

policy is also given in the *Strategic Locational Guidance*. In this document, wild land is ranked as being of high sensitivity and it is stated that:

'By its nature, wild land is sensitive to all forms of development. Given the likely scale and nature of wind farms, it is unlikely that these can be accommodated without loss of wild land qualities. Wild land can also be affected by developments close to its edge.'

7.21. Wild land areas have not yet been formally defined. The *Strategic Locational Guidance* contains a map of 'preliminary search areas for wild land'. There are two search areas for wild land within the study area, to the north and northwest of the site.

ASSESSMENT APPROACH

Overview

7.22. The approach consisted of:

- a baseline assessment, comprising
 - a desk study to establish the existing conditions, including the landscape character of the study area, and the principle visual influences and viewpoints in the area;
 - field survey work to verify the important landscape and visual characteristics of the area highlighted by the desk study.
- an assessment of effects, which included
 - identification of potential landscape and visual impacts of the windfarm, through further desk study to assess the potential effects of the scheme, followed by field survey work to establish views of the site and assess potential effects of the development in both landscape and visual terms;
 - the identification of receptors;
 - evaluation of the potential landscape and visual effects of the windfarm;
 - identification and assessment of cumulative effects.
- identification of potential mitigation measures and residual effects.

7.23. The methodology for the landscape and visual assessment was set out in the Scoping Report, and agreed with Highland Council and SNH. It took into account best practice methodologies, as applicable, notably:

- *Guidelines for Landscape and Visual Impact Assessment*, Landscape Institute and the Institute of Environmental Assessment (2nd Edition, 2002)^{ix};
- *Landscape Character Assessment; Guidance for England and Scotland*, Countryside Agency and SNH (2002)^x;
- *Guidelines on the Environmental Impacts of Windfarms and Small Scale Hydroelectric Schemes*, SNH (2001)^{xi};
- NPPG14: *Natural Heritage* (1989)ⁱⁱ;

- NPPG6: *Renewable Energy Developments* (2000)ⁱⁱⁱ;
- PAN45: *Renewable Energy Technologies* (Revised 2002)^{iv};
- NPPG18: *Planning and the Historic Environment* (1999)^{xii};
- *Cumulative Effects of Wind Turbines; A Guide to Assessing the Cumulative Effects of Wind Energy Development*, Department of Trade and Industry (DTI, 2000)^{xiii}.

Baseline Assessment

Landscape Assessment

7.24. A number of sources were reviewed to understand the landscape character and the value placed upon the landscape of the site and its landscape setting. The desk review also identified the sensitivities of the landscape character types to development. The sources used for the desk review included:

- OS maps (1:50,000 and 1:25,000), geology and soil maps and ecological surveys;
- The *Caithness and Sutherland Landscape Character Assessment* (SNH, 1998)^{xiv} and *Inner Moray Firth Landscape Character Assessment* (SNH, 1998)^{xv};
- Current development plans including the *Highland Structure Plan* (2001);
- Other documents to identify potentially important landscape areas within or adjacent to the site, including documents and registry entries for designated areas;
- Additional documents to provide background information, including *Landscape Strategy and Assessment Guidance for Wind Energy Development within Caithness and Sutherland* (SNH, 1995)^{xvi}, and *The Landscape Impact and Visual Design of Windfarms* (C. Stanton, 1996)^{xvii}

7.25. Field survey work was used to further understand the nature of the landscape around the site, and to identify the principle components that make up the character of the landscape. The landscape character types identified from the published landscape character assessment within the range of the ZVI were reviewed, including specific landscape features contributing to landscape character. Information was recorded through the use of field notes, map annotations and photographic records as appropriate. Photographs were taken with a digital camera, Nikon 'Coolpix 4500'. The photographs were taken at a focal length of 10.3mm, that is equivalent to 50mm using a 35-mm SLR camera.

7.26. A walkover survey of the development site was undertaken to identify those features which contribute to the character of the site or those which are important to its wider landscape setting.

7.27. The field survey included a number of separate visits in differing weather conditions during July, August, September 2002 and March 2003.

Visual Assessment

7.28. Ordnance Survey maps were used to identify the likely visual influences and important viewpoints in the area. Visual influences included topographic features that would enclose or frame views, and important viewpoints were identified using marked viewpoints, hill tops and settlements.

Assessment of Effects

Identification of Potential Impacts

- 7.29. The identification of potential landscape and visual impacts was based on a 'Zone of Visual Influence' (ZVI) that was computed by specific computer software which calculates the (theoretical) intervisibility between the development and its surroundings.
- 7.30. The following digital OS data was used for the computer analysis and the preparation of maps:
- Landform Panorama Data at 1:50,000 which contain 3-D contour and point height information at 10m intervals;
 - Raster Data at 1:50,000 which show surface details such as roads, forestry and settlement detail equivalent to the 1:50,000 scale Landranger maps;
 - Raster Data at 1:250,000 as a more general location map.
- 7.31. ReSoft *Windfarm 3.1* computer software was used to generate the ZVI (**Figure 7.1**). This programme calculates areas from which the turbines are (potentially) visible. This is performed on a 'bare ground' computer terrain model, which does not take account of potential screening by buildings or vegetation. The model uses a 50 x 50m grid that means the computer calculates the number of turbines visible from the centre point of each 50 x 50m square. Because it uses a 'bare ground' model it is considered to over-emphasise the extent of visibility of the proposal and therefore represents a "maximum potential impact" approach. The ZVI was later verified on site to identify the key limitations to the theoretical visibility.
- 7.32. A 'cumulative' ZVI was also generated to calculate the potential combined visibility of the Gordonbush windfarm with the other proposed windfarms within the study area (**Figures 7.2 and 7.3**). A ZVI taking into account the screening effects of forestry has not been included because it was considered that there would be little difference between that considering screening, and the bare ground ZVI, in terms of forest screening from public viewpoints and roads. Areas of forestry can be identified on **Figure 7.1**, and this illustrates that they are unlikely to have screening effects on the public roads.
- 7.33. A number of viewpoints that lie within the ZVI were selected for detailed analysis. The viewpoints have been agreed with Highland Council and SNH, and were chosen according to the following criteria:
- being publicly accessible, except in exceptional circumstances (including private roads and properties with a prominent view of the development);
 - having a reasonably high potential number of viewers or being of particular significance to the viewer(s) affected;
 - providing a representative range of viewing distances (i.e. short, medium and long distance views);
 - providing a representative range of viewing experiences (i.e. sequential views, for example from public highways, and static views, for example from designated viewpoints or car parks);
- ensuring that views from areas recognised for their landscape quality, in particular nationally-designated areas are considered;
 - ensuring that the assessment includes areas with features such as existing pylons, existing/potential windfarms or other 'intrusive' features to enable assessment of the possible effects of the proposal in the context of such features.
- 7.34. Wireframe diagrams, which are simulations of the terrain using the digital height data, were generated for each of the viewpoints, using the ReSoft software. These simulations take into account the curvature of the earth. However, as these are again based upon the 'bare ground' terrain data that do not take account of vegetation or buildings, the actual rather than theoretical visibility had to be verified during field survey.
- 7.35. Photomontages, which are visualisations of the windfarm constructed by superimposing the wireframe simulations on top of photographs taken during field visits, were generated for the views from key viewpoints.
- Landscape Assessment*
- 7.36. Potential landscape impacts during construction and operation were identified during field visits, using the viewpoints as locations to represent the surrounding area. Impacts related to both physical and perceptual changes in the landscape character, including loss or change to the physical elements that make up the landscape, and the qualities of remoteness, scale and tranquillity. Consideration was given to landform, landcover, and the location of any vertical features or changes in ground conditions, and the consequential effects upon both site character and the wider landscape character.
- Visual Assessment*
- 7.37. The visual effects of the windfarm and its associated infrastructure were predicted on site visits to the selected viewpoints, during which the wireframe diagrams were checked and used to predict the visual prominence of the windfarm in the view.
- 7.38. The field survey also involved extensive verification of the extent of the computer-generated ZVI. This provided a more accurate interpretation of the potential visibility of the development, based upon the realities of visual experience, including factors such as screening, seasonality and weather that affect views to the site. It also allowed consideration of the relationship between distance from the site and the relative prominence of the proposed turbines in the wider landscape. It is considered that as distance from the site increases, elements located on the site may be expected to assume a proportionally smaller prominence in the overall landscape. Likewise, closer to the site the development may be more prominent.
- 7.39. Consideration was also given to sequential visual progressions, i.e. the changing views of the proposal as the viewer moves through the landscape (such as when travelling in a car) and to viewpoints from within designated landscapes.
- Identification of Receptors*
- 7.40. Potential receptors of the impacts of the windfarm were identified, and included consideration of the following groups or locations:
- residents of settlements around the site;

- tourist destinations, and interpreted viewpoints marked as viewpoints on the OS maps;
- travelling routes such as railways and well-frequented roads;
- recreational destinations such as parks, hill tops, and walking tracks,
- designated landscapes such as NSAs, AGLVs etc.;

7.41. Consideration was also given to the landscape sensitivity and the importance of the selected viewpoints in terms of the numbers of viewers.

Evaluation Methodology

7.42. The identification of landscape and visual effects included consideration of the following:

- the changes to the landscape or views that would be caused by the introduction of the windfarm and its infrastructure;
- the magnitude of the changes, describing the physical extent of the impacts and therefore consideration of whether the proposal will affect the landscape character of the region, of the local area or of the site;
- the timing of the impact, i.e. whether the impact would occur during the construction phase or the operational phase or both, and whether it would be of short (for the duration of the construction period) or long term duration (for the 25 year operation lifespan of the windfarm);
- the likelihood of occurrence of the impact (i.e. a judgement regarding the chances of change in the view or alteration in the perception of the landscape);
- the reversibility of the impact;
- whether the effect is direct or indirect, for example, disturbance has a direct impact on the moorland vegetation, whereas the change to landscape character of an area from which the windfarm is visible, is an indirect effect as it involves our perception of the landscape;
- the importance of the impact in terms of policy, for example, impacts on a National Scenic Area (NSA) are of national policy importance, whereas impacts on local undesignated areas are of local policy importance;

7.43. In the assessment of visual impacts, the guidance set out in PAN45^{iv} has been considered, which describes the relative prominence of a windfarm in the view in relation to the distance from which the windfarm is viewed. However, the terms ‘dominant, prominent, present or negligible’ within the view are used in this assessment to describe, in particular, the role that the proposed windfarm will play in the view. While the distance at which the proposal is seen influences this, factors such as the proportion of the windfarm visible, and the prominence or dominance of other focal features within the view are also considered.

Table 7.3: Visual Impact Magnitude

Magnitude	Definition
Dominant	the feature has a defining influence on the view and is a focus in the view
Prominent	the feature is clearly visible in the view and forms an important but not defining element of the view
Present	the feature is neither dominant nor prominent, but is visible in the view
Negligible	the feature is visible but may go unnoticed as a minor element in the view, or is not visible

Significance Criteria

- 7.44. EIA Regulations^{xviii} require the assessment to identify the significance of each effect. The significance descriptors used in this assessment are major, moderate, minor and negligible.
- 7.45. Significance was not calculated by means of a prescribed formula. Judgements about the significance of effects were based upon the total information available about the effects, and took particular account of important considerations that have been discussed for each individual effect.
- 7.46. Some EIA guidelines^x suggest that effects should be scaled against the sensitivity of the landscape and of visual receptors, to achieve a measure of significance in accordance with the EIA regulations^{xix}. In the assessment of effects on the landscape, landscape sensitivity has not been scaled on a rigidly scientific basis. Sensitivity has been discussed in more general terms during the assessment and taken into account as a material consideration for assessing effects on the landscape.
- 7.47. Guidance on EIA recommends that ‘sensitive’ receptors should be identified during assessment of visual effects. However, in assessing the visual effects of a development proposal, it is debatable whether one viewer can be judged as being ‘a more sensitive receptor’ than another. Some will argue that a tourist visiting the area on a one-off basis is more ‘sensitive’ to a change in view than a local person. However, it is felt that such judgements cannot be made objectively.
- 7.48. Even if such a judgement could be made, one should be aware of the receptors’ ‘predisposition’ towards the type of development subject to the assessment (some people like windfarms, others do not). The duration of the view will also need to be considered, i.e. whether the windfarm is seen on one occasion, or as a fixed point residents’ view for the duration of the life time of the development. Whilst the type of viewer that may be affected has been noted (e.g. traveller, tourist, resident) the relative ‘sensitivity’ of different viewers has therefore not been judged. Instead, this assessment has considered the importance of the viewpoint in terms of numbers of viewers, during the selection of viewpoints and the assessment of effects.
- 7.49. Overall, therefore, significance of effects is assessed with consideration to all aspects listed above, and summarised in **Table 7.4** below.

Table 7.4: Significance of Landscape and Visual Effects

Significance	Landscape Assessment	Visual Assessment
Major	changes affecting the character of the landscape or loss of, or material change to, major features therein, substantially	the development results in substantial changes in the view
Moderate	changes affecting the character of the landscape or the elements therein	the development results in clearly visible changes to the view
Minor	slight changes affecting the character of the landscape or specific elements therein	the development results in slight changes to the view
Negligible	no or minimal perceptible changes affecting the character of the landscape or specific elements therein	the development results in hardly perceptible or no changes to the view

Assessment of Cumulative Effects

7.50. The *Guidelines for Landscape and Visual Impact Assessment* (2nd edition, 2002)^x define cumulative effects as

'landscape and visual effects [that] result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.'

7.51. Cumulative effects of windfarms can be considered in a number of different ways:

- multiple windfarms may be visible in one single view;
- multiple windfarms may be visible from the same viewpoint;
- multiple windfarms may be visible when travelling through the landscape, they may or may not be intervisible.

7.52. The cumulative assessment has considered windfarms within 30km of viewers or viewpoints within the study area. For viewers or viewpoints at the extremities of the study area, therefore, windfarms of up to 60km from the site are considered where there could be a view in one direction to Gordonbush, and in the opposite direction a view of another windfarm.

7.53. In this assessment, the potential cumulative visual and landscape effects of the windfarm have been considered in relation to windfarm developments within 60km of the Gordonbush site at various stages of development or planning. Sites considered in the cumulative assessment included constructed sites and consented sites, sites subject to planning application and sites at the scoping stage where the layout information was available.

7.54. The assessment of cumulative impacts considers the additional impacts of the introduction of the proposed Gordonbush windfarm, assuming that all of the other windfarms are present in

the landscape. In practice, however, this is not the case, as most of the windfarms considered are not present in the current landscape.

EXISTING SITUATION

7.55. In this section the existing conditions of the landscape around the site and the study area are described, to provide a base against which changes to the landscape and views, caused by the introduction of the windfarm, can be assessed. The existing conditions are described in terms of the landscape context, and then in terms of characteristics of the site itself.

Previous Studies

7.56. Previous studies regarding the landscape character of the area include the *Landscape Character Assessment of Caithness and Sutherland*, published by SNH^{xv}. This has been used as a reference for the desk review.

Landscape Context

7.57. The site is located in an area of rolling mountains on the east coast of Sutherland. It is on the eastern edge of a primarily metamorphic, mountainous region that includes Ben Klibreck (at 961m AOD), Ben Hope (at 927m AOD) and Ben Loyal (at 763m AOD). To the east of the site, there are sedimentary rocks of Devonian age, as well as some intrusive rocks. Along the Brora to Helmsdale coast, there are sedimentary rocks of Jurassic age.

7.58. The land use and cover in the area surrounding the site comprises predominately of high moorland plateaux mixed with some areas of coniferous forestry. In the wider landscape the land use becomes more mixed and includes open high moorland plateau; extensive peatland; high mountain peaks; forestry plantations; highland straths with small farming and crofting properties; semi natural birch woodland; and coastal arable and grazing farmland. Settlements and the main transport network are concentrated upon the eastern coast and straths, including the small towns of Helmsdale, Brora and Golspie, and along straths.

Moor and Peatland

7.59. A large proportion of the study area is occupied by open heather moorland, which is generally devoid of tree cover. The peatlands are extensive in the Caithness and Sutherland region, and constitute vast areas of undulating heather moors with a deep peat base.

Forestry and Woodland

7.60. Forestry is a prominent land use in the wider area and is characterised by large, coniferous plantations, which often cut unsympathetically across upper slopes. Estate woodlands are present in the lower, more sheltered straths and contain some ornamental planting. Areas of semi natural woodland exist along watercourses.

Agriculture

7.61. Agricultural farmland (principally good quality grazing and some arable land) is located mainly along the coast to the east of the site and along straths. Further from the coast the agricultural land use tends to become limited to semi-improved pasture and rough grazing in fields or open moors.

Settlement

7.62. Generally, most settlements are concentrated along the coast. Such settlements include Golspie, Brora, Portgower and Helmsdale. The largest settlements close to the site are Brora, a small town about 9km southeast on the coast and Helmsdale 14km to the east. Along the straths settlements tend to be smaller, scattered and located on road and/or rail routes, such as Kinbrace, Kildonan and Rogart.

Communications and Infrastructure

7.63. As with settlement, the main transportation corridors are located along the eastern coast and along the straths. The principal road is the A9(T) that runs from Thurso in the far north, along the east coast to Inverness and the south. The A839 links the A9 through Strath Fleet to Lairg and the west. The A897 links Helmsdale along Strath of Kildonan to Melvich on the north coast. There are a few minor roads that connect the main road arteries with smaller communities, properties and remoter areas such as the roads through Glen Loth, Dunrobin Glen and Strath Brora. There are few vehicular roads to the west and northwest of the site except the occasional estate track which are generally inaccessible to public vehicles.

Landscape Character

7.64. The character of the landscape of the surrounding the site is described in the Landscape Character Assessments (LCA) for *Caithness and Sutherland*^{xv} and the *Inner Moray Firth*^{xvi}. A wide range of the landscape character types described in the *Caithness and Sutherland* LCA, and two from the *Inner Moray Firth* LCA occur within the study area (**Figure 7.4**). The character types present in the study area extending to 30km radius around the site at Gordonbush are listed in **Table 7.5**.

7.65. The site straddles a boundary between *Sweeping moorland* and *Moorland slopes and hills*. **Table 7.6** describes the characteristics of the landscape character types that lie within 10km of the windfarm site.

Table 7.5: Landscape character types within the study area

Landscape Character Assessment	LCT code ¹	Landscape Character Type (LCT)
Caithness and Sutherland	1	<i>Sweeping moorland</i>
	1a	<i>Flat peatland</i>
	2	<i>Moorland slopes and hills</i>
	4	<i>Lone mountains</i>
	6	<i>High cliffs and sheltered bays</i>
	7	<i>Long beaches, dunes and links</i>
	8	<i>Kyles, firths and sea lochs</i>
	9	<i>Strath</i>
	10	<i>Coastal shelf</i>
	11	<i>Harbour</i>
	12	<i>Town</i>
	14	<i>Mixed agriculture and settlement</i>
	15	<i>Small farms and crofts</i>
	15c	<i>Small farm and crofting areas with new housing</i>
	15d	<i>Areas of small farms and crofts surrounded by woodland</i>
	15e	<i>Fringe crofting and historic features</i>
Inner Moray Firth		<i>Coniferous woodland</i>
		<i>Broadleaf or mixed broadleaf and coniferous woodland</i>
		<i>Hard coastal shore</i>
		<i>Open farmed slopes</i>

¹ this is the code with which the landscape character type is referred to in the landscape character assessment document.

Table 7.6: Landscape character types within 10km of the windfarm.

Landscape Character Type		Description
1	<i>Sweeping moorland</i> the site lies partly in this landscape character type	<ul style="list-style-type: none"> • Extensive areas of interior of Sutherland and Caithness. • wide open space • simple visual composition • fairly flat, gently sloping or undulating landform • directs attention towards foreground details and other experiential characteristics • may contain lochs and/or meandering rivers or streams bordered by ribbons of broadleaf woodland • occasional pockets of improved grazing • settlements generally restricted to outer edges • service elements which tend to be highly visible • coniferous woodland • very flat land of vast scale peat bog (Type 1a)
2	<i>Moorland slopes and hills</i> the site lies partly in this landscape character type	<ul style="list-style-type: none"> • Large areas of upland landscape, extensive in Sutherland, but more limited in Caithness • sloping open moorland which limits distant visibility and views of the hill tops • overwhelmingly open • variable character of groundcover – heather, rock, grass or bog • rocky crags • numerous minor foci due to the spacing of hill tops and plateaux • settlement restricted to the edge of this landscape type • fragments of broadleaf woodland may occur • coniferous plantations
9	<i>Strath</i>	<ul style="list-style-type: none"> • Major river channels • linear space focused on river or loch which forms central visual focus • water a key characteristic • variety of land uses • concentration of access routes • settlements concentrated at bridging points • ribbons of broadleaf woodland.
10	<i>Coastal shelf</i>	<ul style="list-style-type: none"> • Eastern coastal edge of Caithness and Sutherland • linear space • semi-enclosed with seaward views on one side, screen of inland hills on the other • elevated platform • open skies with distinctive coastal light • pattern of land use largely reflects linear space • narrow and steep glens intersecting the landscape at regular intervals, and small towns within them create rhythm • agriculture, • strong sense of historical influence and linear crofts • encompasses both land and sea environments, and is dominated by character of both, and the balance between them

Landscape Character Type		Description
15	<i>Small farms and crofts</i>	<ul style="list-style-type: none"> • Small settled areas around the site e.g. around Brora, Dalreavoch and Rogart. • dominated by occupation and activity of people • complex variety of different land uses • common elements including housing, outbuilding, fences, woodland remnants, access roads, powerlines, etc. • diverse yet confusing • agricultural context • small villages, or several crofting units • ruined crofts
15c	<i>Small farm and crofting areas with new housing</i>	<ul style="list-style-type: none"> • As 15 and; • new houses usually contrasting in style with old crofts
15e	<i>Fringe crofting and historic features</i>	<ul style="list-style-type: none"> • As 15 and; • strong sense of history and cultural change and ancient and ruined structures highlighted
	<i>Coniferous woodland</i>	(no type description)

7.66. As the landscape is dynamic, there have been changes in the landscape since these landscape character assessments were carried out. However, based on site visits to the study area, it is not considered necessary or appropriate to update or revise the landscape character descriptions.

Site Landscape Character

7.67. The site lies on a boundary of *Sweeping moorland* with *Moorland slopes and hills*. In the field, the boundary is not clearly defined, and reflects a landscape continuum that is transitional between these types.

7.68. *Sweeping moorland* and *Moorland slopes and hills* occur extensively throughout the study area as defined in the *Caithness and Sutherland LCA*, and are both characterised by open moorland with a sense of vast openness and remoteness. The main difference between these landscape types is the underlying topography, while landcover, and the remoteness and sparsity of settlement are similar. *Sweeping moorland* is of gently undulating topography, whereas *Moorland slopes and hills*, as the name suggests, is more variable. The landscape of the site is therefore one of open moorland at the foot of a range of hills, and at the edge of an extensive area of flatter land.

Factors Affecting the Perception of Landscape Change

7.69. In addition to the physical expression of the landscape, there are a number of factors that affect perception and experience of the landscape. Changes in perception affect human response to the landscape and may influence the perceived effects of the proposal.

Climate and Weather Conditions

7.70. Climate and weather conditions affect visibility. The main influences are sunshine, aspect, precipitation and day length. Generally, Scotland is fairly cloudy due to the frequency of low-pressure systems from the Atlantic. In addition, winter days are short whereas summer days are very long especially in the far north. Precipitation (rainfall and snowfall) is variable and determined by topography and geographic location. Generally, the Gordonbush area has lower annual rainfall than many parts of the country further to the west.

7.71. Because this part of Scotland is remote from industrial areas and therefore benefits from clean air, the visibility can sometimes be exceptional, with views across very long distances. However, equally, the weather conditions, including 'haar' or sea fog can severely limit visibility.

Accessibility

7.72. Accessibility affects where in the landscape people can go and therefore which parts of the landscape they can see and how these are reached. Vast areas of the landscape to the west and northwest of the site are not readily accessible except by estate tracks that are normally private. A small network of minor roads provides access to isolated farms and properties in the area to the southwest, north of Rogart and around Brora. Secondary roads form connections through Strath Brora, Glen Loth, Dunrobin Glen and Strath Fleet while the main artery of the A9(T) runs between Inverness and Thurso along the coast.

7.73. Hills such as Ben Horn, Beinn Bhragaidh, Beinn Dhorain, Morven and Scaraben as well as the area around Loch Brora are popular walking routes with locals and visitors alike due to their accessibility from roads. Ben Klibreck is the only Munro in the area although its summit is beyond the 30km radius of the study area.

Designated Landscapes

7.74. The area surrounding the site is covered by a number of designations of varying policy importance. These are shown in **Figure 7.5** and described below:

National Scenic Areas (NSA)

7.75. The Dornoch Firth NSA, 26km to the southwest of the site, is one of forty such nationally designated landscapes. The NSA designation applies to 'those areas of land considered of national significance on the basis of their outstanding scenic interest or unsurpassed attractiveness which must be conserved as part of the country's natural heritage.' The Dornoch Firth NSA is valued for its large tidal water body and the hills and mountains that surround it. The designation covers the firth and the surrounding hill slopes from Bonar Bridge to Dornoch and Portmahomack.

Areas of Great Landscape Value (AGLV)

7.76. The AGLV designation is defined by the local authority in development plans with a view to safeguarding areas of regional or local landscape importance and there are two such areas at present.

7.77. The Loch Brora AGLV covers the eastern part of Loch Brora only.

7.78. The Loch Migdale AGLV covering Loch Migdale east of Bonar Bridge, and its immediate shores.

Proposed AGLVs

7.79. The following AGLVs are proposed at present within the study area:

- Ben Horn: extending south from the A897 between Helmsdale and Ben Uarie, inland of Brora, covering Loch Brora (taking in existing Loch Brora AGLV), Ben Horn and Beinn Lunndiadh, and extends to Loch Fleet. The site is adjacent to the proposed AGLV boundary, which runs over Beinn Smeorail and Meallan Liath Beag;

- Ben Klibreck: covering Ben Klibreck, Beall a Bhala, Creag na h-Iolair and Creag Mhor;
- Achentoul: including Ben Griam Mor, Ben Griam Beg, Loch an Rhuthair, and extending west to Loch Rimsdale;
- Morven: this area covers Creag Scalabsdale, Morvern, Ben Alisky, to the A9, and extends to Knockfin Heights near Kinbrace, and a section of coast from Ousdale to Newport.

Historic Gardens and Designed Landscapes (HGDL)

7.80. Historic Gardens and Designed Landscapes in the surrounding area are listed in *An Inventory of Gardens and Designed Landscapes in Scotland (1987)*^{xix}. NPPG18^{xiii} requires that these be considered in the EIA. These are shown on **Figure 7.5** and include:

- Dunrobin Castle, Golspie;
- Kildonan Lodge, Kildonan;
- Langwell House, Berriedale;
- Skibo Castle, near Dornoch.

Wild Land

7.81. The SNH approach to wild land is set out in the research report *Wildness in Scotland's Countryside*^{xx}. According to this document, the physical attributes of wild land include:

- a high degree of perceived naturalness;
- the lack of any modern artefacts or structures;
- little evidence of contemporary human uses of the land;
- landform which is rugged, or otherwise physically challenging; and
- remoteness and/or inaccessibility.

7.82. In addition to these criteria, it can be considered that the aspect of weather is very important in the perception of 'wildness' of an area. This is in part because of the changes in visibility with the weather, which can restrict views to very short distances, making the landscape seem more remote than it does when views are more distant.

7.83. The map of 'preliminary search areas for wild land' in *Wildness in Scotland's Countryside* shows two search areas for wild land within the study area. One search area includes Beinn Dhorain, and the land to the south of the A897 to Ben Armine Forest and Ben Klibreck, and south to the edges of Strath Brora. This area includes the site.

7.84. The second wild land search area within the 30km radius study area lies between the A897 and the A9, including Saraben, Creag Scalabsdale, Morvern, and Cnoc Coine na Fearnna.

Archaeological sites

7.85. **Chapter II** considers the effects of the windfarm on the archaeological heritage. There are two archaeological sites in the wider landscape for which Historic Scotland has requested that the impacts on the landscape setting be considered. These are a cairn on Balnacoil Hill (NC

810 115) and a tumulus near Ascoile (NC 830 105), which are not Scheduled Ancient Monuments.

Forces for change

- 7.86. Forces for change are those that are currently affecting the evolution of the landscape and which may, consequently, affect the perception of the windfarm in the near or distant future. Prediction of these forces is necessarily speculative, but nevertheless are discussed briefly below.

Industry

- 7.87. Any future industrial expansion is likely to be limited to areas adjacent to the main transport corridors and existing settlements located near the coast and possibly in the straths. A logging facility has been established at Kinbrace where timber is loaded onto trains to be transported south.
- 7.88. There have been other windfarm proposals in the surrounding area and it is viewed that wind energy development is a force of change.

Agriculture

- 7.89. Agriculture within the region will continue to be influenced by the provision of subsidies and grants through the Common Agricultural Policy (CAP) (which is currently under review) including the Crofting Counties Agricultural Grants (CCAG's) and the introduction of the Rural Stewardship Scheme. It is not clear how these will affect future agricultural activity in the area, although it is likely that subsidies will be reduced and undergo a shift from production and headage based payments towards the wider concept of rural stewardship on the basis of modulation. It is anticipated that changes to the landscape will result from changes in animal husbandry and policies towards rural protection.

Forestry and Woodland Cover

- 7.90. There are large areas of coniferous forestry within the study area. The present screening effect and / or visual relationship of forestry may change in the future along with perception of the proposed windfarm. Any restructuring of forests in the long term, especially in the Straths, is likely to bring about beneficial effects on landscape character as diversity is increased and planting to improve design boundaries is attained.
- 7.91. The recently introduced Scottish Forestry Grants Scheme encourages the planting of new native woodlands. Beneficial effects on landscape character are likely to occur in the future as these woodlands become more visually significant with age.

Housing and Settlement

- 7.92. The area is suffering from gradual depopulation, as is much of the Highland region as people seek employment and education elsewhere. It is not envisaged that there would be any major housing developments within the study area. Any growth would probably be limited to current settlements and transport corridors.

Sensitivity

- 7.93. Sensitivities of the landscape character types that exist within the study area are described in the *Caithness and Sutherland LCA*. For the *Moorland slopes and hills* landscape character type and in relation to wind energy development, the *Caithness and Sutherland LCA* states:

'A windfarm will relate to the exposed and wind dominated character of this landscape, and may appear as a positive, futuristic-looking and sculptural addition. However, it may also conflict with the sense of remoteness and 'wild land' character of many locations, particularly if a development requires associated facilities such as access tracks and substations.

'It is invariably difficult to locate numerous wind turbines within this landscape without creating a confusing visual image, on account of the variable nature of the sloping landform.'

- 7.94. For *Sweeping moorland* landscape character type, the *LCA* states:

'This landscape character type may be favoured for windfarm development on account of its typically consistent and high wind speeds, and its open space and fairly flat landform. A windfarm will relate to the exposed and wind dominated character of this landscape, and can appear as a spectacular, futuristic-looking and sculptural addition. However, it may also conflict with the sense of remoteness and 'wild land' within many areas, particularly if a development requires associated facilities such as tracks and substations.'

Site Landscape

Landform

- 7.95. The site is gently sloping to the southwest and lies at an elevation between 300m and 400m AOD. High points enclose the site to the east including Meallan Liath Beag (476m AOD), Meallan Liath Mor (509m AOD) and Beinn Smeorail (486m AOD). Beyond the site to the north and south the topography drops over slopes and knolls towards Strath of Kildonan and Strath Brora respectively. The plateau extends west of the site maintaining an average height of approximately 250m AOD.
- 7.96. Most of the site is covered by peat, which overlies glacial till. Bedrock in the area is of siliceous granulate, with outcrops / veins of granite in the vicinity of principal watercourses in the area.
- 7.97. The turbine area is drained by the surface water catchments of the Brora River. The principal streams flowing south from the proposed turbine area into Brora River are Allt Smeorail and Allt a' Mhuilinn. To the north, over the ridge that defines the northern boundary of the site, Achrindle Burn and several minor water systems drain into the Craggie Water and thereafter into the River Helmsdale.

Landcover and Landscape Elements

- 7.98. The landcover of the site comprises blanket bog, modified blanket bog and low growing heathland. There are few trees except some semi-natural birch woodland that exists within the sheltered burn valleys. There are no boundaries although there are strong vertical elements in the form of an overhead high voltage power line that crosses the site from north to south on its western edge. Two access tracks lead up to the southern edge of the site.

Landscape Character

- 7.99. The landscape character of the site is a transitional landscape between the *Sweeping moorland* and *Moorland Slope and Hills* landscape character types described in the *Caithness and Sutherland Landscape Character Assessment*, and conforms to the shared characteristics of the types. The site itself has little visual focus except the backdrop of hills adjacent to the site, namely Meallan Liath Beag, Meallan Liath Mor and Beinn Smeorail.

Future Situation without the Scheme

- 7.100. In the absence of the windfarm it seems probable that the existing management practices will continue. Consequently, the character and visual contribution of the site to the wider landscape will remain as it currently is. Alternatively, it is possible that there could be an alternative windfarm proposal over all or part of the site.

ASSESSMENT OF POTENTIAL EFFECTS

- 7.101. The assessment of potential landscape and visual effects is based on the scheme as set out in the scheme description (**Chapter 6**). The assessment of impacts assumes good practices in terms of construction and operational works, and is subject to the following parameters:
- that the turbines will not be higher than 107m to the blade tip, and there will be no more than 35 turbines;
 - that the turbines will be a pale, non-reflective pale grey colour;
 - that the turbines will be located in the positions indicated in **Figure 6.1**;
 - that transformers will be external, at the foot of each of the turbine towers, and will be the same colour as the turbines;
 - disturbed areas will be reinstated post construction;
 - that turbines will be removed at decommissioning; and
 - clear visibility to the site.

Assessment of the Effects on Landscape Character

Construction Effects on Landscape Character

- 7.102. This section describes the potential effects of the temporary facilities and activities that will occur during the construction stage, upon the landscape of the site and on local landscape character.

Temporary facilities

- 7.103. The temporary facilities that will be on site during the construction stage include the site compound, and the borrow pits. The site compound will be a 50m x 50m hardcore area with portacabins surrounded by temporary fencing. Because this area will be reinstated and is therefore a temporary impact, the effect on the landscape character is judged to be **minor**.
- 7.104. There will be up to three borrow pits, located on the upper slopes of the Smeorail Burn near the access track south of the turbine area (see **Figure 6.1**). These will be hidden from the

wider landscape, but will be visible from the burn's catchment area and the top of Beinn Smeorail as well as the existing access track. The borrow pits will be approximately 10m deep, and will have a combined footprint of approximately 100m by 115m. The borrow pits will be partially reprofiled and partially reinstated after use, and the overall effect is considered to be **minor**.

Temporary activities

- 7.105. The introduction of construction vehicles, cranes, materials and personnel will affect the open upland moorland character of the site. The activity will alter the remote character of the site while the works are ongoing, but is temporary, such that the effect on the landscape character of the site is judged to be **minor**.
- 7.106. The construction activities will include the disturbance of areas of land adjacent to tracks, along the route of the underground cables, and immediately around the turbine bases. These are localised areas of disturbance, relative to the extent of the site as a whole, and will be reinstated. The effect will therefore be **minor**.

Ongoing and Operational Effects on Landscape Character

- 7.107. The effects of the windfarm on landscape character, as experienced from specific locations, is considered within each of the viewpoint assessments below. However it is necessary to consider the general overall effect which the windfarm will have on the landscape character of the area.

Impact upon the character of the landscape types in which the proposal is situated

- 7.108. The *Sweeping moorland* and *Moorland slopes and hills* landscape types are found extensively throughout the area covered by the *Caithness and Sutherland LCA*. The turbines will introduce a strong vertical element and movement in the currently still landscape at Gordonbush, and may become a defining character of the landscape in that location. However, they will not affect other areas where the landscape types are found. They will therefore not become a defining character of these landscape types as a whole, and the effect of the proposal on the *Sweeping moorland* and *Moorland slopes and hills* landscape character types is judged to be **minor**.

Impact upon adjoining landscape character types

- 7.109. The ZVI of the site extends to include visibility from many other landscape character types within the study area. Principal landscape character types have been described in **Table 7.5**. The presence of a windfarm in this area could impart 'borrowed character' i.e. imparting to a distant place within the ZVI the appearance of a landscape with more human intervention, because the windfarm is visible, even though the windfarm is not physically in that character area.
- 7.110. Some areas of other character types such as *Small Farms and Crofts*, *Fringe Crofting* and *Historic Features*, *Strath* will have less significance in terms of 'borrowed character' effect but will still be noticeable. This is because many of these types have views of or are surrounded by the much larger undeveloped and 'wild' character types such as *Sweeping Moorland* and *Moorland Hills and Slopes* even though they themselves are more developed and contain human landscape elements. Overall the effect is judged to be **minor** as only a few areas within these viewpoints will have views of the windfarm.

7.111. Overall, the effect of the windfarm on the landscape character of the surrounding study area is judged to be **minor**

Assessment of Visual Effects

Visibility of Construction

7.112. The activity associated with the erection of the wind turbines will be the most visible part of the construction process as the turbines will be the largest structures on the site. In particular the cranes used during the construction process will be visible from parts of the surrounding landscape, such as Beinn Smeorail, Sciberscross, Meallan Liath Beag and The Craggan. The effect of the construction of the turbines is judged to be of **minor** significance as these activities will not be visible from many public vantage points within 10km, and construction activity is temporary.

7.113. Lighting may be necessary during the construction period. This may be required during the construction of tower bases or tower erection. Construction vehicles with lights may be seen moving around the site. There is currently no lighting in this area and any construction lighting may therefore be visible. Given the short term duration of the construction period, this impact is judged to be **minor**.

On-site infrastructure

7.114. The access track route, as described in **Chapter 6**, will follow the existing estate track route up Allt Smeorail, but as it does not extend onto the site itself, new site tracks will also be required to service the turbine area. The site tracks will be one of the first features of the windfarm that is visible from the surrounding landscape, representing the first point at which the visual effects of the development become noticeable. The effect of the access tracks on views from the surrounding area are discussed under individual viewpoints from which the access tracks can be seen.

7.115. Three permanent monitoring masts will be located on the site. The masts will be of lattice construction and a typical example is provided in **Figure 6.6**. Due to their lattice construction, potential visibility of such lattice masts quickly reduces as the distance to the viewer increases. The potential visibility of the temporary monitoring masts at distances of 5km and greater has not been considered. At distances of between 2km and 5km, the potential visibility of the permanent monitoring masts is judged to be very limited and only apparent in certain weather conditions. The potential visual effect of the proposed permanent monitoring masts is judged to be **negligible**.

Assessment of Ongoing and Operational Visual Effects

7.116. The ZVI (**Figure 7.1**) shows the theoretical visibility of the windfarm. Field survey work has been undertaken to verify potential views on the ground ZVI and to appraise the overall visibility of the windfarm. This appraisal describes views from different distances from the windfarm in the surrounding area. The ZVI reveals that the proposed development will not be seen from the A9(T), the principal road corridor in the area and the associated settlements along the coast to the east of the site.

Close views (0-5km)

- Views of the windfarm will be possible from most of the upland moorland plateaux and include several high points including Beinn Smeorail (486m AOD), Col-bheinn (538m AOD), Meallan Liath Mor (509m AOD), Meallan Liath Beag (476m AOD) and Cnoc a' Chrubaich Mhoir (421m AOD). These hills also provide some screening from the north and east. Beinn Dhorain (628m AOD) to the east will have views of the site.
- The few properties, Ascoile, Gordonbush and Oldtown (Craggie, to the north of the site is uninhabited) within 5km of the site will not have views of the windfarm, nor will there be views from the Strath Brora road where it passes within 5km of the turbines, i.e between Oldtown and Balnacoil;

Mid-range views (5-15km)

- There will be views of the site from the large areas of upland moorland to the west, northwest and southwest;
- Ben Horn (521m AOD) and Beinn Bhragaidh (394m AOD) to the south will have views of the site;
- There are likely to be few views from Strath Brora due to the convex landform of the slopes of the strath. There may be limited views from the southern shore of Loch Brora. People travelling east along the Strath Brora road will get views near Sciberscross although, with current tree cover, these will be more limited than indicated on the ZVI as the established semi-natural birch woodland will provide some screening. Glimpses of few turbines may be possible from the northern stretch of the Glen Loth road as it approaches Kildonan;
- People travelling along the A897 near Kildonan may have views of a small number of turbines if they look southwest although existing woodland may screen and/ or break these views. There are also several properties in the Strath of Kildonan that may be visual receptors;
- The topography of the area means that the site is hidden from most areas in the east including the A9(T), and properties at Lothbeg, Achrimsdale, East Clyne, West Clyne and Brora.

Distant views (15-30km)

- The proposed windfarm will not be seen from Helmsdale, Golspie or other coastal settlements along the A9(T);
- There may be views of the development from Kinbrace to the north although these may be limited due to the screening effect of buildings, topography of the site and presence of village infrastructure. Possible receptors include people at the cemetery, railway station, post office, the A897, the B871 and several properties;
- Extensive views of the windfarm will be possible from large areas of moorland and peatland to the west and southwest. A few estate tracks such as the Ben Armine Lodge access tracks will have views of the site although the Lodge itself will not have views. Due to topography, views within the vast moorland areas to the west become restricted to high points beyond 20km;

- Mountain and high points that will have views include Morven (706m AOD) and Scaraben (626m AOD) to the northeast. It will also be visible from Ben Griam Mor (590m AOD) and Ben Griam Beg (580m AOD) and some surrounding moorland. The windfarm would also be visible from the eastern ridge of Ben Klibreck as this lies just within the ZVI, but the summit (at 961m AOD) lies outside 30km;
- There will be open distant views of the windfarm from some properties in the upper reaches of Strath Brora such as Craggie Beg and Langwell;
- Due to local topography, the windfarm would not be visible from Forsinard including the RSPB centre and walkway;
- There are a limited number of properties on the upper, southern slopes of Strath Fleet that will have distant views of the site;
- A small number of turbines may be visible from coastal areas at Dornoch and Tarbat Ness to the south, and for some parts of the outer Dornoch Firth;
- There are limited views from the sea between 15 and 30km from the site.

Selection of Viewpoints

- 7.117. The assessment of ongoing and operational effects includes the assessments of the effects upon views and landscape character as experienced in the area around the proposed windfarm. For this purpose, viewpoints have been chosen from which to sample this experience of the landscape.
- 7.118. On the basis of the criteria described earlier in the chapter (paragraph 7.33) and as a result of consultations, a total of 17 viewpoints were selected for assessment from an extensive list of preliminary viewpoints. Due to the lack of views from many of the settlements within the study area, many of the viewpoints selected are from elevated locations and provide unimpeded views of the windfarm. Such views will not be identical to views experienced from locations at lower elevations shown as having theoretical views on the ZVI (**Figure 7.1**). The selected viewpoints are therefore not representative of views from the study area as a whole, but are chosen to illustrate views from locations known to have views of the windfarm and therefore likely to incur effects.
- 7.119. The viewpoints selected for assessment, and agreed through consultation with Highland Council and SNH are outlined in **Table 7.7** and their locations are shown in **Figure 7.6**.

Table 7.7: Viewpoints selected for assessment of effects

Viewpoint		OS Grid Reference	Distance*	Selection Criteria
1	Cnoc Caoruinn, Ben Armine Estate	NC 713 210	15.1	Representative of mid-range views from remote moorland to west of site.
2	Kinbrace Cemetery	NC 859 314	14.9	Representative of public and private views from Kinbrace village at a place where people congregate. A mid distance view. Potential for assessment of sequential viewing experiences with 3, 4 and 16.
3	A897 north of Kinbrace	NC 881 396	23.3	On the A897, a popular tourist route between Helmsdale and the north coast. Distant view. Sequential view with 2, 4 and 16.
4	A897 Kildonan	NC 922 200	6.5	Representative of views from nearest properties outside Gordonbush Estate, the A897 and railway. Near to middle distance and sequential view with 2, 3 and 16.
5	Creag nam Fiadh, Borrobol Forest	NC 841 237	8.6	Summit in open remote moorland to northwest of site, middle distance view.
6	Ben Horn	NC 809 064	9.1	Popular hill with panoramic views, to the south of Strath Brora. Mid-range view.
7	Gordonbush access track	NC 849 119	2.0	Private estate track. Possible local walk and representative of short distance view on access track.
8	South Loch Brora	NC 841 089	5.1	Popular local walk along the southern shores of Loch Brora. Popular also with bird watchers and anglers. Near distance view.
9	Ardachu Road, Strath Fleet	NC 676 035	20.6	Representative view from properties on the upper, southern slopes of Strath Fleet. Distant view.
10	Morven	ND 004 288	18.5	Popular, landmark hill for walkers to the north of the windfarm. Highest hill in Caithness and eastern Sutherland. Long distance view.
11	Beinn Bhragaidh	NC 813 010	12.4	Near site of Duke of Sutherland Monument which is a distinctive landmark in wider landscape. Popular local walk. Mid distance view.
12	Craggie Beg	NC 738 081	13.0	Representative of middle distance views from isolated properties to the south-east of the site.
13	Beinn Dhorain	NC 925 156	4.6	Summit to east of site, with overlooking views across moorland towards site.
14	Sciberscross	NC 783 103	8.0	Representative of views from minor road in Strath Brora. Middle distance view.
15	Beinn Smeorail	NC 862 117	1.9	Summit of adjacent hill, with views overlooking site.
16	A897 Baile an Or	NC 911 213	6.7	On the A897, a popular visitor/ tourist stopping point, with shelter and interpretation board relating to the areas gold panning heritage. Mid distance view. Sequential view with 2, 3 and 4.
17	Armine Lodge access track	NC 757 138	9.4	Private estate track with access to Ben Armine Lodge. Used by gamekeepers and Sutherland Estate Staff and by private parties visiting the estate and lodge for sport. Mid range view.

* the distance is measured to the nearest turbine.

7.120. From this list, a subset of 10 viewpoints was selected for the preparation of full photomontages. These are viewpoints 1, 2, 4, 6, 8, 10, 11, 12, 14 and 15.

7.121. Other viewpoints were considered such as Glen Loth, Upper Suisgill Lodge, Beinn Dubhain and Forsinard, but were not assessed because either the site was not visible or other viewpoints gave a suitable representation from that area.

Viewers

7.122. The likely viewers or 'receptors' may be:

- residents living in any of the towns, villages, settlements or individual residences within the ZVI of the proposal;
- people working in the countryside or in any town, villages or settlements within the ZVI of the proposal;
- tourists visiting and staying in or travelling through this part of Scotland;
- travellers (including tourists or workers) using any of the roads passing through the landscape;
- recreational users of the landscape, including those using golf courses, equestrian routes, or walking tracks (these are considered in detail in **Chapter 16 Recreation and Tourism**).

Assessment of Viewpoints

7.123. This section assesses the effects of the windfarm on the selected viewpoints listed above. This assessment makes use of data from the ZVI, Landscape Character Assessments, wireframes and site visits.

7.124. **Figures 7.7 to 7.23** show photographs of each view taken from each viewpoint looking towards the site. A wireframe image is shown for each viewpoint, and photomontages for selected viewpoints. In addition, the following information is given:

- OS reference: this is an alpha numerical grid reference for the location of the viewpoint;
- Distance from the windfarm: this is the distance from the viewpoint to nearest turbine;
- Viewing distance: approximate distance between the viewer and the photograph / image required in order to gain the impression of the real scale of the landscape;
- Included angle: this is the horizontal angle of view that is included in the photograph;
- Number of visible hubs and blade tips: this is the number of hubs and blade tips or part rotors that are theoretically visible from the viewpoint. For example '7 hubs and 12 tips' means that the hub or nacelle of 7 turbines (and their associated rotor blades) are theoretically visible and parts of the rotor blades of a further 5 turbines are also visible;
- A thumbnail map showing the location of the site, the location of the viewpoint and the included angle.

7.125. The photomontages are presented in two formats. The first is a panorama of 90° to allow an appreciation of some of the wider landscape around the windfarm, seen from the viewpoint.

The second format is of the same photomontage, cropped to a 50° included angle, printed to occupy the whole A3 sheet. These have a viewing distance of 45cm, as recommended by SNH guidance.

Viewpoint 1: Cnoc Caoruinn, Ben Armine Estate (NC 713 210, Figure 7.7)

- 7.126. This viewpoint is located near the summit of Cnoc Caoruinn (viewpoint height approximately 390m AOD), 15.1km to the west of the site. The area is not readily accessible being 10km from the nearest public road and as a result a limited number of people will experience this view such as walkers, sporting parties and estate staff. It offers a representative view of the windfarm from the remote inland moorland areas. Similar views of the windfarm will be obtained from large areas of the surrounding flat landscape and hills.
- 7.127. The viewpoint lies within the *Moorland slopes and hills* landscape character type with views over the *Sweeping moorland* character type. The proposed Ben Klibreck AGLV extends east to cover this viewpoint.
- 7.128. From Cnoc Caoruinn there are panoramic views from north to east to southeast. The windfarm is located due east. Mountains and higher ground, including Ben Klibreck, a Munro, form the view to the west. In good viewing conditions, the expansive blanket bog / moorland landscapes stretch into the far distance and give the sense of wide, open space and huge scale. It is a quiet, remote and peaceful landscape, and the characteristics are dominated by the weather and light conditions. Numerous small lochans can be seen in the near distance, that appear to interrupt the blanket of moorland by reflecting light. Some coniferous woodland plantations and a single estate access track in the distance to the southeast are the only human elements visible. In the distance the ground rises to a horizon of rolling hills with the occasional individual peak such as the distinctive shape of Morven to the northeast.

Visual effects

- 7.129. The windfarm will occupy the transition area between the flat moorland and the higher horizon. The hubs and rotors of all 35 turbines will be visible. The turbines will form a vertical contrast to the horizon and 5 will be partially visible against the skyline. The windfarm forms a feature present in the view, and will draw the attention in this relatively featureless, undeveloped landscape. However, within the vastness of the moorland in the panorama, and at this distance from the viewpoint, it will occupy only a small part of the view, and will be associated with the existing forestry plantations and access tracks seen in the general direction of the windfarm. Overall, considering also the relatively few viewers who experience this view, it is judged that, in good visibility conditions, there will be a **minor** visual effect.

Landscape effects

- 7.130. The proposed windfarm would introduce a human element in an otherwise little developed landscape, in which the forestry plantations are the main evidence of man's influence. The enormous scale of this landscape, however, would be able to accommodate this development without a change in the sense of openness and remoteness. It is judged that there will be a **minor** effect on landscape character.

Viewpoint 2: Kinbrace cemetery (NC 859 314, Figure 7.8)

- 7.131. This viewpoint is located at the small community cemetery at the settlement of Kinbrace, 14.9km to the north of the windfarm site. This viewpoint also represents views from the church, where people congregate, Kinbrace Station, residences and locations on the A897 and B871 nearby.
- 7.132. The viewpoint is located on the edge of the *Sweeping moorland* and *Moorland slopes and hills* landscape character types.
- 7.133. There are open panoramic views to the south. Views are restricted to the north and west by mountains including Ben Griam Mor and Ben Griam Beg. In the direction of the site, there are extensive areas of heather moorland. Cnoc Dail-chairn, a knoll in the middle distance has 2-3 masts on the top, the other side of the shallow strath is covered with a forestry plantation. The site is located on higher ground behind this. There is a pole mounted overhead power line in the foreground and a small stand of pine trees in the middle distance. The A897 and the railway cross the landscape forming an infrastructure corridor, along which there is intermittent movement. The wide horizon is formed by low rolling hills with the abrupt escarpment of Ben Uarie and Beinn Dhorain forming an interruption to the gentle profile of the skyline.

Visual effects

- 7.134. It is predicted that seven turbines, comprising 1 hub and rotor, and 6 further rotor tips, will be partially visible on the low, distant hills to the right of Beinn Dhorain. The turbines would be visible as new vertical man-made features in this strongly horizontal landscape. However, due to the distance from the site (14.9km), and the numbers of blades visible, the windfarm will occupy a small part of the open view, and will form a negligible feature in it. The visual effect, in good visibility conditions, is therefore judged to be **negligible**.

Landscape effects

- 7.135. The character of the area is that of remoteness and openness although human elements such as the forestry, road, railway, masts and power line poles are strong features in the landscape. The windfarm will relate to these, and will appear not to be significantly larger in the view than the masts or poles. The distance from the windfarm and the scale of the landscape will mean that the windfarm will be accommodated without affecting the character and scale of the landscape. Therefore the landscape character effect is judged to be **negligible**.

Viewpoint 3: A897 north of Kinbrace (NC 881 396, Figure 7.9)

- 7.136. This viewpoint is located 8km north of Kinbrace on the A897, a popular tourist route between Helmsdale on the east coast and the north and northwest coasts. The viewpoint is 23.3km north of the windfarm site and is visible as part of a sequence while travelling south towards Kinbrace along the A897.
- 7.137. The road is located within a wide, open strath enclosed by steep slopes rising up to low rolling hills to the west (Ben Griam Mor and Ben Griam Beg) and a plateau to the east. Within the expanse of moorland and peatland, Loch an Ruathair forms a focus in the middle distance. There are large areas of coniferous plantations on some lower hill slopes. The A897, a railway and a line of overhead power line poles form a small linear corridor of infrastructure through the valley. A high voltage pylon line (the same line that crosses the windfarm site) can be seen following the eastern edge of the valley, and can be seen breaking the horizon to the left of the view.

Visual effects

- 7.138. One hub and two further blade tips will be visible due south, on the horizon of rolling hills. Movement of the blades will not normally be perceptible at this distance. The remaining turbines will be hidden by the topography. The form and layout of the windfarm will not be legible with this number of turbines visible. From this location, the windfarm will be seen in the same view as the high voltage line, the road, poles, forestry plantations and the railway track and will relate to these other man-made elements. The windfarm will form a negligible feature on the skyline at this distance. Visual effects, in good conditions, will be **negligible**.

Landscape effects

- 7.139. There will be no perceptible change in the landscape character of the *Sweeping Moorland* or *Flat Peatland* as the characteristics that make up these landscape types will still dominate the landscape. The windfarm will correspond to the other human elements and the effects will be **negligible**.

Viewpoint 4: A897 Kildonan (NC 922 200, Figure 7.10)

- 7.140. This viewpoint is located 12km west of the village of Helmsdale on the A897, east of Kildonan Lodge and 6.5km northeast of the windfarm site. Although the A897 is a popular tourist route between the east coast and the north coast and northwest, the road is also used as a vital transport corridor for the people who live and work in the strath. There are several scattered properties in the strath from which static views similar to that seen from this viewpoint will be possible.
- 7.141. The viewpoint lies within the *Strath* landscape character type. This character type is surrounded by *Moorland slopes and hills* landscape character types with some *Coniferous woodland* and *Fringecrofting and historic features* types also present.
- 7.142. Views are contained within the strath by the adjacent hills and there is a sense of enclosure. The view to the windfarm site is south across the strath. The viewpoint is located above the flood plain on the northern slopes. The strath floor comprises rough grazing and semi-improved grazing areas with some field boundaries evident. The River Helmsdale flows through the strath, and there are scattered mature birch and rowan trees. Within the strath a number of scattered properties and crofts are located primarily along the road. A railway and a line of overhead power line poles runs through the strath.
- 7.143. Beyond the floor of the strath, the ground rises into moorland slopes. There is a coniferous plantation on the lower slopes of the Craggie Water glen in the centre of the view. The higher slopes rise more steeply to form the tops and ridges of the horizon.

Visual effects

- 7.144. It is predicted that 5 hubs and blades, and 3 additional blade tips will be seen from this viewpoint, on the horizon at the head of a tributary valley on the south side of the strath. The blade movement will be seen clearly at this distance. From this location, the site itself is not visible, such that construction activity and the site infrastructure will be hidden from view. The turbines will break the horizon and will be evenly spaced. The visible turbines will form a prominent feature in this view. Overall, in good visibility conditions, and given the number of potential receptors, the visual effect is judged to be **moderate**.

Landscape effects

- 7.145. Although there are human elements within this view, they are all in fitting with the rural strath character. The windfarm will introduce a few new modern elements into the landscape. As the location of these turbines will be on the horizon, the scale of the landscape may be reduced when looking across the strath. The effect on landscape character in this section of the strath is judged to be **moderate**.

Viewpoint 5: Creag nam Fiadh, Borrobol Forest (NC 841 237, Figure 7.11)

- 7.146. This viewpoint is located on the rounded summit of Creag nam Fiadh (387m AOD) on the Borrobol estate, 8.6km northwest of the windfarm site. The area is not readily accessible, being 4.5km from the nearest public road and as a result a limited number of people will experience this view, including occasional summer walkers, sporting parties and estate staff. This viewpoint is representative of views from the higher eastern slopes of the surrounding remote inland plateau.
- 7.147. The viewpoint is located within the *Moorland slopes and hills* landscape character type with views over *Sweeping moorland* landscape character types. The *Lone mountain* type can also be seen in the distance.
- 7.148. There are dramatic 360° panoramic views from this viewpoint. There is a great sense of openness and remoteness, with mountains rising above the moorland plateaux to the east, north and west. Ben Horn can be seen above Strath Brora in the south, to the far right of the view. The view towards the site is over rolling moorland, that rises to a high plateau with a backdrop of moorland hills including Beinn Smeorail and Beinn Dhorain. The focus of the view is the steeper topography associated with Ben Dhorain, Glen Loth and The Craggan. Very few man-made features can be seen from this viewpoint, although 3 high voltage pylons are visible. The aspect of this view is looking south, such that the lighting on the turbines will normally be from behind.

Visual effects

- 7.149. From this summit all 35 turbine hubs and blades will be seen. At this distance the blade rotation will be visible. Some of the turbines will break the horizon and be visible against the sky. As this viewpoint is of a similar elevation to the site, the turbines will be seen to have a dense grouping of relatively evenly spaced turbines. The spread of the windfarm across the plateau will be such that the windfarm will take up a moderate part of the view in this direction, and in the enormous scale of the panorama, will catch the eye. The windfarm will form a prominent feature in the view. Overall the visual impact, in good weather and lighting conditions, is judged to be **moderate**.

Landscape effects

- 7.150. There are very few human elements in the surrounding landscape. The location of turbines within this view will introduce a new modern element into an area of open expansive moorland and may potentially become an element that reduces the apparent scale of the view. This is because there are currently no elements in the view to which the scale of the hills and moorland can be related. The introduction of the turbines of a 'known' size, may make the hills seem smaller than appear at present. However, given the vastness of the panorama, and the overriding sense of openness, the effect on landscape character is judged to be **minor**.

Viewpoint 6: Ben Horn (NC 809 064, Figure 7.12)

- 7.151. This viewpoint is located at the summit of Ben Horn (521m AOD). With access from the Bridge of Horn in Dunrobin Glen via a new track, this is an easy and popular climb. The reward at the top is a 360° panoramic view over the moorlands and high mountains to the north, south and especially to the west. To the east the sea and coast can be seen. Ben Horn is 9.1km south of the windfarm site.
- 7.152. The viewpoint lies within the *Moorland slopes and hills* landscape character type but overlooks *Strath, Sweeping moorland, Lone mountains, Fringe crofting and historic features*, and *Coniferous woodlands* character types. It also lies within the Ben Horn AGLV.
- 7.153. The view to the site overlooks Strath Brora, with glimpses of its green valley floor with scattered settlement and the meandering Brora River. There are large areas of geometrically shaped coniferous plantations on slopes above the strath. The accompanying forestry access tracks are prominent in the landscape from this viewpoint. Beyond the forestry, extensive areas of moorland form the plateau on which the site lies. A high voltage pylon line is visible crossing the site and the lower slopes of Ben Horn itself.

Visual effects

- 7.154. From this viewpoint all 35 blades and hubs will be visible. The movement of the blades will be visible from this distance. The size of the development may change the perceived scale of the hill summits and other elements and man-made features in this view, such as forestry, and the windfarm will form a dominant feature in the view. The new access tracks will also be clearly visible from this viewpoint, and the borrow pits will be visible while they are being worked. Although there are 360° panoramic views from this viewpoint the windfarm will still create a dramatic focus, and will draw the eye away from the undulating skyline. The visual effect, in good visibility conditions, is judged to be **major**.

Landscape effects

- 7.155. The scale of the development as seen from this viewpoint will alter the impression of the landscape. It will be seen as a large, modern development in an otherwise relatively undeveloped area. Although there are 360° views, the sense of an open, remote landscape may be reduced when looking north. However, the windfarm will relate to the forestry, tracks and pylons that are already present in the landscape. Overall, the landscape effect is judged to be **moderate**.

Viewpoint 7: Gordonbush access track (NC 849 119, Figure 7.13)

- 7.156. This viewpoint is from a Gordonbush estate access track that follows the Allt Smeorail burn from the Strath Brora road up towards the site. The nearest turbine will be 2.0km away. The track is occasionally used by walkers but gives a representative close view of the proposed development.
- 7.157. The viewpoint lies within the *Moorland slopes and hills* landscape character type.
- 7.158. The access track traverses the western slopes of the Allt Smeorail burn. Views are drawn up the burn to higher hills to the north. On the opposite slopes of the burn the ground also rises to the prominent summit of Beinn Smeorail (486m AOD) enclosing the valley except for views south to Ben Horn. Geometrical blocks of coniferous plantations on the middle slopes contrast with the semi natural birch woodland along the burn. Currently the access road is visually fairly discreet and follows the contours of the valley. There are no other modern man-made elements within this valley, but there are signs of previous activity in the form of field boundaries and archaeological features.

Visual effects

- 7.159. The windfarm would be sited directly at the end of the valley to the north and would be seen against the skyline. A total of 25 hubs and a further 8 rotor tips will be seen from this viewpoint although this will vary at different points along the access track. The approach track will be visible going up the west side of Allt Smeorail, and the highest borrow pit may be visible. Due to the local topography, and the fact that the viewpoint is at lower elevation than the site, the entire windfarm will be not be visible. However, the visible turbines would become the main visual focus of the view, and will form a dominant feature on the skyline. In spite of the limited number of viewers, the visual effect, in good weather conditions, is regarded as being **major**.

Landscape effects

- 7.160. The turbines will dominate and break the horizon reducing the scale of the small, enclosed valley, dramatically altering the character. The turbines will become the defining feature at the head of the glen and so the effect on character is judged to be **major**.

Viewpoint 8: South Loch Brora (NC 841 089, Figure 7.14)

- 7.161. This viewpoint is taken from the southern shores of Loch Brora looking north. This track is used by the estate staff as well as being a popular local walk. The view is also experienced by anglers on the loch, and for visitors watching the birds on and around the loch. The viewpoint also represents a view from one of the few places on the floor of Strath Brora that the windfarm may be visible.
- 7.162. The viewpoint lies within the *Strath* landscape character area with views to the *Moorland slopes and hills* character area. It is also at the edge of the Loch Brora AGLV, and within the proposed Ben Horn AGLV.
- 7.163. The view to the windfarm site overlooks the peaceful and tranquil Loch Brora that forms the main visual focus on the scenic strath floor. On the opposite side of the loch the ground rises steeply forming the horizon and enclosing the strath. These slopes are clad in coniferous forestry with some areas of birch and pine woodlands, and open rough grassland to the left of the view. There are several buildings of the Gordonbush estate on the opposite shore, partially hidden within trees.

Visual effects

- 7.164. The visible turbines will appear on the horizon up the valley of Allt Smeorail. From this viewpoint the ZVI model predicts that 7 hubs and rotors and a further 7 rotor tips will be visible. However, the existing forestry will obscure some of these, leaving one hub and 3 additional blade tips visible. The distance to the nearest turbine is 5.1km from the viewpoint. They will be framed by Cnoc a Ghrianain to the west of the view and the higher Beinn Smeorail to the east of the view, and will be partially obscured by the forestry associated with the Gordonbush estate. This is a unique view from this position and will not be experienced from other locations along the track where fewer numbers of blade tips and hubs will be visible. Although the turbines will be seen against the skyline, they will not dominate the horizon and form a relatively small feature present in the wider views. Considering the relatively small number of receptors and small stretch of track that affords this view, the visual effect, in good conditions, is judged to be **minor**.

Landscape effects

- 7.165. The character of the area is typical for that of a highland strath. It has the feeling of being settled with some scattered settlement and minimal agriculture in the form of rough grazing. The man-made elements are all contained within the strath itself. The introduction of the large scale moving industrial elements would alter the tranquillity of the strath but because the sense of enclosure and scale would not be altered dramatically and as the turbines would not be the dominant feature within the strath the effect on landscape character is judged to be **minor**.

Viewpoint 9: Ardachu Road, Strath Fleet (NC 676 035, Figure 7.15)

- 7.166. This viewpoint is located within Strath Fleet, 20.6km southeast of the site. There are several properties, including some holiday cottages and lodges, high on the southern slopes of the strath that would have a view of the development.
- 7.167. The viewpoint lies within the *Strath* landscape character type with views to *Moorland slopes and hills*.
- 7.168. The viewpoint is located on the upper slopes of Strath Fleet, on a relatively flat bench that acts as a lip above the main part of the glen. Strath Fleet has scattered properties throughout, including the settlement of Rogart (although the windfarm will not be visible from there). There is extensive semi-improved pasture and rough grazing on the valley floor and lower slopes. The upper slopes have semi natural woodland cover below large areas of moorland on upper slopes. The topography of the strath gives a sense of enclosure and the only views out of the valley are from higher elevations, such as at the viewpoint.

Visual effects

- 7.169. The road at Ardachu is considerably higher than the A839 on the strath floor and serves several properties on the southern slopes. 12 hubs and 7 additional rotor tips of the windfarm will be visible to the northwest over the hills on the opposite side of the strath. The windfarm will form a negligible feature in the view, as the eye is drawn up and down the strath. Due to the man-made elements already existing in the strath and the distance from the development, the visual effect, in good visibility conditions, is considered to be **negligible**.

Landscape effects

- 7.170. The character of the landscape experienced at this location is that of being on the edge of an enclosed, wooded, populated valley, looking over undulating hills with semi-improved grazed or wooded lower slopes. This landscape does not have a sense of remoteness, and human influences are present in most parts of the view. The introduction of the windfarm on the distant hills is judged to have a **negligible** effect on landscape character.

Viewpoint 10: Morven (ND 004 288, Figure 7.16)

- 7.171. This viewpoint is located on the summit of Morven (706m AOD), the highest mountain in Caithness and Eastern Sutherland, offering 360° panoramic views of the surrounding area. The hill is a very popular climb with hill walkers. The viewpoint is 18.5km northeast of the windfarm site.
- 7.172. The viewpoint lies within the *Lone mountain* landscape character type with views over *Sweeping moorland, Moorland slopes and hills*, and *Strath* landscape character types. The viewpoint also lies within the Morven AGLV.
- 7.173. Morven is a distinctive mountain in the landscape due to its conical shape. On a clear day, views from the summit of Morven can extend as far as the Cairngorms to the south, high mountains to the west, the Orkney Isles to the north and far out to sea to the east. There is a vast sense of scale with huge expanses of peat moorland visible. Some areas of forestry can be seen in the middle distance to the southwest. Looking towards the site, the eye is drawn along the rolling hills that hug the coastline, where Beinn Dhorain and Ben Horn are recognisable. Very few human interventions can be seen in the undulating topography. Apart from the forestry, there are two telecommunication masts on a hill to the east. A few drainage ditches are evident in the patterns of the moorland below the viewpoint. There is a peaceful atmosphere with little movement or noise on a still day.

Visual effects

- 7.174. The windfarm site will be seen to the southwest. The aspect of this view is looking southwest, such that the lighting on the turbines will often be from behind. It is predicted that 23 hubs and a further 12 rotor tips will be visible. The turbines will be seen in a regularly spaced arrangement in a tight group that is legible as a grid-based layout. The windfarm will be located on an undulating ridge but will not break the horizon. As a result the windfarm will not become a prominent feature within the dramatic 360° panorama as it will occupy a very small proportion of the view. The distance to the site, and the scale of the panorama tend to temper the impact, but because this viewpoint is an important landmark summit, and popular with walkers, the visual effect of the windfarm from this viewpoint, in good conditions, is regarded to be **minor**.

Landscape effects

- 7.175. It is predicted that the windfarm development will be accommodated into the landscape without significantly altering the sense of scale and openness. The character of the landscape that is open moorland with hills and the sea in the distance will be interrupted by the introduction of the windfarm. Thus the effect on landscape character is judged to be **minor**.

Viewpoint 11: Beinn Bhraigaidh (NC 813 010, Figure 7.17)

- 7.176. This viewpoint is located near the summit of Beinn Bhraigaidh (viewpoint height approximately 360m AOD), above the settlement of Golspie, 12.4km to the south of the windfarm site. The site is also the location for the distinctive Duke of Sutherland monument which is a landmark feature in the area. A well maintained signposted footpath allows access from Golspie to the monument.
- 7.177. The viewpoint is located within an area of *Moorland slopes and hills* landscape character type. The location of the viewpoint allows views over many other character types including *Town, Mixed agriculture and settlement, Small farm and crofting areas with new housing, Coniferous Woodland* and *Strath*.
- 7.178. Beinn Bhraigaidh offers a wide panorama from north to east to south with stunning views over the coast and sea. The settlements along the coast are surrounded by a mixture of coniferous and broadleaf woodland, arable fields and scattered properties. On the upper slopes and the tops of the undulating coastal hills, heather moorland forms the main landcover. The site is located due north, and the view is across Dunrobin Glen and over the undulating ridge of Cagar Feosaig. Ben Horn is visible as a shoulder-like hill to the left of the view. Golspie is located at the mouth of Dunrobin Glen, just out of the view to the right.

Visual effects

- 7.179. It is predicted that 22 hubs and 11 further rotors will be visible on the horizon to the north of this location, with some turbines hidden from the view by the topography. Although some of the turbines will be present in the view and will break the skyline, they will not form a prominent feature in the view, as the eye will still be drawn along the coast and over the sea to the right of the view. There is also clearly visible human influence on the landscape, particularly along the coast. The visual effect, in good conditions, is therefore regarded as being **minor**.

Landscape effects

- 7.180. The landscape character of this view is that of a moorland hill on the edge of an extensive, uninhabited moorland plateau, overlooking the settled coastline, and there is a feeling of proximity to the settled shores. The windfarm could be accommodated into this landscape without dramatically altering the sense of scale, but it will introduce a striking man-made feature into the otherwise untouched moorland element of the view. Currently, man's influence appears to be restricted to the coast, and the Dunrobin Glen, but with the introduction of the windfarm, the moorland also will become influenced, and the effect on landscape character is therefore judged to be **moderate**.

Viewpoint 12: Craggie Beg (NC 738 081, Figure 7.18)

- 7.181. This viewpoint is located on a minor access road near the properties Craggie Beg and Craggiemore on the southern slopes of the upper reaches of Strath Brora. The windfarm is 13.0km to the northeast. The residents of these properties are the main people who experience this view.
- 7.182. The viewpoint is located within *Small farms and crofts* landscape character type with views over *Strath, Sweeping moorland* and *Moorland slopes and hills* in the wider landscape.
- 7.183. The properties are located on the upper slopes Strath Brora with wide panoramic views northeast down the strath with Ben Horn to the east and higher hills to the north. The strath is predominately semi-improved and rough grazing, with scattered properties throughout. There are some field boundaries of broken stone walls, and post and wire fences. A line of overhead power lines on poles can be seen in the foreground. There are semi-natural woodland areas on the strath floor with some block coniferous plantations on the upper slopes. Above this the ground rises up to the high moorland plateau.

Visual effects

- 7.184. The windfarm will be visible as 35 turbines to the northeast on high ground and would be framed by the topography of the strath. The development will be prominent on the distant land, and this is one of the few locations where the perspective along the gridlines will create a strong visual statement. The lines of turbines running towards the viewer makes the windfarm layout very legible, but will be an exaggerated perspective of the grid that is splayed out in this direction. The movement of the blades may distract the eye from the regularity of the lines of turbines, but the windfarm will become a prominent feature in the view. This viewpoint is relatively distant from the windfarm, and there are few receptors of this impact. Overall the development is judged to have a **moderate** visual effect upon this view in good weather conditions.

Landscape effects

- 7.185. The present landscape contains buildings, walls and areas of forestry with abrupt boundaries. The windfarm will introduce new modern vertical elements into the landscape. The appearance of the turbines as 'measurable' features on the distant moorland will appear to bring the moorland closer to the viewer, reducing the scale of the visible landscape. The landscape effect is therefore judged to be **moderate**.

Viewpoint 13: Beinn Dhorain (NC 925 156, Figure 7.19)

- 7.186. This viewpoint is located on the summit of Beinn Dhorain (628m AOD). The nearest turbine is 4.6km to the southwest. Beinn Dhorain is a popular climb from Glen Loth as it offers extensive panoramic views.
- 7.187. The viewpoint is located within the *Moorland slopes and hills* landscape character type and lies within the Ben Horn AGLV. No other landscape character types are prominent except *Lone mountain* (covering Ben Klibreck) and there are no other types between the windfarm site and the viewpoint.
- 7.188. The viewpoint affords dramatic 360° panoramic views of the surrounding moorland and mountains. There is a sense of remoteness and openness with no one dominant focus. Ben Klibreck can be seen to the west, Ben Loyal and Ben Hope in the extreme far northwest, Ben Griam Mor and Ben Griam Beag to the north, the distinctive Morven and Scaraben closer also to the north and the sea dominates views to the east. The Duke of Sutherland Monument can be seen on Beinn Bhragaidh to the south. In the direction of the site, the view is over the undulating moorland plateau, with the shoulder-like top of Ben Horn recognizable to the left of the view, and Ben Klibreck dominating the right hand side of the view. There is currently little evidence of human activity from this viewpoint and indeed there is little movement generally.

Visual effects

- 7.189. Thirty one hubs and all 35 blades will be visible as a scattered group on the moorland below Beinn Smeorail to the west. At this distance the blade rotation would clearly be visible. Although several turbines will be seen in their entirety, the windfarm will fall away behind the ridgeline, thus partially hiding some turbine towers from the view. As the viewpoint is higher in elevation than the site, the turbines will not break the horizon, and will appear less imposing than if they had been on the skyline. However, the windfarm will be a dominant, focal feature in the view inland, due to its close proximity to the viewpoint. Overall, the visual effect from this viewpoint, in good viewing conditions, is judged to be **major**.

Landscape effects

- 7.190. The windfarm will introduce a large scale, modern element into the landscape as well as movement. Although the windfarm would not reduce the sense of openness of the larger landscape, as the horizon extends much further than the windfarm site, the sense of scale, and remoteness would be reduced such that the effect on landscape character is judged to be **major**.

Viewpoint 14: Sciberscross (NC 783 103, Figure 7.20)

- 7.191. This viewpoint is located on the minor road within Strath Brora, and near Sciberscross, 8.0km southwest of the windfarm site. The windfarm will be seen by people travelling along the minor road in Strath Brora, including people who live and work in the strath as well as tourists. Similar views may also be seen from some of the few properties in the glen, including from Sciberscross, except where forestry on the lower slopes obscures the view. This view is principally experienced as glimpses through the trees that occupy the strath floor.
- 7.192. The viewpoint is located within the *Strath* landscape character type although is strongly linked to *Fringe crofting and historic features, Small farms and crofts and Coniferous woodland* and views to *Moorland slopes and hills*.
- 7.193. At this viewpoint the strath floor is more undulating than at other locations in Strath Brora. The minor single track road winds through the rough terrain of glacial deposits and a coniferous plantation contains views to the west of the road. A semi-natural mature birch woodland lies along the east of the road, associated with the River Brora. However, there appears to be little or no regeneration due to grazing pressure, and there are glimpsed views of the moorland slopes beyond. The remnants of a stone wall reinforced with a fence, line the road and a small borrow pit can be seen in the foreground. The middle distance looks through the scattered birch trees and over rough grazing of the floor of the strath, and up to the upland moorland plateau beyond.

Visual effects

- 7.194. The windfarm will be seen framed by the forestry, the scattered trees and topography of the near ground. It will be located on the moorland plateau at the head of the strath. It is predicted that all 35 hubs would theoretically be visible from this viewpoint, but many of them will in fact be screened by the trees in the foreground. All of the visible turbines will break the horizon. Due to its proximity, the development would become the main visual focus in the strath when travelling along the road, except that the effect is tempered by the screening of the trees. Where visible, the windfarm will therefore form a prominent feature in the view. Although this road is relatively busy, there are few places along this wooded stretch where an open view of the windfarm will be possible. Because of these restricted views, the visual effect, in good conditions, is judged to be **moderate**.

Landscape effects

- 7.195. The perception of the landscape at this viewpoint is one of enclosed, wooded, relatively lush strath, with glimpses out to open, high, exposed moorland. The introduction of the windfarm will change the impression of the distant landscape to one of developed moorland, rather than untouched moorland. The vertical elements of the windfarm will also reduce the scale of the distant moorland and therefore the whole landscape, as they will be 'measurable' features on moorland over which it is currently difficult to estimate distances. Considering these changes, the effect on landscape character is judged to be **moderate**.

Viewpoint 15: Beinn Smeorail (NC 862 117, Figure 7.21)

- 7.196. The viewpoint is located on the summit of Beinn Smeorail (486m AOD). The windfarm is located to the north with the nearest turbine 1.9km away. The viewpoint is representative of close range views from the hills and moorland immediately surrounding the site, which are occasionally climbed by walkers and estate staff.
- 7.197. The viewpoint is located within the *Moorland slopes and hills* landscape character type. From the viewpoint other types can be seen, including *Strath*, *Coniferous woodland*, *Sweeping moorland* and *Lone mountains* in the distance.
- 7.198. From the viewpoint there are 360° panoramic views of the surrounding moorland and mountains although views to the northeast are more restricted by higher ground. In the direction of the site, the view is looking over undulating moorland, that extends from the slopes of Beinn Smeorail, as far as the eye can see. In the far distance it is punctuated by Ben Klibreck to the west and the Ben Griam Mor and Ben Griam Beg to the northwest. To the right of the view, the distinctive shape of Morven can be seen above the rounded tops and ridges of Meallan Liath Mor and Meallan Liath Beag. The deep cut Allt Smeorail valley creates a strong divide between the expansive moorland and the higher rounded hills. An existing access track that runs parallel to the burn stops short of the windfarm site, below and to the west of the viewpoint. A line of high voltage pylons can be seen crossing the moorland in the middle distance. This effectively marks the western boundary of the site.

Visual effects

- 7.199. The windfarm site will occupy the moorland plateau between Allt Smeorail and the pylons, extending up to, but not occupying the gentle ridge approximately 4km north of the viewpoint. All 35 turbines will be visible in full, and the layout will be legible as a grid. The access tracks between each turbine will also be visible, and will interrupt the moorland that runs across the site. The layout of the tracks will, on the whole, tend to reinforce the grid pattern, but some short stretches will deviate from the grid, potentially creating a confusing image. The transformers will be visible as small boxes at the foot of each tower, and two borrow pits on the approach track will also be visible. The borrow pits will be seen as indentations in the landform, and the amount of vegetation cover will depend on the time that has elapsed since reinstatement. The substation may be visible on the far side of the site, although it is will be a low structure. Because of the proximity of the site to the viewpoint, the windfarm and its infrastructure will form a dominant feature in the view, with **major** visual effects in good viewing conditions.

Landscape effects

- 7.200. The windfarm development will dramatically change the character of the landscape experienced from this viewpoint. What was open, virtually untouched moorland will become a complex windfarm site with a network of tracks and infrastructure, such that the character of the landscape will be one of looking over and through the modern energy generating windfarm to moorland beyond. The scale and character of the moorland beyond will change too, as the hills may appear to be closer, and the moorland less remote. In addition, the windfarm will become the defining feature of the near to middle ground hills and moorland in this landscape. The effect on landscape character is therefore judged to be **major**.

Viewpoint 16: A897 Baile an Or (NC 911 213, Figure 7.22)

- 7.201. This viewpoint is located at an informal car park on the A897 at Baile an Or. The viewpoint is 6.5km from the nearest turbine and will be seen by travellers along Strath of Kildonan. It gives a representative view of the windfarm from the areas within the ZVI in the strath, and can also represent sequential views along the A897 with viewpoints 2, 3 and 4. The viewpoint is at a popular stopping point for tourists, at a spot that is renowned for gold panning. There is a simple shelter with an interpretation board at the carpark by the stream, and there are often people parked there.
- 7.202. The viewpoint lies within the *Strath* character type and is surrounded by the *Moorland slopes and hills* character type.
- 7.203. The viewpoint is located within the Kildonan Burn valley, a tributary of the larger River Helmsdale. The topography encloses most views within the glen, but there are glimpses out to the tops of nearby hills. At the viewpoint, the A897 crosses the fast flowing Kildonan Burn over a stone bridge. In the direction of the site, there is semi natural birch woodland established along the burn. The slopes of the glen are predominantly heather moorland with some rough grassland on the lower slopes. The undulating sides of the glen rise up to rounded tops of hills that form the horizon.

Visual effects

- 7.204. A single hub and 2 further rotors will be seen protruding over a distant hill on the skyline to the south. The rest of the windfarm will not be visible, as it is located behind the ridge that defines the horizon. At this distance, the movement of the blades will be distinguishable. The windfarm therefore, will be a feature present in the view, seen as turbine blades passing across the skyline. Considering also the importance of the viewpoint for visitors, the visual effect, in good conditions, is judged to be **minor**.

Landscape effects

- 7.205. Although a shelter, carpark and road exist in the base of the valley along the burn, there are no man-made elements on the surrounding slopes and there is a sense of remoteness. The windfarm will introduce a modern element into this setting, but because only the tops of three turbines will be visible, this will not alter the overall scale or character of the landscape. The effect on the landscape is judged to be **negligible**.

Viewpoint 17: Armine Lodge access track (NC 757 138, Figure 7.23)

- 7.206. This viewpoint is located on the estate access track to Ben Armine Lodge. Estate staff, private sporting parties and the occasional walker use this track. The windfarm site lies 9.4km to the northeast, and can be seen from long stretches of the access track when travelling east, although local topography and some forestry plantations screen views from some sections. The windfarm will not be visible from the Ben Armine Lodge itself, nor its immediate surrounding area, although it would be visible from large areas of the wider landscape.
- 7.207. The viewpoint lies within the *Sweeping moorland* landscape character area but has views to *Moorland slopes and hills*, *Lone mountains* and *Coniferous woodland* character areas.
- 7.208. The topography around the viewpoint is relatively flat with some undulating hills on the horizon. Loch Bad na h-Earba forms a visual focus in the foreground, in particular the small island with three solitary trees. The only other break in the moorland is a large coniferous plantation beyond the lochan to the right of the view. The distant horizon is made up of the rolling hills to the east, and Beinn Smeorail is recognisable as a conical top in the centre of the view.

Visual effects

- 7.209. From this viewpoint all 35 hubs of the turbines will be visible. The windfarm will be seen on the distant high ground to the northeast. The turbines will be seen against the backdrop of hills, although some turbines to the left of the regularly spaced group will break the skyline. The movement of the blades will be visible at this distance. Because there are no strong visual foci on the horizon the windfarm will become a prominent feature in this landscape despite the distance between the site and the viewer. Considering also the number of viewers who experience this view, the visual effect on this viewpoint, in good conditions, is judged to be **moderate**.

Landscape effects

- 7.210. There is a sense of openness and remoteness from this viewpoint and the relatively flat but rising moorland gives very long panoramic views. The landscape is strongly horizontal, with a restricted palette of colours that create a tranquil scene. The track and the forestry are the only visible human influences on the landscape and the windfarm will introduce another new element into the landscape. The windfarm will be distant from this viewpoint, but will be a complex feature with eye-catching detail, whereas the lochan, moorland and forestry are large monochrome blocks without detail. The windfarm will therefore change the character of the landscape, and may potentially change the scale of the landscape also, such that the effect on the landscape is judged to be **moderate**.

Summary of Viewpoint Data

7.211. A summary of the basic data for each viewpoint, together with the judgements regarding landscape and visual effects is given in **Table 7.8**.

Table 7.8: Summary of viewpoint data

No.	Viewpoint Location	OS Grid Reference	Total hubs visible	Total rotors visible	Distance to nearest turbine (km)	Visual effect	Landscape effect
1	Cnoc Caoruinn, Ben Armine Estate	NC 713 210	35	35	15.1	minor	minor
2	Kinbrace Cemetery	NC 859 314	1	7	14.9	negligible	negligible
3	A897 north of Kinbrace	NC 881 396	1	3	23.3	negligible	negligible
4	A897 Kildonan	NC 922 200	5	8	6.5	moderate	moderate
5	Creag nam Fiadh, Borrobol Forest	NC 841 237	35	35	8.6	moderate	minor
6	Ben Horn	NC 809 064	35	35	9.1	major	moderate
7	Gordonbush access track	NC 849 119	25	33	2.0	major	major
8	South Loch Brora	NC 841 089	7	14	5.1	minor	minor
9	Ardachu Road, Strath Fleet	NC 676 035	12	19	20.6	negligible	negligible
10	Morven	ND 004 288	23	35	18.5	minor	minor
11	Beinn Bhragaidh	NC 813 010	22	33	12.4	minor	moderate
12	Craggie Beg	NC 738 081	35	35	13.0	moderate	moderate
13	Beinn Dhorain	NC 925 156	31	35	4.6	major	major
14	Sciberscross	NC 783 103	35	35	8.0	moderate	moderate
15	Beinn Smeorail	NC 862 117	35	35	1.9	major	major
16	A897 Baile an Or	NC 911 213	1	3	6.7	minor	negligible
17	Armine Lodge access track	NC 757 138	35	35	9.4	moderate	moderate

Limitations

7.212. Field verification of the ZVI and the search for viewpoint locations revealed that there are relatively few locations on public roads that will have views of the windfarm. The precise locations were chosen on the basis of field work. The selected viewpoints are therefore not representative of views from the study area as a whole, but are chosen to illustrate views from locations likely to have views of the windfarm, and therefore likely to incur effects.

7.213. Several of the viewpoints chosen to represent views from public roads are relatively close to each other. In addition, several viewpoints were chosen to represent views from locations close to the windfarm - 10 of the 17 viewpoints lie within 10km of the windfarm. This is also a reflection of the ZVI. Because of the proximity, 8 of these viewpoints resulted in significant

effects. The numbers of significant effect included here should therefore be considered in relation to the proximity of the viewpoints to the windfarm, and in relation to the overall coverage of the ZVI, in particular of views from public roads.

Sequential Views

- 7.214. There will be no views of the windfarm when travelling along the A9 at any point between Dornoch Bridge and Dunbeath, since the high topography between the windfarm site and the road blocks all views of the site.
- 7.215. The A839 along Strath Fleet from Loch Fleet to Lairg will not afford any views to the windfarm, as it runs along the floor of the valley. There will be views of the windfarm from higher up on the valley sides, such as from Ardachu (Viewpoint 9).
- 7.216. The A897 is the only major road within the study area that will have views of the windfarm. The sequential experience along this route is represented by Viewpoints 3, 2, 16 and 4.
- 7.217. When travelling from the north, there will be no views of the windfarm from Forsinard, but brief long distance views from Viewpoint 3, near Loch an Ruathair. Here the visual effect is judged to be negligible. Further south, views are again seen at Kinbrace, represented by Viewpoint 2, Kinbrace Cemetery, with negligible visual effect. These are views over open, flat moorland to undulating hills, on which the windfarm will make a small feature. Views are screened by local topography around Borrobol, but middle distance views are gained from around Kildonan. These views are represented by Viewpoint 16 Baile an Or, and Viewpoint 4, east of Kildonan. There are minor visual effects predicted for viewpoint 16, due to the numbers of turbines visible, but east of Kildonan, where 8 rotors are viewed over a ridge at the head of a small tributary valley, the effect will be moderate.
- 7.218. Overall, there will be glimpses of the windfarm in views when travelling south. At one location, east of Kildonan, the effect is judged to be moderate, but at other locations the effects will be negligible. The overall effect on the experience of moving through this landscape along this route is judged to be **minor**.

Designated Landscapes

Dornoch Firth NSA

- 7.219. The windfarm will be visible only from the eastern extremity of this designated area, from the Firth itself beyond Dornoch, from Whiteness Sands and from Portmahomack. These, however, will be very distant views, the site being over 25km away. The windfarm will be visible on a distant hill further to the north, and therefore seen in the setting of the developed coast. The effect on the landscape of this area is therefore judged to be **negligible**.

Loch Brora AGLV

- 7.220. The windfarm will be screened from view for the whole of this AGLV. Although minor effects have been predicted for Viewpoint 8 on the south side of Loch Brora, just outside the AGLV, this will not affect the ability to enjoy the area. The effect on the AGLV will therefore be **negligible**.

Ben Horn Proposed AGLV

- 7.221. The ZVI does not extend far into the AGLV, because of the topography of the hills along the western edge of the AGLV. Views will be possible from the tops and west facing slopes of

Beinn Dhorain, Col-bheinn, Beinn Smeorail, and from the tops and north facing slopes of Kilbraur Hill and Ben Horn. The ridge of Beinn Bhragaidh to Beinn Lunndaidh and the summit of Beinn Mhealaich will have limited views of the windfarm.

- 7.222. Because this AGLV takes in much of the coast and the hills associated with the coast, the main views and landscapes experienced here are of coastal slopes down the settled shore. However, from the hills, the inland landscape is also experienced, and may form an important part of the experience. The views from areas within the ZVI can be represented by Viewpoints 6, 8, 11, 13 and 15. It has been judged that the landscape effects will be major for Beinn Dhorainn (13) and Beinn Smeorail (15), moderate for Ben Horn (6) and Beinn Bhragaidh (11), and minor for South Loch Brora (8). The windfarm will also not be visible from most of Glen Loth. Overall, and considering that there will be no views of the windfarm from the coastal slopes and shores, the landscape effect on the area proposed for AGLV status is judged to be **moderate**.

Ben Klibreck Proposed AGLV

- 7.223. The easternmost part of this AGLV will have views of the windfarm, from Creag Mhor and Ben Armine. These views are very distant, the closest at the eastern extremity (Cnoc Caoruinn) being 16km away. There will also be views from the summit ridge of Ben Klibreck, at a distance of approximately 30km. Most areas within this designation, including those areas most visited, the slopes of Ben Klibreck and Glen Choire, will have no views of the windfarm. The views from the eastern part of the AGLV can be represented by Viewpoint 1, Cnoc Caoruinn, which is judged to have minor landscape effect. Overall, considering the extent of the views, the effect on the proposed AGLV area is judged to be **negligible**.

Achentoul Proposed AGLV

- 7.224. Most south facing slopes within this proposed AGLV will have long distant views of the windfarm. These views can be represented by Viewpoint 3, on the A897 north of Kinbrace, for which negligible landscape effects have been predicted. Viewpoint 2, near the southern boundary of the AGLV, will also have negligible effects. Although the views from the proposed area will be from higher elevation than these viewpoints, they are from long distances, over 20km, and many areas will not have a view of the windfarm. Overall, the effect on the AGLV as a whole is judged to be **negligible**.

Morven Proposed AGLV

- 7.225. Much of this proposed area lies beyond the 30km study area. For that part which lies within the study area, only a few hill tops are within the ZVI. There will therefore not be views from the lower lying moorland, and the glens between the lone mountain tops. Tops with views will include Morvern, Scaraben, Creag Scalabdale, and Cnoc Coire na Fearna, and Knockfin Heights. Viewpoint 10, on Morvern, was judged to have minor landscape effects. Considering the proportion of this proposed AGLV that lies within the ZVI, the effect on the area as a whole is judged to be **negligible**.

Historic Gardens and Designed Landscapes

- 7.226. According to the ZVI, Dunrobin Castle HGDL will have theoretical views of the windfarm from the northern most edge of the designation. However, as this area is in fact within Dunrobin Wood, the effect on this landscape is judged to be **negligible**.

- 7.227. There will be no hubs and only one blade tip visible from Kildonan Lodge HGDL. The view from this location can also be represented by Viewpoint 16, Baile an Or, which is judged to have negligible landscape effect. The effect on this designated landscape, with fewer turbines visible, is judged to be **negligible** also.

- 7.228. Langwell House HGDL does not fall within the ZVI, so that the effect will be **negligible**.

- 7.229. Skibo Castle HGDL also lies outwith the ZVI, so that the effect will be **negligible**.

Wild Land

- 7.230. Wild land is not a formal designation. Nevertheless, this assessment considers the potential effects on the 'physical attributes' of wild land as described in paragraph 7.81.

- 7.231. The site lies within the Ben Armine Forest wild land search area. However, it should be recognised that the site and its immediate surroundings do not currently possess all the attributes of wild land. The degree of naturalness of the area is affected by relatively modern landscape features that are on and around the site, namely the 275kV pylons that cross the site, tracks and coniferous forestry plantations. Contemporary use of the land is evident in the presence of the forestry plantations, and grouse butts. The site itself is not particularly remote or inaccessible. While the terrain is not rugged, it is still quite physically challenging in terms of rough, moorland and peat with some peat hags. To the west of the line of pylons, the area of Ben Armine and Borrobol Forests more closely represents the physical attributes of wild land.

- 7.232. The introduction of the windfarm would introduce a further modern feature into the landscape but is not judged to change the perceived remoteness or naturalness of the site because these attributes are already affected by the current conditions. The effect is judged to be **minor**.

- 7.233. With the area to the west of the line of pylons, towards Creag nam Fiadh (viewpoint 5), which has more wild land characteristics, there are no direct impacts. However, there is an issue of intervisibility, and potential impacts on the perceived naturalness relating to objects outside the area, when viewed in a particular direction.

- 7.234. The southernmost edge of the Morven wild land search area is within the ZVI, but there will be no direct impacts upon the attributes of that area. The effect on the wild land characteristics of that area will be **negligible**.

Archaeological sites

- 7.235. There will be no views of the windfarm from the cairn on the slopes of Balnacoil Hill. Although views will be possible from the top of Balnacoil Hill, they will not impact on the setting of the archaeological feature. The effect on the archaeological site is therefore judged to be **negligible**.

- 7.236. There will be no views of the windfarm from the tumulus at the head of Loch Brora, or from other places on the valley floor that could constitute the setting of the tumulus. The effect on the landscape setting of this archaeological site is therefore judged to be **negligible**.

Cumulative Effects

- 7.237. The cumulative assessment considers potential cumulative impacts on viewers and viewpoints within a 30km radius from the centre of the site, i.e. the study area. For each of these

viewers or from these viewpoints, windfarms within 30km have been considered. For viewers or viewpoints at the extremities of the study area, therefore, windfarms of up to 60km from the site are considered where there could be a view in one direction to Gordonbush, and in the opposite direction a view of another windfarm.

- 7.238. The assumption made during the assessment of cumulative effects is that the other windfarms are present in the landscape, and Gordonbush is being added. It is therefore the impact of the addition of Gordonbush to the array of windfarms that is considered in this section. This is, however, not the current situation, as most of the windfarms considered are not constructed at the time of writing.
- 7.239. **Figure 7.2** shows which windfarms, both existing and proposed, are considered in the cumulative assessment. At the time of preparation of the Environmental Statement, there were no data available for some of the windfarms that lie within 60km of the Gordonbush site¹. This cumulative assessment has therefore considered those windfarms for which data, or at least preliminary data, was available.
- 7.240. Basic data for the windfarms considered in the assessment of cumulative effects are given in **Table 7.9** below:

Table 7.9: Windfarms considered for the assessment of cumulative effects

Windfarm	Distance and direction	Number of turbines	Height to blade tip	Height to hub	Status
Beinn Tharsuinn	42km to the south	20	80m	47m	application
Buolfruich	35km to the northeast	15	72m	50m	approved
Causeymire	46km to the north	24	110m	60m	approved
Dounreay	55km to the northeast	10	93m	60m	application
Forss existing	56km to the northeast	2	78m	50m	existing
Forss proposed	56km to the northeast	9	78m	50m	application
Melvich	48km to the north	6	93m	60m	scoping
Novar	51km to the southwest	34	55.5m	35m	existing
Strath Brora	5km southwest to the nearest turbine	46	110m	70m	scoping

Analysis of the Cumulative ZVI

- 7.241. The cumulative ZVI, shown in **Figure 7.3**, when compared with the ZVI of the proposed windfarm at Gordonbush alone (**Figure 7.1**), predicts that there will be many places where

¹ Cambusmore and Novar Extension: no data available.

Gordonbush and one other proposed windfarm, Strath Brora, are visible at the same time. In addition, there are few places where more than two windfarms will be visible. These locations are generally on high ridges or tops and summits, as it is inherent in the nature of ridges and tops that there are long views to more distant and lower land.

- 7.242. Because of the proximity of the proposed Strath Brora windfarm to the proposed Gordonbush site, there will be considerable overlap between the ZVIs of these windfarms. In particular, the Strath Brora ZVI will overlap that of Gordonbush for most of the tops and ridges around Strath Brora, Strath na Seilge, Ben Armine Forest and Borrobol Forest. In addition views of both of these windfarms will be possible from the south side of Strath Fleet, across the Dornoch Firth, and from the tops of the Knockfin Heights to Creag Scabasdale ridge. Long distance views will also be possible from the tops of Ben Klibreck, Ben Griam Mor, Ben Griam Beag, and Ben Domhnaill.
- 7.243. In the south of the study area, the ZVIs of Novar and Gordonbush overlap only on a few high ridge or summit locations where long views in opposite directions are possible. Two such small locations are on An Stoc-bheinn and around Loch Buidhe to the south of Strath Fleet.
- 7.244. The ZVIs of Beinn Tharsuinn and Gordonbush also only overlap on high ridges and summits, but a few more locations are covered, such as Beinn Bhragaidh, Grumby Rock, Rhilochan and Beinn Domhnaill, as well as An Stoc-bheinn. In addition, there will be long views from Portmahomack and Tarbat Ness at over 25km distance.
- 7.245. In the north of the study area, there is no overlap of the Gordonbush ZVI with the ZVIs of Dounreay or Forss existing or Forss proposed windfarms. Views of Gordonbush, Causeymire and Buolfruich will be limited to the summits of Morven and Scaraben. Views of Gordonbush and Melvich will be possible from Ben Griam Mor, Ben Griam Beag, and very limited views from Meall a' Bhurich by Loch an Ruathair. From Knockfin Heights there will theoretically be views of four windfarms, Gordonbush, Melvich, Buolfruich and Causeymire.

Cumulative Views from Selected Viewpoints

- 7.246. **Table 7.10** sets out which windfarms are theoretically visible from each of the selected viewpoints. This is based on the ZVI model for each windfarm, and assumes a maximum viewing distance of 30km from each windfarm.

Table 7.10: Cumulative assessment for the selected viewpoints

No.	Viewpoint Location	Beinn Tharsuinn	Buolfruich	Causey-mire	Dounreay	Forss existing	Forss proposed	Melvich	Novar	Strath Brora	Distances	Type of view
1	Cnoc Caoruinn, Ben Armine Estate	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 6km to the south, Gordonbush is 15.1km to the east	same view
2	Kinbrace Cemetery	-	not in ZVI	-	-	-	-	-	-	not in ZVI	no cumulative views	-
3	A897 near Kinbrace	-	not in ZVI	not in ZVI	-	-	-	-	-	not in ZVI	no cumulative views	-
4	A897 Kildonan	-	not in ZVI	-	-	-	-	-	-	not in ZVI	no cumulative views	-
5	Creag nam Fiadh, Borrobol Forest	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 14km to the southwest, Gordonbush is 8.6km to the south	same view
6	Ben Horn	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 2km to the west and north, Gordonbush is 9.1km to the northeast	same view
7	Gordonbush access road	-	-	-	-	-	-	-	-	not in ZVI	no cumulative views	-
8	South Loch Brora	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 2km to the west, Gordonbush is 5.1km to the north	different views
9	Ardachu Road, Strath Fleet	not in ZVI	-	-	-	-	-	-	-	within ZVI	Strath Brora is 8km to the northeast, Gordonbush is 20.6km beyond it to the northeast	same view
10	Morven	-	within ZVI	within ZVI	-	-	-	-	-	within ZVI	Buolfruich is 15km to the east northeast, Causeymire is 25km to the northeast, and Strath Brora is 26km to the southwest. Gordonbush is 18.5km to the southwest	opposite views to Buolfruich and Causeymire, but Strath Brora in same view as Gordonbush
11	Beinn Bhragaidh	within ZVI	-	-	-	-	-	-	-	within ZVI	Beinn Tharsuinn is 27km to southwest, Strath Brora is 6km to the northwest, and Gordonbush is 12.4km to northeast	Beinn Tharsuinn in different view, but Strath Brora in same view as Gordonbush
12	Craggie Beg	not in ZVI	-	-	-	-	-	-	-	within ZVI	Strath Brora is 1km to the north, Gordonbush is 12.0km to the east	same view
13	Beinn Dhorain	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 12km to the southwest, Gordonbush is 4.6km to the west	same view
14	Sciberscross	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is within 2km to the east and west, Gordonbush is 8.0km to the northeast	different views
15	Beinn Smeorail	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 5km to the southwest, Gordonbush is 1.9km to the north	different views
16	A897 Baile an Or	-	not in ZVI	-	-	-	-	-	-	not in ZVI	no cumulative views	-
17	Armine Lodge access road	-	-	-	-	-	-	-	-	within ZVI	Strath Brora is 1km to the southwest, Gordonbush is 9.4km to the east	different views

- windfarm further than 30km from the viewpoint.

- 7.247. Most viewpoints have views of both the proposed Gordonbush and proposed Strath Brora windfarms. For the viewpoints that are close to the Strath Brora site, that windfarm will play an important part in the view and, depending on the final layout for Strath Brora, there are likely to be significant cumulative effects between Gordonbush and Strath Brora. In particular, viewpoints 1, 6, 8, 12, 14, 15 and 17 will have the Strath Brora windfarm forming a larger feature in the view than Gordonbush.
- 7.248. Viewpoints 10, Morven, and 11, Beinn Bhragaidh are the only two viewpoints with views of more windfarms than Gordonbush and Strath Brora. There are no viewpoints with windfarms in the same view, such that the viewer can see them without turning. Both viewpoints are summits of hills where panoramic views in all directions are possible.
- 7.249. From Morven (viewpoint 10), the approved windfarms at Causeymire and Buolfruich, and Strath Brora proposed windfarm will be visible, but not all in one view. Buolfruich and Causeymire will be visible on the lower land of Caithness to the northeast of Morven, at 16 and 25km away, respectively. Strath Brora will be visible on the hills beyond Gordonbush. The cumulative effect will be one of the addition of turbines directly in front of another windfarm (Strath Brora), such that they will appear to be part of the same, already large windfarm when viewed from this location. The effect of the addition of the Gordonbush turbines would therefore have **negligible** cumulative effect.
- 7.250. From Beinn Bhragaidh (viewpoint 11), Beinn Tharsuinn will be visible to the southwest, and a few turbines of Strath Brora will be visible to the northeast. The views to Beinn Tharsuinn and Gordonbush from this summit are over long distances (27km to Beinn Tharsuinn, 12.4km to Gordonbush), but Strath Brora would be considerably closer, at 6km. Strath Brora proposed windfarm would extend from the north to the northwest of the view, from 6km away to 1km away in the northwest. The addition of Gordonbush would appear to extend the area of turbines further to the northeast, but turbines would not be a new feature in the landscape, and the character of the view would not be altered. The cumulative effect of the addition of the proposed Gordonbush windfarm is judged to be **minor**.

Cumulative views when travelling through the landscape

- 7.251. Because there are very few places in the landscape where views of Gordonbush are possible from public roads, and these locations, (along the A897 only) have no views of the other windfarms, there are no locations in the wider landscape where views of multiple windfarms would include Gordonbush. Because of this, there will be little change in the overall impression of the landscape experienced when travelling through the area on the roads or railways.
- 7.252. The A9 has no views of Gordonbush at any point through the study area, although there are views of Beinn Tharsuinn and Novar to the south, and Buolfruich and Causeymire to the north. The addition of Gordonbush will therefore not change the experience along this route. There are no views of Gordonbush along the A839 and A836.
- 7.253. The A897 has no views of windfarms other than Gordonbush in some locations. There are therefore no cumulative impacts on this route.
- 7.254. Overall, there are very few hill tops in the study area where the proposed windfarm at Gordonbush would be visible at the same time as other windfarms except for Strath Brora. The cumulative effects of the introduction of the proposed turbines at Gordonbush in addition to the windfarms considered in the assessment, is judged to be **negligible**.

- 7.255. However, in practice, these other windfarms are not all present in the landscape, but are at different stages of the planning process (two are constructed, at Novar and Forss). It is considered likely that there will be significant cumulative effects if all of these windfarms are to be constructed, but those impacts are not attributable to any one windfarm.

Secondary Effects / Interactions

- 7.256. Landscape and visual effects may have potential impacts on tourism and recreation, and the setting of archaeological features. Issues relating to these subjects are covered in **Chapter 11, Archaeology and Cultural Heritage** and **Chapter 16, Recreation and Tourism**.

Mitigation

- 7.257. Within the design process, landscape and visual effects have been used to inform the design of the windfarm. However, due to the nature of the effects, it is inevitable that there will be residual effects. Possible mitigation measures include:
- Further design modification;
 - Off-site screen planting in key locations;
 - Changing the colour of tower, nacelle and turbine blades.
- 7.258. It is considered that there is limited scope for mitigation of effects. This is because the visual effects of the turbines are unavoidable given their size and location.

Design Modifications

- 7.259. The Design Statement is set out in **Appendix 7.1**. Mitigation of landscape and visual effects has been incorporated into the design of the windfarm, such that the final design has been influenced by potential effects. In particular, the layout of the windfarm as a grid based design has made the layout legible from several viewpoints, thus reducing visual confusion. In addition, the removal of several turbines on the ridge at the northern edge of the site has reduced the ZVI considerably, and has reduced the prominence of the windfarm in views that include the ridge.

Off site screen planting in key locations

- 7.260. Given that the potential visibility of a windfarm exceeds 25-30km, depending on weather conditions, provision and maintenance of off site planting (even if this was judged appropriate and did not itself have an effect upon landscape character) is not practical. It has therefore not been considered as a realistic mitigation option. Off-site planting is also viewpoint-specific, since trees must be close to the viewer to screen wider views. Roadside screening that will hide the turbines, will also hide the views of the landscape as a whole.

Changing the colour of tower, nacelle and turbine blades

- 7.261. The proposed colour of the wind turbines can be the subject of some debate. To date, most wind turbines have been painted semi-matt white and pale grey. In some weather conditions, for example with snow lying on the ground or bright skies, a pale turbine will be less visible. In most weather conditions, however, with dark clouds, or when the turbines are seen against the backdrop of land, pale turbines will be more visible. A pale colour can give a clean, technological and sculptural appearance to the turbines. Darker colours may reduce the