENE-WSW by 39ft transversely. The edges are clearly defined, but there has been some disturbance at the centre.
SM541	ND 1400 5330	Cnoc Donn Broch	9.40 km	The broch site survives as a group of turf-covered earthworks with a central mound measuring 22m by 20m and 2.5m high. The broch is protected by bank and ditch on its E side. The ditch survives c 2m wide and the bank stands c 3m above its base.
SM545	ND 1418 5306	Dale Farm Broch	9.69 km	A grass-covered subcircular mound measuring 27m by 22m and 2m high with outer wall facing visible on the SW and NE sectors. The interior has a diameter of 8m.



SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM5296	ND 1112 5363	St Peter's Chapel	8.70 km	The chapel measures 10.7m NW-SE by 5.7m and comprises a rectangular structure with no surviving internal features.
SM459	ND 0511 5477	Lambsdale Cairn	9.67 km	On E bank of Torran Water, about 1/4 mile above its influx into Loch Shurrery is a cairn overgrown with grass. It is slightly oblong on plan, lying with its largest axis E-W and rises in height towards latter direction. In diameter it measures 55ft from E to W by 41ft from N to S. Excavation in October 1955 proved that this site is not a chambered cairn. Trial cuttings showed it to be a pear-shaped mound, 80 by 50ft, composed mainly of sand, with a circular and a rectangular stone structure in SE half, which enclosed several deep burnt layers. About a dozen sherds were found, some apparently Viking, and the partial remains of two human skeletons.
SM491	ND 0617 5636	Torr Mor Cairn	7.78 km	A partially heather and turf-covered cairn measuring 7.5m NW-SE by 6.5m, with a maximum height of 0.9m in the N half, situated on top of shelving rock. Slightly E of centre is a cist and the capstone and other disturbed slabs lie around the cairn.
SM490	ND 0631 5622	Torr Beag Chambered Cairn	7.80 km	The chambered round cairn is on a rise in flat heather moorland, at the foot of Beinn Freiceadain. It is covered with heather and bracken and stands up to 2.4m high and measures 16.5m NW-SE. There are some visible orthostats forming the passage and chamber.
SM523	ND 0646 5606	Brawlbin Hut Circle	7.84 km	About 1 mile NNW of Dorrery Lodge, at the base of the eastern slope of Ben Freiceadain, is a hut circle measuring c 11.5m NW-SE by c10.4m.
SM592	ND 0671 5603	Torr Phadruig Hut Circle	7.78 km	This 'hut circle' is probably the remains of ruined chambered cairn, 13m in diameter by 1m high. It has been extensively disturbed by exploratory trenches, revealing a core content of medium sized slabs; there is no evidence of a chamber or passage.
SM542	ND 0525 5773	Cnoc an Ratha Fort	7.33 km	A hillfort occupies N end of an eminence rising from moor of Brawlbin, about 3/4 mile SSE of Shurrery church. It was an irregular oval but is now largely destroyed by afforestation. The wall and the whole of interior of this enclosure have been deep ploughed and planted with conifers, so that in places the wall is barely traceable. Where best preserved in SW it survives as partially heather-covered rubble spread some 2m broad and 0.7m high on external face. The hut circle at ND 0528 5770, undisturbed by the forestry, is levelled into slope, its interior 2m below fort and 9.5m in diameter.
SM481	ND 0608 5753	Sithean Buidhe Chambered Cairn	6.88 km	A chambered round cairn of the Orkney-Cromarty group comprises a conspicuous grass-grown mound, 17m in diameter and 2m in height.
SM482	ND 0589 5703	Sithean Mor Long Cairn	7.38 km	The remains of this horned long cairn are situated about 100 yards NW of Loch a Mhuilinn. The body of the cairn, except the high portion at the NNE end, which probably contains the chamber, has been removed for the sake of its stones, a mere line along each side being left. The total length of the cairn is some 200ft, its breadth at the NNE end 54ft and across the body at the SSW end, 30ft. The elevation at the former end is about 10ft. A slight circular depression about 8ft in diameter at the high end probably indicates the position of the chamber.

SM No.	NGR	Site name	Distance to nearest wind turbine	Site description
SM464	ND 0627 5706	Loch a' Mhuillian Chambered Cairn	7.12 km	The remains of this cairn measure 13m by 14m. The stones are turf-covered, and it is 0.5m high on the N side and 1.2m on the S, where the ground falls away. The small, thin slab previously described is probably the side of a cist.
SM437	ND 0389 5822	Carn Liath Cairn	8.13 km	The site comprises a large, circular, stony mound, 30m in diameter and about 1.8m high. It is considerably mutilated and there would appear to be later rectangular structures built on to it, but these are too indefinite for survey. The remains suggest a cairn.
SM492	ND 0374 5792	Tota an Dranndain Broch	8.41 km	The ruins of a large circular, grass-covered broch measuring 17m in diameter and 1.5m high with walls about 4m wide. The interior of the broch is a pile of grassed-over rubble.
SM2660	ND 0408 5783	Creagan a' Bheannaich Chapel and Graveyard	8.19 km	This is an oval grass-covered stony mound measuring 17m NW-SE by 14m transversely and 0.5m high. There are upright stones on E, S and W sides, but other than these there is nothing to indicate that a chapel and graveyard existed in area; and site strongly resembles the remains of a cairn. There is strong evidence for a church or chapel in this position based on name Creagan a' Bheannaich.
SM479	ND 0497 5834	Shurrery Kirk Chambered Cairn	7.17 km	The much mutilated remains of an Orkney-Cromarty round cairn measuring 30m in diameter by 1.7m high. Several large, flat stones set on edge and protruding from cairn in SE indicate the presence of a chamber and stalls.
SM478	ND 0488 5843	Shurrery Kirk Standing Stone	7.19 km	This broad, pointed angular slab is 3ft 6ins high, 4ft broad at the centre and 2ft 8ins broad at the base, and 1ft 4ins thick; it faces NE-SW. There is another pointed stone set firmly on end in the peat, 147ft to NE; it protrudes 2ft from the ground.
SM477	ND 0488 5874	Shurrery Kirk Chambered Cairn	7.01 km	The mutilated remains of this Orkney-Cromarty round cairn measure about 35m in diameter by 2.1m high. To S of each of the walls which cross it, the cairn survives as a grass-covered mound. N of northern wall, more details can be seen. The main body of the cairn is within a retaining wall, and in E five slabs are set on edge forming four stalls. The cairn extends into the wall surrounding the Kirk to the south.
SM90078	ND 0124 6532	Cnoc Freiceadain Long Cairns	9.86 km	This long horned cairn, turf-covered and not seriously disturbed, is one of the largest and most perfect of its type. The body of the cairn is 235ft long by 32ft wide and about 4ft high. It swells at each end into distinct circular mounds; that at the SE end is 70ft wide and 10ft high, while that at the NW is 60ft wide and 7ft high. The horns, two at each end, project an additional distance beyond the cairn varying from 10ft to 18ft. 'Na Tri Sithean' is the name given to the three prominent mounds, which form parts of the long cairns described here.
SM764	ND 0118 6462	Hill of Shebster Chambered Cairn	9.77 km	The heavily-robbed remains of this round, stalled cairn of Orkney-Cromarty type comprise a turf-covered mound 1.6m max high and 26m in diameter. The top has been robbed revealing seven stone slabs forming the stalls of a gallery grave and two portal stones are in SE corner of cairn.

## 6.0 Conclusions

### 6.1 Direct impacts

The archaeological desk-based assessment and walkover survey of the proposed wind farm development area at Buckies Hill noted five archaeological sites of interest, with limited significance in terms of impact. Whilst two of the denuded boundary dykes (Site 1 and Site 5) and the track (Site 2) will be crossed by the proposed access track and therefore directly impacted, the importance of this impact is not a cause for concern. The function and period of the sites has already been assessed with the method of their construction well-understood. Only a small section of each site should be affected by the development. There are no recommendations for any mitigation with regards to these sites.

### 6.2 Indirect impacts

An assessment of the indirect effects on all archaeological and historical sites within 2km and all Scheduled Monuments within 10km of the development (Figures 5 and 6) was conducted. These sites were identified during the desk-based study, with seven of the SMs having been highlighted by the Highland Council HET and Historic Scotland during consultation. From the ZTV diagram in Figure 5, it is clear that many scheduled and unscheduled monuments in the surrounding landscape will be indirectly affected by the visibility of the proposed wind farm.

As per Historic Scotland guidance, the setting of the sites was considered during this study in order to assess how an archaeological or cultural heritage site is “experienced, understood and appreciated,” with the understanding that buildings and monuments were often sited in specific locations with respect to the landscape and other structures<sup>10</sup>. Five of these sites were visited during the present survey, as it was determined that the indirect impacts would be greatest on each of these monuments. Figure 5 shows the location and direction of photographs taken from the SMs.

#### 6.2.1 Sites within 2km

Four Scheduled Monuments and twenty-four unscheduled monuments within 2km of the proposed wind farm would be indirectly impacted by the visibility of the proposed turbines at Buckies Hill. It appears that the significance of the landscape setting for the sites may not be affected, but certainly the views from each monument will be altered.

The chapel and burial ground of St Thomas (**SM2658**) is a significant monument on its own. While the new turbines would be visible to west, the site’s setting is most significant for the eastern aspect overlooking the River Thurso. Therefore the indirect impact on the site is considered minimal.

As previously discussed, the three brochs at Framside, Upper Sour and North Calder (**SM2218**, **SM2236** and **SM2220**) would also be substantially affected by indirect impacts of the proposed new turbines. The turbines will be highly visible to each of the sites, although the intervisibility between the sites, which is perhaps the most significant in terms of their setting, will remain unaffected.

The twenty-four unscheduled monuments within 2km of the proposed wind farm are considered to be common, although archaeologically valuable, sites in this part of Caithness.

<sup>10</sup> Historic Scotland 2010

Although the turbines would be prominently visible to each of the sites, the impact in terms of intervisibility is no different than the presence of the hill itself.

### 6.2.2 Sordale Hill

The cluster of three chambered cairns on Sordale Hill (**SM483**) has been assessed as receiving the greatest indirect impact from the proposed wind farm. Although they are located over 3.8km from the nearest proposed turbine platform, most of the monuments are substantial sites in the landscape. The cairns consist of two highly visible mounds and one substantial, though denuded, cairn chamber. The viewshed across the River Thurso, the natural vista from the monuments, would be broken by the Buckies Hill turbines and this is compounded by the effects of existing and proposed turbines in the same direction. Therefore, it is believed that the Buckies turbines will substantially affect the landscape setting of the monuments.

### 6.2.3 Sites within 2-10km

The proposed turbines will be theoretically visible from thirty-eight SMs within the 2-10km radius of the development. As discussed previously, the monuments appear in distinct groupings and the proposed turbines will not affect intervisibility between the sites in these groupings. However, the wind farm would still be visible from thirty-eight SMs and therefore indirectly affected by the proposal.

## 6.3 Cumulative impacts

In the surrounding landscape, there are two major wind farms and three small turbine sites existing or proposed within 10km of the Buckies Hill site. Within a 20km radius there are eight further existing or proposed wind farm developments of various sizes (Figure 8).

These additional wind farms in the wider landscape will also indirectly affect the forty-two SMs and twenty-four unscheduled sites within 10km of the Buckies Hill turbines. The landscape is wide open with undulating topography allowing for extensive views in most directions from a large part of the sites. The cumulative effects of the Buckies Hill proposal will increase the indirect impact upon these sites, which form a part of a wider landscape that is littered with significant Post Medieval and Prehistoric sites of archaeological and historical interest.

Most, if not all, of the cultural heritage sites within the 10km study area appear not to be curated for public display for visitors. Although they are ruinous and grass-covered, they can still be accessed by an interested visitor. Thus, the increasing number of wind farms will affect the landscape setting and how they are seen by visitors.

## 7.0 Mitigation and recommendations

A 5-metre buffer zone should be maintained around Site 1 and Sites 3-5 during development works. Where necessary, the boundary dykes will be truncated by the access road – but they should otherwise remain undisturbed.

Given the widespread presence of prehistoric sites in the surrounding landscape, it is probable that archaeological remains may still be preserved below the areas covered by peat and below ground-level in general, and this should be taken into consideration during construction. Should any unexpected archaeological remains be uncovered during construction, the Highland Council Historic Environment Team should be notified immediately.

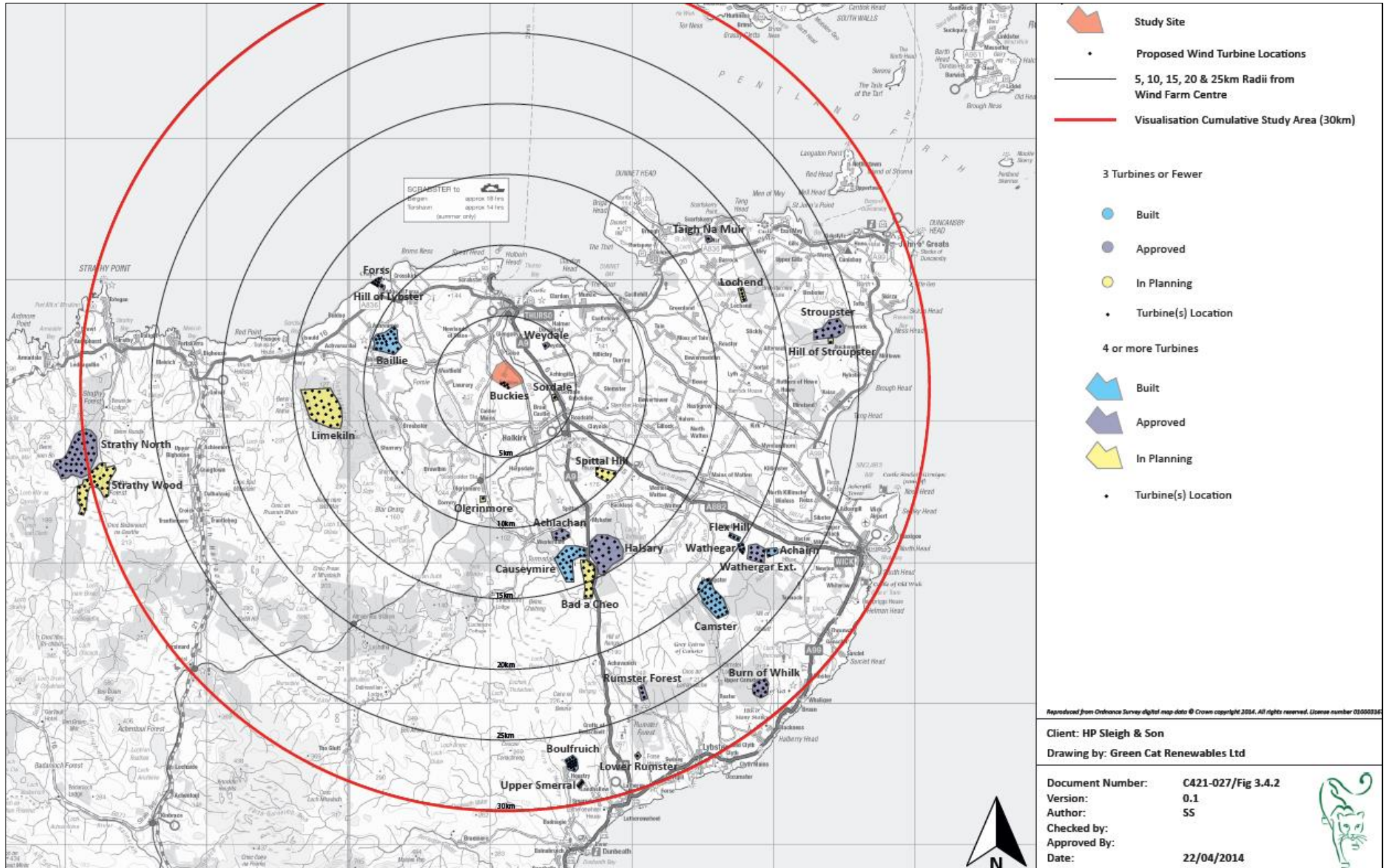


Figure 8 Cumulative basemap showing the locations of operational, consented and proposed wind farms (April 2014)

## 8.0 References

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**APPENDIX 1 Index of Photographs**

Photo No.	Direction Facing	Site No.	Notes	Taken By	Date
1	N	1	A robbed-out field dyke comprising the remains of upright stone slabs embedded into the ground	LF	12/02/2014
2	W	3	A well-preserved field dyke running along the SW side of the proposed wind farm	LF	12/02/2014
3	WNW	-	Large spoil heap from Achscrabster quarry and existing wind farm in the distance at Baillie; photo taken from the W corner of proposed development site	LF	12/02/2014
4	NW	4	Overlooking the remains of a grass-covered sub-oval turf/stone structure cut into a bank	LF	12/02/2014
5	NNW	4	Overlooking the remains of a grass-covered sub-oval turf/stone structure cut into a bank	LF	12/02/2014
6	NE	-	Disused mill pond at Aimster Farm	LF	12/02/2014
7	NNE	SM2658	Ruins of St Thomas' Chapel, SM2658	LF	12/02/2014
8	W	SM2658	Ruins of St Thomas' Chapel, SM2658	LF	12/02/2014
9	SW	SM2658	Ruins of St Thomas' Chapel, SM2658	LF	12/02/2014
10	WNW	SM2658	Overlooking the E end of the enclosure around St Thomas' Chapel, SM2658, facing Buckies Hill	LF	12/02/2014
11	WNW	SM2658	Overlooking the E edge of the site of St Thomas' Chapel, SM2658, facing Buckies Hill	LF	12/02/2014
12	ESE	SM2658	Ruins of St Thomas' Chapel, SM2658	LF	12/02/2014
13	W	SM2236	Looking over North Calder Broch to the west	LF	12/02/2014
14	NNE	SM2236	View towards Buckies Hill from North Calder Broch, showing close views to the proposed wind farm site	LF	12/02/2014
15	NNE	SM2236	Looking over North Calder Broch towards Buckies Hill, showing close views to the proposed wind farm site	LF	12/02/2014
16	WNW	SM2236	View from North Calder Broch towards existing wind turbine at West Calder and spoil heap at Achscrabster; with Framside Broch (SM2220) visible in centre left	LF	12/02/2014
17	ENE	SM2220	Looking over Framside Broch (SM2220), with single turbine at West Calder in centre right and Buckies Hill in centre of image	LF	12/02/2014
18	NE	SM2220	View NE over Framside Broch (SM2220) with Buckies Hill in centre right of image	LF	12/02/2014
19	ENE	SM2220	View from Framside Broch (SM2220), with single turbine at West Calder in centre right and Buckies Hill in centre of image	LF	12/02/2014
20	N	SM2218	Image facing N showing uninterrupted views from Upper Sour Broch (SM2218) to Buckies Hill (in background)	LF	12/02/2014
21	N	SM2218	Overlooking W side of Upper Sour Broch (SM2218) to Buckies Hill (in background)	LF	12/02/2014
22	N	SM2218	Overlooking Upper Sour Broch (SM2218) to Buckies Hill (in background)	LF	12/02/2014
23	NNW	SM2218	Overlooking Upper Sour Broch (SM2218) to Buckies Hill (in background)	LF	12/02/2014
24	W	SM483	Looking W across the northern long cairn (SM483) and over River Thurso to Buckies Hill, demonstrating uninterrupted views from the site to the proposed wind farm site with existing wind farm at Baillie in distant background	LF	12/02/2014

Photo No.	Direction Facing	Site No.	Notes	Taken By	Date
25	WNW	SM483	Looking WNW over the southern-most chambered round cairn (SM483) and over River Thurso to Buckies Hill, demonstrating uninterrupted views from the site to the proposed wind farm site with existing wind farm at Baillie in distant background	LF	12/02/2014
26	WNW	SM483	View showing the highly prominent, segmented long cairn (central cairn) located on the W side of Sordale Hill	LF	12/02/2014
27	WNW	SM483	Looking WNW over the southern end of the central long cairn (SM483) and over River Thurso to Buckies Hill, demonstrating uninterrupted views from the site to the proposed wind farm site with existing wind farm at Baillie in distant background	LF	12/02/2014
28	SSE	SM483	Looking over the southern-most chambered round cairn (SM483) to the SSE showing the large wind farm visible in the far distance to far left	LF	12/02/2014
29	S	SM483	Looking over the southern-most chambered round cairn (SM483) to the S showing the large wind farm visible in the far distance to far right	LF	12/02/2014