TECHNICAL APPENDIX 4.1: CRITERIA FOR LANDSCAPE AND VISUAL APPRAISAL

1.1 Introduction

1.1.1 This technical appendix details the various criteria and definitions which have been used for Landscape and Visual Appraisal (LVA) of the consented Viking Wind Farm and proposed varied development (comprising the variation of 10 m increase in turbine tip height and increased rotor diameter of up to 120 m).

Assessment Guidance

1.1.2 The LVAs have been carried out in accordance with best practice guidance, Guidelines for Landscape and Visual Assessment (Third Edition) (GLVIA3).

1.1.3 Whilst criteria are provided, the allocation of these to various landscape areas and visual receptors and application of potential effect ratings has been undertaken using professional judgement. All criteria given should be considered as points on a continuum.

1.2 Landscape Appraisal

Landscape Value

1.2.1 The relative value of the landscape is an important consideration in informing judgement of the significance of effects. Value concerns the perceived importance of the landscape, when considered as a whole and within the context of the study area. Landscape Value is established through consideration of the following factors:

- Presence of landscape designations, other inventory or registered landscapes/landscape features or identified planning constraints;
- The scenic quality of the landscape;
- Perceptual aspects such as wildness or tranquillity;
- Conservation interests such as cultural heritage features or associations, or if the landscape supports notable habitats or species;
- Recreational value; and
- Rarity, either in the national or local context, or if it is considered to be a particularly important example of a specific landscape type.

1.2.2 It should be noted that absence of a designation does not necessarily mean that a landscape or component is not highly valued as factors such as accessibility and local scarcity can render areas of nationally unremarkable quality highly valuable as a local resource.

Criteria

- High
  - The landscape is closely associated with features of international or national importance which are rare within the wider context;
  - The landscape is of high scenic quality and forma a key part of an important designated landscape or planning constraint; and/or
  - The landscape is of considerable local importance for its scenic quality, recreational opportunities or cultural heritage associations.

- Medium
  - The landscape is associated with features of national or regional importance which are relatively common in the wider context;
  - The landscape forms part of a designated landscape of is associated with other features of importance but is not rare or distinctive within the local context; and/or
  - The landscape is one of a number within the local context appreciated for its scenic qualities/ recreational opportunities or cultural heritage associations.
- Low
  - The landscape characteristics are common within the local and regional context and the landscape is not associated with any particular features or attributes considered to be important; and/or
  - The landscape is of poor scenic quality and is not appreciated for any recreational or cultural associations.

Landscape Sensitivity to Change

1.2.3 Sensitivity to change considers the nature of the landscape and its ability to accommodate development of the type proposed without compromising its key characteristics and components. There are two aspects which are considered when establishing the sensitivity:

- **Value**: the baseline value of the landscape and the contributory value of individual landscape characteristics or features to the landscape as a whole; and
- **Susceptibility to Change:** the ability of landscape receptors to accommodate development of the type proposed without changing the intrinsic qualities of the landscape as a whole.

Criteria

- **High** – A highly valued landscape of particularly distinctive character susceptible to relatively small changes of the type proposed;
- **Medium** – A reasonably valued landscape with a composition and characteristics tolerant of some degree of change of the type proposed; and
- **Low** - A relatively unimportant landscape which is potentially tolerant of a large degree of change of the type proposed.

Magnitude of Change

1.2.4 Magnitude of change concerns the degree to which a development would alter the existing elements and characteristics of the landscape. The appraisal of magnitude involves consideration of the nature and scale of the change which would occur in relation to the identified potential effects and also the duration and potential reversibility of the effect.

Criteria

- **High** – Notable change in landscape characteristics over an extensive area ranging to a very intensive change over a more limited area;
- **Medium** – Perceptible change in landscape characteristics over an extensive area ranging to notable change in a localised area;
- **Low** – Virtually imperceptible change in landscape characteristics over an extensive area or perceptible change in a localised area; and
- **Negligible** – No discernible change in any landscape characteristics or components.

Significance of Effect

1.2.5 Evaluation of the predicted level of significance of effect is carried out through analysis of the magnitude of change in relation to the identified sensitivity and using a degree of professional judgement. Significance of effect takes into account existing landscape elements, features and key characteristics and assesses the extent to which these would be lost or modified, in the context of their importance as part of the baseline landscape character.

1.2.6 For the purposes of the EIA Regulations, effects of a Moderate rating or greater are considered to be Significant

Criteria

- **Major** – The development is at considerable variance with the landform, scale and pattern of the landscape and would be a dominant feature, resulting in considerable reduction in scenic quality and large scale change to the intrinsic landscape character of the area.
- **Moderate** – The development is at considerable variance with the landform, scale and pattern of the landscape and would be a dominant features, resulting in considerable reduction in scenic quality and large scale change to the intrinsic landscape character of the area.
- **Minor** – The development does not quite fit with the scale, landform or local pattern of the landscape and may be locally intrusive but would result in an inappreciable reduction in scenic quality or change to the intrinsic landscape character of the area.
- **Negligible** – The development sites well within the scale, landform and pattern of the landscape and would not result in any discernible reduction in scenic quality of change to the intrinsic landscape character of the area.

1.3 Visual Appraisal

Sensitivity to change

1.3.1 Visual sensitivity to change considers the nature and viewing expectation of the receptor and takes into account the perceived value of the existing view and the susceptibility of the visual receptor to change. The importance of the aspect of the view which would be changed contributes to the sensitivity evaluation.

Criteria

- **High** – Where the appearance of the development would affect or alter an important part of a highly valued, impressive or well composed view with no detracting features;
- **Medium** – Where the appearance of the development would affect or alter a fairly important part of a valued or pleasing view or a notable part of a less well composed view with some detracting features; and
- **Low** – Where the appearance of the development would affect or alter an unimportant part of the overall view or would affect or alter a view which is of limited value or poorly composed.

Magnitude of Visual Change

1.3.2 Magnitude of change concerns the extent to which the existing view would be altered by the development. The evaluation of magnitude gives consideration to factors such as the scale or extent of the changes within the view, the extent to which this may alter the composition or focus of the view and the duration and reversibility of these changes.

1.3.3 Criteria

- **High** – Where the development would result in a very noticeable change in the existing view;
- **Medium –** Where the development would result in a noticeable change in the existing view;

- **Low –** Where the development would result in a perceptible change in the existing view; and
- **Negligible –** Where the development would result in a barely perceptible change in the existing view.

Significance of Effect

1.3.4 The level of effect identified concerns the importance of changes resulting from the development. Evaluation of the visual effect is based on consideration of the magnitude of change in relation to visual sensitivity, taking into account proposed mitigation measures, and is established using professional judgement. The assessment takes into account likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view.

1.3.5 Effects with a rating of Moderate or greater are considered to be significant.

Criteria

- **High** - The development would become a prominent and very detracting feature and would result in a very noticeable deterioration to an existing highly valued and well composed view;
- **Moderate** – The development would introduce some detracting features to an existing highly valued view or would be more prominent within a pleasing or less well composed view, resulting in a noticeable deterioration of the quality of view;
- **Minor** – The development would form a perceptible but not detracting feature within a pleasing or valued view or would be a prominent feature within a poorly composed view of lesser value, resulting in a small deterioration to the existing view; and
- **Negligible** – The development would form a barely perceptible feature within the existing view and would not result in any discernible deterioration to the view.

1.4 Cumulative Landscape and Visual Appraisal

Cumulative Landscape Appraisal

Cumulative Landscape Sensitivity to change

1.4.1 Cumulative landscape sensitivity comprises a combination of the overall capacity of the landscape to accommodate wind turbine development set against the remaining capacity when the cumulative baseline situation is taken into account (other wind energy sites either at application / appeal stage, consented or under construction, or operational).

Criteria

- **High** – The cumulative baseline scenario is very close to or achieves the overall capacity of the area to accommodate wind energy development resulting in little opportunity for additional development without intrinsic landscape change occurring;
- **Medium** – The cumulative baseline scenario does not yet reach the overall capacity of the area to accommodate wind energy development and leaves some opportunity for additional development without intrinsic landscape change occurring; and
- **Low** – The cumulative baseline scenario leaves considerable opportunity for additional development within the landscape without the overall capacity of the area to accommodate wind energy development being reached and intrinsic landscape change occurring.

Magnitude of Cumulative Landscape Change

1.4.2 Magnitude of cumulative landscape change concerns the degree of change which would occur due to the addition of the development into the cumulative baseline scenario, giving consideration to

the potential nature, size, scale and location of the proposed change within the context of the existing cumulative baseline scenario.

Criteria

- **High** – Notable change in landscape characteristics over an extensive area ranging to a very intensive change over a more limited area;
- **Medium** – Perceptible change in landscape characteristics over an extensive area ranging to notable change in a localised area;
- **Low** – Virtually imperceptible change in landscape characteristics over an extensive area or perceptible change in a localised area; and
- **Negligible** – No discernible change in any landscape characteristics or components.

Cumulative Landscape Effect Significance

1.4.3 Assessment of cumulative effect significance is based on analysis of the relationship between the cumulative sensitivity to change and the magnitude of change and is made using a degree of professional judgement. The cumulative effect is the result of the addition of the development to the cumulative baseline scenario, not the combined effect of all developments.

1.4.4 Effects with a rating of Moderate or greater are considered to be significant.

Criteria

- **Major** – The addition of the development to the cumulative baseline scenario would result in the capacity of the landscape to accommodate wind energy development being reached or exceeded and the combined appearance of wind turbines in the landscape becoming a dominant and character defining feature.
- **Moderate** – the addition of the development to the cumulative baseline scenario would increase the appearance of wind turbines in the landscape to the extent that they may becoming locally dominant, but the development would not exceed the overall capacity of the landscape to accommodate wind energy development.
- **Minor** – The addition of the development to the cumulative baseline scenario would add to the appearance of wind turbines in the landscape but would not result in a noticeable change to key landscape characteristics.
- **Negligible** – The addition of the development to the cumulative baseline scenario would not result in any discernible increase in the appearance or dominance of wind turbines in the landscape.

Cumulative Visual Appraisal

Cumulative Visual Sensitivity to Change

1.4.5 Cumulative visual sensitivity to change concerns the nature of the existing view in the context of the cumulative baseline scenario, and the potential for further wind turbines to be accommodated within that view without significantly altering, obstructing or dominating the view.

1.4.6 Criteria

- **High** – Where wind energy developments within the cumulative baseline scenario are well accommodated within a valued or well composed view and/or the proposed changed landscape forms an important part of the view;
- **Medium** – Where wind energy developments within the cumulative baseline scenario are present but not prominent in the existing view, and/or the proposed changed landscape forms a less important part of the view; and

- **Low** – Where wind energy developments within the cumulative baseline scenario are prominent in an existing view and/or the changed landscape forms an unimportant part of the view.

Cumulative Magnitude of Visual Change

1.4.7 Cumulative magnitude of visual change concerns the measurement of change which would occur as a result of the introduction of the development into the cumulative baseline scenario. This is identified based on the consideration of the potential nature, size, scale and location of the proposed change within the existing view, and in relation to the existing wind farms/turbines within the view.

Criteria

- **High** – Where the development would result in a very noticeable change in the existing view;
- **Medium –** Where the development would result in a noticeable change in the existing view;
- **Low –** Where the development would result in a perceptible change in the existing view; and
- **Negligible –** Where the development would result in a barely perceptible change in the existing view.

Cumulative Visual Effect Significance

1.4.8 Assessment of cumulative visual effect significance is based on analysis of the relationship between the cumulative sensitivity to change and magnitude of change and is made using a degree of professional judgement. The cumulative effect assessed is the result of the addition of the development to the existing cumulative baseline scenario within the view and not the combined effect of all developments.

1.4.9 Effects with a rating of Moderate or greater are considered to be significant.

- **Major** – The addition of the development to the baseline view would result in a very noticeable increase in wind turbines within the view to the extent that they would become a dominating or obstructive feature within the view.
- **Moderate** – The addition of the development to the baseline view would result in a noticeable increase in wind turbines within the view to the extent that they would become prominent, but would not dominate or obstruct the view
- **Minor** – The addition of the development to the baseline view would result in a perceptible increase in wind turbines within the view but would not increase the prominence of wind farms / wind turbines as a feature in the view;
- **Negligible** – The addition of the development to the baseline view would not result in any discernible increase in the appearance of wind turbines within the view.

TECHNICAL APPENDIX 4.2: CANDIDATE LOCAL LANDSCAPE AREAS ASSESSMENT

Introduction

This Technical Appendix provides an assessment of the potential effects of the consented Viking Wind Farm on the candidate Local Landscape Areas (cLLAs) proposed by Shetland Islands Council (SIC)[1].

The assessment has considered those cLLAs falling within a study area of 16 km from the consented Viking Wind Farm.

6 cLLAs falling within the study area have been included in the assessment as follows:

- cLLA 2 Nibon and Mangaster;
- cLLA 3 Vementry and West Burrafirth;
- cLLA 6 Culswick and Westerwick;
- cLLA 7 Weisdale;
- cLLA 11 Gletness and Skellister; and
- cLLA 12 Lunna Ness and Lunning.

The following cLLAs were scoped out of the assessment due to their position on the periphery of the study area with limited intervisibility with the consented Viking Wind Farm:

- cLLA 5 Walls and Vaila; and
- cLLA 10 Aith Ness and Noss.

[1] SIC (2014) Shetland Local Development Plan: Supplementary Guidance – Local Landscape Area (Consultation Draft)

Assessment of Effects on cLLAs

Table 1: Nibon and Mangaster cLLA (cLLA 2)

Description	This cLLA covers the south-western part of the Northmavine peninsula, including Mavis Grind and Ness of Culsetter to the south. It lies between the Esha Ness and Muckle Roe sections of the Shetland NSA. The cLLA is situated approximately 10 km, at its nearest point, to the north east of the consented Viking Wind Farm, with approximately two thirds lying within the study area.
Key Characteristics	• Rugged landscape of rocky hills interspersed with numerous lochans; • Sequence of long views along voes and sudden opening of wide panoramas; • Intricate coastal edge with array of features and colours; and • Panoramic views across St. Magnus Bay. Inland-areas of low rugged knolls and lochans with heather and rough grass cover. Some isolated groups of crofts and farms on lower slopes. Gunnister Voe and Mangaster Voe penetrate deep inland. Some settlement, aquaculture at Voe edges/ mouths. Mavis Grind- narrow isthmus where North sea and Atlantic almost meet. Coastal-dramatic cliffs, stack and geo features; wave action a contrast to calmer Voes.
Landscape Value	High
Sensitivity to Type of Change Proposed	Due to the high landscape value and the small scale sense of enclosure within the voes and coastal landscapes which are very susceptible to change of the type proposed, sensitivity is considered to be **Medium**.
Magnitude of Landscape Change	Changes to this landscape would be indirect. The south east facing higher slopes of hills and ridges may be intervisible with the consented Viking Wind Farm at a distance but there would be no intervisibility with the coastal features and voes, being at a lower level. The nature of this landscape, with steep sided voes combined with the focus of the landscape funnelled seaward by the dramatic landform results in a magnitude of change which is **Negligible to Low**.
Significance of effect	**Minor**

Table 2: Vementry and West Burrafirth cLLA (cLLA 3)

Description	Located on the north coast of the west Mainland, this area extends east from the Hill of Bousta to Vementry, including West Burra Firth, Brindister Voe and the Voe of Clousta. This cLLA is situated from around 5 km to the west of the consented Viking Wind Farm, stretching westwards along the coast, with approximately two thirds lying within the study area.
Key Characteristics	• Distinctive rocky rugged terrain based on Lewisian Gneiss; • Complex interface between land and sea, intricate pattern of voes, sounds and islands; and • Isolated pockets of settlement around sheltered voes. Rugged, hilly landscape with lochans, indented by voes, sheltered bays and sounds and small islands. Limited, dispersed settlement. Some aquaculture.
Landscape Value	High
Sensitivity to Type of Change Proposed	Due to the high landscape value and the small scale sense of enclosure within the voes and coastal landscapes which are very susceptible to change of the type proposed, sensitivity is considered to be **Medium to High**
Magnitude of Landscape Change	Changes to this landscape would be indirect. The east facing higher slopes of hills may be intervisible with the consented Viking Wind Farm but the coastal features, sheltered valleys and voes, being at a lower level, and predominantly north facing in orientation, would not be intervisible. The nature of this landscape, with steep sided sheltered voes, inlets and valleys combined with the focus of the landscape northwards to the sounds by the landform, results in a magnitude of change which is **Negligible to Low**.
Significance of effect	**Minor**

Table 3: Culswick and Westerwick cLLA (cLLA 6)

Description	This cLLA area lies to the northwest of The Deeps and includes the granite coast of the southernmost section of the west Mainland peninsula, with the villages of Culswick, Westerwick and West Skeld and adjoins the Southwest Mainland NSA to the east. All of this cLLA falls within study area to the south-west of the consented Viking Wind Farm between approximately 10 km and 15 km.
Key Characteristics	• Rugged, intricate coastline with tall cliffs, dramatic caves, and rocky coves expressing the granite geology; • High variety of coastal features ; • Inland topography of gently undulating moorland interspersed with a high concentration of lochs and water courses; and • Intact crofting landscapes. Coastal scenery outstanding especially at Westerwick; rock stacks and rugged red granite cliffs; bays and inlets. Improved and rough pasture along coastline. Inland, low knolls with isolated dwellings Largest settlement, Skeld, lies at head of a large inlet; some smaller settlements inland eg. Wester Skeld.
Landscape Value	High
Sensitivity to Type of Change Proposed	Due to the highly valued coastal landscapes and small-scale intricate character of the coastline which is very susceptible to large scale change of the type proposed, sensitivity is considered to be **Medium to High**.
Magnitude of Change	No part of this area would be directly affected. The north facing slopes of higher knolls would be intervisible with the consented Viking Wind Farm; however the key coastal features, sheltered inlets and bays being at a lower level and predominantly south facing in orientation would not be intervisible. The nature of this landscape, with enclosed south facing coastal landscape, combined with distance, results in a magnitude of change which is **Low**.
Significance of Effect	**Minor**

Table 4: Weisdale cLLA (cLLA 7)

Description	This cLLA encompasses the settled part of the Weisdale valley and Weisdale Voe, from the Southwest Mainland NSA boundary in the south, to Springfield in the north. All of this cLLA falls within study area close to the consented Viking Wind Farm to west, north and north-east.
Key Characteristics	• Unique in Shetland as the location of the only substantial woodlands; • An enclosed valley landscape, opening out to wide voe; and • Panoramic views across Weisdale Voe to the south, taking in an attractive composition of the islands and sea towards Fitful Head. Upper valley; extensive clumps of mixed woodland; farms and outbuildings; lush green improved pasture in valley floor contrasting with rough grass and moorland valley sides; drystone dyke enclosed, relatively small scale valley with sheep and cattle grazing; remnants of former settlement on valley sides; Weisdale Mill and church further enrich this landscape. Lower valley; Broad, deep voe; flat settled platform either side with Heglibister (E) and Cott(W)along water's edge below steeply rising valley sides. View down Voe to NSA is dominant attractor.
Landscape Value	High
Sensitivity to Type of Change Proposed	This is a highly valued landscape due to its local rarity and is very susceptible to change of the type proposed due to its small scale patterns of woodland and framed views towards the voe to the south and NSA. Landscape sensitivity is therefore considered to be **High**. .
Magnitude of Change	No part of this area would be directly affected. However, a majority of the area would be intervisible with the consented Viking Wind Farm, except where screened by foreground trees. The nature of this landscape, with enclosed north / south orientated views, combined with close distance, results in a magnitude of change which is **Medium-High**.
Significance of Effect	**Moderate**

Table 5: Gletness and Skellister cLLA (cLLA 11)

Description	This cLLA is comprised of a headland area in South Nesting is located between Cat Firth and South Nesting Bay. All of the cLLA falls within study area, very close to the south eastern quadrant of the consented Viking Wind Farm.
Key Characteristics	• An intact, settled area, whose character has been preserved through a sympathetic approach to development; • An understated beauty of intricate and generally sheltered coast, rocky islands and ayres; and • Rich in wildlife, a quiet tranquil area. Low ridges, hollows, lochans and knolls with numerous smallholdings and farms and other settlement. Small scale, dispersed housing generally but quite dense by Shetland standards. Vass in particular is quite a densely settled area. Eastern corner less settled with low hills and bays, e.g., Wick and Dock of Lingness. Small group of crofts and clump of trees at Ewick. South west corner similar; main feature being Gletness, a small group of houses overlooking N. Voe of Gletness. Overall a developed but tranquil, unspoiled atmosphere prevails.
Landscape Value	High
Sensitivity to Type of Change Proposed	This landscape is highly valued and is considered very susceptible to change due to its tranquil unspoiled crofting character with mostly open views. Landscape sensitivity is considered to be **High**.
Magnitude of Change	Changes to this landscape would be indirect. No part of this area would be directly affected. However, a majority of the area would be intervisible with the consented Viking Wind Farm, except where screened locally by foreground topography. The nature of this landscape, with generally uninterrupted intervisibility, albeit with some local topographic screening and south-facing aspects on southern coastal fringes, combined with close distance, results in a magnitude of change which is **Medium-High**.
Significance of Effect	**Moderate-Major**

Table 6: Lunna Ness and Lunning cLLA (cLLA 12)

Description	This cLLA includes the long, narrow, Lunna Ness, together with Vidlin Voe and the broader headland to the south and is location on the north-eastern tip of the Mainland, between 5 km and 15 km to the north-east of the consented Viking Wind Farm.
Key Characteristics	• Attractive settlements around Vidlin Voe, with a distinctive pattern and character; • Long, narrow and remote headland of Lunna Ness; Rugged moorland hills around Lunning; and • Historic features and associations at Lunna, including the ancient kirk and the Shetland Bus. Vidlin area; village forms the fulcrum for this area, clustered around inlet and harbour from which Whasay ferry runs periodically; Gillsbreck, Gardin and Kirkbister overlook voe on east side; voe contains two fish farms and a shore base; busy, developed and settled characteristics Lunning area; rocky knolls with small lochans; relatively high compared to surroundings; at Lunning, small farm and crofts; remains of old crofts and rigs; views across to Whalsay Lunna peninsula; designed landscape/ house at narrowest point; main axis points south; Lunna kirk adds to cultural richness of this area; northern end of peninsula only has a few crofts; mostly rugged moorland with rough grass and lochans; wide views from higher points to Whalsay and mainland
Landscape Value	Medium
Sensitivity to Type of Change Proposed	Due to a combination of busy developed area at the head of Vidlin Voe reducing sensitivity, contrasting with the higher sensitivity tranquil crofting landscape and locally rare designed landscape further away Landscape sensitivity is considered to be **Medium to High**.
Magnitude of Change	Changes to this landscape would be indirect. However, a majority of the area would be intervisible with the consented Viking Wind Farm except where screened by foreground topography. Nevertheless, the foreground development context and localised topographic screening , combined with distance, results in a magnitude of change ranging from **Low to Medium**.
Assessment of Effect	**Minor-Moderate**

TECHNICAL APPENDIX 4.3: CONSENTED VIKING WIND FARM VISUAL EFFECTS TABLES

VIEWPOINT RECEPTOR LOCATIONS; CONSENTED VIKING WIND FARM (2012)

Notes:

1. New development since 2009 Viking ES Application LVIA featuring in the view, or near to the VP, is shown in italics.
2. Where there have been changes in level of sensitivity, magnitude, and/ or effect since the 2009 Viking ES Application LVIA, the original value is shown in brackets for comparison purposes.
3. VP numbers from the 2009 Viking ES Application LVIA are shown in brackets.

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
1(1) HU 36676 57546	**Burn of Lunklet** Footpath; popular walk for visitors/ locals	East and west facing views along the valley	High	Front on and side on views towards the consented Viking Wind Farm on the surrounding hills, including tracks.	1.3km	25	High	High	Major	Major
2(2) HU 34650 55954	**Aith Pier** West side of settlement overlooking Voe towards east.	North east facing views up/ across Aith Voe *A number of new houses have been built within the view*	Medium	Front on and oblique views partially screened by topography on other side of Voe.	2.2km	33	High	High	Moderate-Major	Moderate-Major

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
3(3) HU 39503 53203	**Kergord Valley (Weisdale Mill)** Popular destination for visitors/ locals	North and south facing views up and down the valley.	High	Front on views towards the consented Viking Wind Farm, including tracks.	3.0km	34	High	High	Major	Major
4(6) HU 48656 69210	**Lunna House** Listed building/ designed landscape; visitor destination	South west facing views along main axis of designed vista.	High	Front views within a wide panorama. No turbines would be visible within the main axis. *No turbines in views to west compared to Viking Application ES; only to south, therefore more distant.*	(6km) 10.4km	39	(Medium) Low	(Medium) Low	Moderate-Major) Minor-Moderate	Moderate-Major) Minor-Moderate
5(8) HU 47807 40770 478 407	**Knab - Knab Rd Lerwick** Highest point of largest settlement on Shetland; golf course	North facing views with surrounding buildings lower down in foreground. Port industrial views in mid-ground with Luggies Knowe turbine now featuring.	Low	Elevated front on, but distant views.	15.2km	77	Low	Low	Minor	Minor

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
6(11) HU 47353 59712	**North Nesting (Laxfirth)** Settlement, North Nesting Hall; house on hill *+ two new 1-storey houses*	North east and south-west facing views, across the valley to ridge .	(Medium) Medium-High	Front on in south west facing views; including tracks.	1.8km	42	High	High	Moderate-Major	Moderate-Major
7(12) HU 46967 54160	**South Nesting** Settlememt *+ one new 1-storey house*	North-west low level views.	High	Front on views towards the consented Viking Wind Farm; including track and borrowpit.	3.0km	73	High	High	Major	Major
8(13) HU 29327 52684	**Viewpoint from A971 between Bixter and Walls** Visitor vantage point/ picnic stop on main road to west	East facing slightly elevated views over Hulma Water.	High	Front on views towards the consented Viking Wind Farm in middle distance.	7.7km	47	Medium	Medium	Moderate-Major	Moderate-Major

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
9(14) HU 41343 62511	**Near Voe (Car Park at Laxo road junction)** Car park at Laxo road junction at Loch of Voe	360 degree relatively enclosed views of Petta Dale.	Medium	Front on views to north, east and south, including tracks and borrowpit. *North facing views no longer contain turbines compared to Viking ES Application*	(1km) 1.2km	31	(High) Medium-High	(High) Medium-High	Moderate-Major	Moderate-Major
10(15) HU 48662 66079	**Vidlin** Low density settlement. *A number of new houses have been built near VP since 2009*	West and north west elevated views over Vidlin Voe	(High) Medium-High	Elevated side- on and oblique to south within a wide panorama. *Turbines no longer visible in front views to west and further away* compared to Viking ES Application	(5km) 6.1km	94	Medium	Medium	(Moderate-Major) Moderate	(Moderate-Major) Moderate

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
11(17) HU 54340 61523	**Whalsay (Clate)** Low density settlement. *A number of new houses have been built near VP*	South west facing elevated panoramic views towards the mainland *(including in distance, Luggies Knowe turbine and Dales Voe oil rig decommissioning yard)*	High	Elevated, oblique/front on views. Consented Viking Wind Farm would be visible in a good proportion of view. *although less than Viking ES Application*	(8.5km) 8.7km	94	(High) Medium-High	(High) Medium-High	(Major) Moderate-Major	(Major) Moderate-Major
12(28) HU 41446 59987	**A970 Kames** Primary north-south route through mainland	South facing slightly elevated views down Petta Dale	High	The consented Viking Wind Farm would dominate views in all directions; compounds and borrowpits also visible.	0.6km	23	High	High	Major	Major
13(33) HU 40285 46224	**Wormadale Hill (A971)**	South facing elevated wide panoramic views down the coast	Medium	Distant, oblique views predominantly screened by interim landform; small part of wider view	6.9km	33	Low	Low	Minor	Minor

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
14(39) HU 34825 67463	**Busta Junction – Brae** *A number of new houses have been built near VP.*	South east facing elevated views over Busta Voe and Brae. *Distant view of gas plant stacks to north*	High	Fairly distant/ oblique views towards the consented Viking Wind Farm in middle distance. *No turbines to north and east compared to Viking ES Application*	(3km) 8.9km	71	(High) Low	(High) Low	(Major) Minor-Moderate	(Major) Minor-Moderate
15(40) HU 40340 64148	**Mulla, Voe**; Higher density housing to north of village. *A number of new houses have been built near VP.*	Elevated south east facing views across the valley	High	Front on and oblique views towards the consented Viking Wind Farm	(2km) 3.3km	57	High	High	Major	Major
16(41) HU 44423 63575	**Laxo**; small dispersed settlement. *A number of new houses have been built near VP*	Main focus of view east down Laxo Voe and Dury Voe towards Whalsay. *However some of new houses do face southwards or inland.*	(Medium/ High) High	Mixed orientation views towards the consented Viking Wind Farm including access tracks.	(1.5km) 1.4km	47	High	High	(Moderate -Major) Major	(Moderate -Major) Major

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance of nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
17(43) HU 38760 51749	**Heglibister**	North and south facing views, up Weisdale Valley or down Weisdale Voe	High	Only a small part of wider view but front - on in north facing views up the valley	4.6km	34	Medium	Medium	Moderate-Major	Moderate-Major

TECHNICAL APPENDIX 4.4: PROPOSED VARIED DEVELOPMENT VISUAL EFFECTS TABLES

VIEWPOINT RECEPTOR LOCATIONS; PROPOSED VARIED DEVELOPMENT (2018)

Notes:

1. There were found to be no increases in Sensitivity, Magnitude or Effect arising from the proposed varied development compared to the consented Viking Wind Farm (see Appendix 4.2), when assessed in July 2018 from the 17 representative viewpoints listed below.
2. This assessment considers the proposed varied development as described in Chapter 2 (Description of Development) which comprises a tip height of 155 m and rotor diameter of 120 m.
3. This assessment does not take into account visual effects associated with aviation lighting which are the subject of a separate study reported upon in Technical Appendix 4.6.

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
1(1) HU 36676 57546	**Burn of Lunklet** Footpath; popular walk for visitors/ locals.	East and west facing views along the valley.	High	Front on and side on views towards the proposed varied development on the surrounding hills, including tracks.	1.3km	25	High	High	Major	Major

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
2(2) HU 34650 55954	**Aith Pier** West side of settlement overlooking Voe towards east.	North east facing views up/ across Aith Voe.	Medium	Front on and oblique views partially screened by topography on other side of Voe.	2.2km	34	High	High	Moderate-Major	Moderate-Major
3(3) HU 39503 53203	**Kergord Valley (Weisdale Mill)** Popular destination for visitors/ locals.	North and south facing views up and down the valley.	High	Front on views towards the proposed varied development, including tracks.	3.0km	39	High	High	Major	Major
4(6) HU 48656 69210	**Lunna House** Listed building/ designed landscape; visitor destination.	South west facing views along main axis of designed vista.	High	Front views within a wide panorama. No turbines would be visible within the main axis.	10.4km	40	Low	Low	Minor-Moderate	Minor-Moderate

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
5(8) HU 47807 40770	**Knab - Knab Rd Lerwick** Highest point of largest settlement on Shetland; golf course.	North facing views with surrounding buildings lower down in foreground. Port industrial views in mid-ground with Luggies Knowe turbine also prominent. .	Low	Elevated front on, but distant views.	15.2km	80	Low	Low	Minor	Minor
6(11) HU 47353 59712	**North Nesting (Laxfirth)** Settlement, North Nesting Hall; house on hill.	North east and south-west facing views, across the valley to ridge.	Medium-High	Front on in south west facing views; including tracks.	1.8km	46	High	High	Moderate-Major	Moderate-Major
7(12) HU 46967 54160	**South Nesting**	North-west low level views.	High	Front on views towards the proposed varied development including track and borrowpit.	3.0km	76	High	High	Major	Major

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
8(13) HU 29327 52684	**Viewpoint from A971 between Bixter and Walls**; Visitor vantage point/ picnic stop on main road to west.	East facing slightly elevated views over Hulma Water.	High	Front on views towards the proposed varied development in middle distance.	7.7km	48	Medium	Medium	Moderate-Major	Moderate-Major
9(14) HU 41343 62511	**Near Voe (Car Park at Laxo road junction)** Car park at Laxo road junction at Loch of Voe.	360 degree relatively enclosed views of Petta Dale.	Medium	Front on views to north, east and south, including tracks and borrowpit.	1.2km	31	Medium-High	Medium-High	Moderate-Major	Moderate-Major
10(15) HU 48662 66079	**Vidlin** Low density settlement.	West and north west elevated views over Vidlin Voe.	Medium-High	Elevated side- on and oblique to south within a wide panorama.	6.1km	95	Medium	Medium	Moderate	Moderate

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
11(17) HU 54340 61523	**Whalsay (Clate)** Low density settlement.	South west facing elevated panoramic views towards the mainland.	High	Elevated, oblique/front on views. Proposed varied development would be visible in a good proportion of view.	8.7km	94	Medium-High	Medium-High	Moderate-Major	Moderate-Major
12(28) HU 41446 59987	**A970 Kames** Primary north-south route through mainland.	South facing slightly elevated views down Petta Dale.	High	The proposed varied development would dominate views in all directions; compounds and borrowpits also visible.	0.6km	25	High	High	Major	Major
13(33) HU 40285 462243	**Wormadale Hill (A971)**	South facing elevated wide panoramic views down the coast.	Medium	Distant, oblique views predominantly screened by interim landform; small part of wider view	6.9km	36	Low	Low	Minor	Minor
14(39) HU 34825 67463	**Busta Junction – Brae**	South east facing elevated views over Busta Voe and Brae.	High	Fairly distant/ oblique views towards the proposed, varied development in middle distance.	8.9km	73	Low	Low	Minor-Moderate	Minor-Moderate

VP No. / (2009 VP No.) +OS Grid Ref.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible turbine	Potential no. of turbines visible	Magnitude		Effect	
							Construction	Operational	Construction	Operational
15(40) HU 40340 64148	**Mulla, Voe**; Higher density housing to north of village.	Elevated south east facing views across the valley.	High	Front on and oblique views towards the proposed varied development.	3.1km	62	High	High	Major	Major
16(41) HU 44423 63575	**Laxo** Small dispersed settlement.	Main focus of view east down Laxo Voe and Dury Voe towards Whalsay.	High	Mixed orientation views towards the proposed varied development including access tracks.	1.4 km	47	High	High	Major	Major
17(43) HU 38760 51749	**Heglibister** Roadside vantage point above Heglibister.	North and south facing views, up Weisdale Valley or down Weisdale Voe.	High	Only a small part of wider view but front - on in north facing views up the valley.	4.5km	37	Medium	Medium	Moderate-Major	Moderate-Major

TECHNICAL APPENDIX 4.5: TECHNICAL METHODOLOGY FOR VISUAL REPRESENTATION

1.1 Introduction

1.1.1 The following is a detailed methodology for production of technical outputs contributing to the appraisal.

1.1.2 The Landscape and Visual Appraisal (LVA) of the proposed development included in Chapter 4 is informed by several technical models and drawings and the methods for producing these are described below. There are various guidance documents and standards which have informed their production and so, where relevant, references are included. A list of References is also provided at the end of this Appendix.

1.1.3 It should be remembered that *"visualisations, whether they are hand drawn sketches, photographs or photomontages, can never exactly match what is experienced in reality. They should, however, provide a representation of the proposal that is accurate enough for the potential impacts to be fully understood"* (SNH, 2017: para 96, p22) and that *"visualisations in themselves can never provide the full picture in term of potential impacts; they only inform the appraisal process by which judgements are made"* (SNH, 2017; para 98, p22).

1.1.4 Viewpoint photography was undertaken by either ASH design + assessment or Gray Caledonian Photography. All editing and modelling to inform the landscape visual impact appraisal has been undertaken by ASH design + assessment Ltd.

1.2 Current Guidance

1.2.1 In February 2017, SNH published an update (Version 2.2) to their guidance document *'Visual Representation of Wind Farms'*.

1.3 ZTV Production

1.3.1 Zone of Theoretical Visibility (ZTV) diagrams have been prepared using ArcGIS (Version 10.3) and an Ordnance Survey (OS) Terrain 5 digital terrain model (DTM) to illustrate the potential visibility of the wind farm. The turbines considered in this appraisal were modelled as follows:

- Overall Tip Height: 155 m (Hub Height: 95 m and Rotor Diameter: 120 m)
- Overall Tip Height: 145 m (Hub Height: 90 m and Rotor Diameter: 110 m)

1.3.2 Terrain 5 is a grid of heightened points with regular five metre post spacing. The software uses this information to create a virtual, three dimensional, bare ground model which is representative of the earth's surface (including its curvature). It does not take into account elements above the ground such as buildings or trees. Therefore, while the ZTV indicates areas of potential visibility of the proposed development, in reality, not all locations within the ZTV would necessarily afford a view of it. Nevertheless, the ZTV is a valuable tool in both landscape character and visual impact appraisal.

1.3.3 While Terrain 5 is a product which is updated by OS on a quarterly basis, the design and appraisal model was created using data available in October 2017. This data has not been updated since that time. This prevents excessive reworking of models and allows for continuity during the appraisal process.

1.4 Photography

1.4.1 Photographs have been taken using one of two full frame sensor (equivalent to a 35 mm film frame), digital single lens reflex (DSLR) cameras: either a Canon EOS 5D Mark II or a Canon EOS 6D. Both of these cameras have been fitted with the Canon EF 50mm f/1.4 USM lens (a 50 mm prime lens) fitted with a UV filter.

1.4.2 The viewpoint photographs were taken by a camera attached to a tripod and rotating panorama unit (set to 20° intervals for daytime photographs and 15° intervals for night-time photography) and with a levelling base. This was in order to maintain a stable platform for photography work, and to ensure an even overlap for successive panorama images.

1.4.3 On arrival at each viewpoint location, a global positioning system (GPS) navigation device was switched on and allowed to acquire satellite positions. This device will identify its location, to the nearest metre, using a 12 figure OS grid reference, e.g. 132807 925438 or NB 32807 25438. In order to increase the accuracy of readings, the grid reference was not recorded until all other work at the viewpoint was completed and the GPS device had been switched on for several minutes. This passage of time allows the GPS device to increase the accuracy of readings through repeated, automated measurements.

1.4.4 Night-time photography was taken at twilight (approximately 30 minutes after sunset). The appearance of existing lights (street lighting, domestic lighting, etc) within the photographs is considered to be an accurate representation of the conditions.

1.4.5 While at a viewpoint, the landscape architect or photographer recorded the grid reference, ground level and camera viewing height along with a brief description of the nature of view, weather conditions and visibility. The camera embeds details of the date, time, camera make and model, the lens focal length, shutter speed, f-number and ISO speed rating as metadata in each photograph file.

1.4.6 Baseline photographs were then downloaded and combined to create 360° baseline panoramic images at cylindrical projection using Kolor Autopano Pro 3 software.

1.5 Wireline Preparation

1.5.1 Cumulative wirelines and planar projection wirelines of the proposed development were created for all viewpoints using the same turbine model, ReSoft WindFarm software and ground model detailed above, as well as Hugin to create the planar projection wirelines.

1.5.2 Similar to the limitations of the ZTV, these visualisations provide an indication of the Development's potential appearance but do not take account of screening elements such as buildings, trees or minor variations in topography.

1.6 Photomontage Preparation & Rendering

1.6.1 Photomontage visualisations were created using the baseline panoramic photograph images described above. Their creation involved using Photoshop CC2017 to overlay photographs with exported rendered turbines. Topographic wirelines were used to help ensure accurate placement of the turbines within the landscape.

1.6.2 Photomontages have been prepared to illustrate the proposed varied development wind turbines, as these are the features which would be altered as a result of the variation. Proposed permanent tracks have also been shown in the photomontages as these were included on the photomontages included with the 2009 Viking ES Application. However, to avoid confusion, other ancillary features have not been included as these were not included in previous photomontages and no variation is proposed to these features.

1.6.3 The appearance of turbine lighting in the photomontages is based on experience of similar intensity turbine lighting in similar conditions and is considered to be an accurate representation.

TECHNICAL APPENDIX 4.6: VIKING WIND FARM: SECTION 36C VARIATION TURBINE LIGHTING VISUAL IMPACT ASSESSMENT

1.1 Introduction and Methodology

1.1.1 ASH design + assessment Ltd. (ASH) has undertaken a Visual Impact Assessment (VIA) of turbine lighting proposals for the Viking Wind Farm S36C Variation (the proposed varied development). The report is accompanied by photomontage visualisations and wirelines in accordance with SNH guidance.

1.2 Scope of Assessment and Assumptions

1.2.1 This assessment is based on the requirements of the CAA policy statement "*Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150 m Above Ground Level*" (the CAA policy statement).

1.2.2 In line with the CAA policy statement, the assessment is therefore based on the following assumptions:

- Each of the 103 turbines of the proposed varied development would have a 2000 candela red light fitted to the top of the nacelle (assumed to be at 95 m), visible in all directions;
- Each of the 103 turbines would have a 32 candela red light fitted to the tower at half the height of the nacelle (assumed to be at 47.5m). This would require three lights arranged around the tower so as to be visible in all directions and therefore may result in two lights being visible from some specific angles;
- Lights would be switched on at all times when ambient lighting is below 500 lux. This therefore assumes that in addition to the hours of darkness, lights would be on as daylight starts to fade before sunset, as the sky lightens in the morning, or on a dark, overcast day.
- All lights would be steady (i.e. not flashing). However, depending on wind direction, moving turbine blades seen in front of lights may give an impression of flashing lights from some locations.

1.2.3 A diagram showing the approximate locations of turbine lights is included in Annex 1 of this report.

Zone of Theoretical Visibility

1.2.4 A hub height Zone of Theoretical Visibility (95 m above existing ground level) was generated to illustrate areas where the proposed nacelle lights would theoretically be obtained using ArcGIS software. This is presented in Figure 1. Detailed technical information on the methods for production of ZTVs is included in the Technical Appendix 4.5: Technical Methodology for Visual Representation, of the EIA Report.

Study Area

1.2.5 A 16 km study area was selected, being the area within which it is considered that significant effects from turbine lighting could potentially be experienced. This is consistent with the study area for the comparative LVA of the proposed variation.

Viewpoint Selection

1.2.6 The VIA was carried out on site from 13 viewpoints (VPs) selected to be representative of locations where visual receptors may be present during hours of darkness (see Figure 1 and Table 1 below). The VP numbers reflect those used in the comparative LVA for the proposed varied development included in Chapter 4 of the EIA Report.

1.2.7 The assessment is supported by wirelines and photomontages from two VPs: VP2 (Aith Pier); and VP16 (Laxo), included as Figures 2.1 and 2.2 (VP2) and 3.1 and 3.2 (VP16).

1.2.8 Photomontages have been prepared, following the guidelines of paragraphs 174-177 (inclusive) of Visual Representation of Wind Farms Guidance v.2.2 (SNH 2017). The photomontage locations, although relatively close, have been selected as they were felt to represent two different visual scenarios. Baseline photographs, wirelines and daylight photomontages of all VPs are included within the comparative LVA of the proposed variation (Figures 4.7.1 – 4.7.17)

1.3 Methodology

Assessment Guidance

1.3.1 The turbine lighting assessment has been prepared with reference to Guidelines for Landscape and Visual Assessment (Third Edition) (GLVIA3) and broadly in line with emerging guidelines provided by SNH. The assessment comprises a viewpoint based approach as required by the SNH emerging guidelines.

Professional Judgement

1.3.2 GLVIA3 places a strong emphasis on the importance of professional judgement in identifying and defining the significance of landscape and visual effects. As part of this assessment, professional judgement has been used in combination with structured methods and criteria to evaluate value, sensitivity, and magnitude and significance of effect. The assessment has been undertaken and verified by two Chartered Landscape Professionals to provide a robust and consistent approach.

Key Stages of Assessment

1.3.3 Methods promoted by GLVIA3 require an appreciation of the existing environment and the ability of its key components to accept the change proposed. An understanding of the potential effects which could occur and how these could affect the key components and the potential to mitigate adverse effects. There are four key stages to the assessment:

- Establishment of the baseline;
- Appreciation of the proposed varied development;
- Analysis of visual receptors and potential effects; and
- Assessment of effect significance.

Establishing the Baseline

1.3.4 The baseline has been determined through a combination of desk study and site appraisal, taking account of the appearance and intensity of existing visible lights seen from each VP. Desk appraisal has involved review of the ZTV and wirelines. Site survey was undertaken from the thirteen representative VPs at twilight and in the subsequent hours of darkness on 14th to 16th May, 2018 by two Chartered Landscape Architects.

Appreciation of the Proposed Varied Development

1.3.5 An appreciation of the proposals has been developed through building an understanding of the proposed lighting requirements and the surveyors experience of existing wind turbine sites with lights of a similar intensity during the hours of darkness.

Analysis of Visual Receptors and Potential Effects

1.3.6 Preparation of the baseline is followed by the systematic identification of likely effects on the visual receptors. This is a two-fold process, giving consideration to how effects may arise from aspects of

the proposed varied development, and how these changes may be accommodated in the existing baseline view.

1.3.7 All thirteen viewpoints and the surrounding context were visited during both daylight hours and darkness to gain an understanding of the types of individuals which may be present and key information on the nature, composition and characteristics of the existing view experienced recorded. Consideration was given to the likely perceived value of a particular view to the viewer, taking into account the nature of the receptor and the potential activity they may be involved in, and factors such as elevation, extent and key features or attractions which may feature in the view.

Sensitivity to Change

1.3.8 Sensitivity to change considers the nature and viewing expectation of the receptor and takes into account the perceived value of the existing view and the susceptibility of the visual receptor to change. The importance of the aspect of the view which would be changed contributes to the sensitivity evaluation. The sensitivity evaluation considers the value of views during low light conditions when turbine lights may be on, as well as during darkness.

1.3.9 Sensitivity to the change proposed has been evaluated using a three-point scale as follows:

- **High**: Where the appearance of the proposed varied development would affect or alter an important part of a highly valued, impressive or well composed view with no detracting features;
- **Medium**: Where the appearance of the proposed varied development would affect or alter a fairly important part of a valued or pleasing view or a notable part of a less well composed view with some detracting features; and
- **Low**: Where the appearance of the proposed varied development would affect or alter an unimportant part of the overall view or would affect or alter a view which is of limited value or poorly composed, with numerous detracting features.

Magnitude of Change

1.3.10 Magnitude of change concerns the extent to which the existing view would be altered by the proposed varied development. The evaluation of magnitude gives consideration to factors such as the scale or extent of the changes within the view, the extent to which this may alter the composition or focus of the view and the duration and reversibility of these changes.

1.3.11 Magnitude of change has been evaluated using a four-point scale as follows:

- **High**: Where the proposed varied development would result in a very noticeable change in the existing view;
- **Medium**: Where the proposed varied development would result in a noticeable change in the existing view;
- **Low**: Where the proposed varied development would result in a perceptible change in the existing view; and
- **Negligible**: Where the proposed varied development would result in a barely perceptible change in the existing view.

Assessment of Effect Significance

1.3.12 The level of effect identified concerns the importance of changes resulting from the proposed varied development. Evaluation of the visual effect is based on consideration of the magnitude of change in relation to visual sensitivity, taking into account proposed mitigation measures, and is established using professional judgement. The assessment takes into account likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view.

1.3.13 The prominence of turbine lights in the view will vary according to the prevailing weather conditions. The assessment has been carried out, as is best practice, by assuming the 'worst case' scenario. This is assumed to be in clear conditions in full darkness, unless the value of the view or effect would be greater in different lighting conditions (i.e. sunrise or sunset conditions). However, it is recognised that potential effects may be reduced in some conditions. For example, in the case of low cloud or haze or in situations of low light, rather than full darkness.

1.3.14 Effect significance has been evaluated using a four point scale and using the following criteria:

- **Major**: The proposed varied development would become a prominent and very detracting feature and would result in a very noticeable deterioration to an existing highly valued and well composed view;
- **Moderate:** The proposed varied development would introduce some detracting features to an existing highly valued view or would be more prominent within a pleasing or less well composed view, resulting in a noticeable deterioration of the quality of view;
- **Minor:** The proposed varied development would form a perceptible but not detracting feature within a pleasing or valued view or would be a prominent feature within a poorly composed view of lesser value, resulting in a small deterioration to the existing view; and
- **Negligible:** The proposed varied development would form a barely perceptible feature within the existing view and would not result in any discernible deterioration to the view.

1.3.15 The above criteria and levels of significance represent points on a continuum. Where required, interim ratings, such as minor-moderate, have been used to indicate the anticipated significance of effect.

1.3.16 For the purposes of the assessment, effects with a rating of moderate or above are significant in the context of the EIA regulations.

Limitations of the Assessment

1.3.17 The use and limitations of ZTV diagrams is explained in Technical Appendix 4.5: Technical Methodology for Visual Representation, of the EIA Report. The scope of assessment is defined in Section 1.2 where key assumptions for the turbine lighting assessment are set out.

1.3.18 The appearance and brightness of lights has been estimated by the assessors, based on experience of similar intensity turbine lighting visited and observed during the hours of darkness.

1.3.19 It should be noted that site survey and photography was carried out in May, which is sub-optimal for this exercise due to the late hour of sunset at this time of year which is after the hours of greatest human activity. However, this was taken into consideration in the assessment of effects.

1.4 Baseline Situation

1.4.1 Currently, during the hours of darkness within the study area, the Burradale Wind Farm and Extension are lit with red nacelle and ground level aviation lighting at 30 candela intensity. A brighter red aviation light (assumed to be 200 candela) is present on a hill to the east of Tingwall Airport. The presence of these lights is due to their proximity to Tingwall Airport. The lighting associated with Sullom Voe Refinery and the nearby Total Gas plants, and associated periodic flaring, are distantly visible from the northern part of the study area. Elsewhere street lighting is restricted to the larger settlements such as Lerwick, Brae, Vidlin, Aith and Voe and there are also navigation lights associated with the harbours or marinas at these locations. Smaller settlements have no street lighting as such and house lighting and vehicle lights are the only other notable sources of light during the hours of darkness. Apart from these localised light sources, a large proportion of the study area is considered to be free of artificial lighting for assessment purposes.

Viewpoint Selection

1.4.2 Thirteen VPs were selected for the turbine lighting assessment from those used for the comparative LVA of the proposed variation, as detailed in Table 1. These VPs were considered to be representative of the range of views likely to be obtained during low light or dark conditions and are therefore focused around areas visual receptors are most likely to be present at these times of day (i.e. residential areas and public roads).

1.4.3 Detailed descriptions of the baseline lighting situation seen from each viewpoint are included in Annex 2 of this report.

Table 1: Turbine Lighting Assessment Viewpoints

Comparative LVA Viewpoint Number	Location	Grid Reference	Description/ Reasons for Selection
2*	Aith Pier	HU 34648 55937	Settlement
3	Kergord Valley (Weisdale Mill)	HU 39503 53203	Outdoor site/ Tourist destination
5	Knab / Knab Road Lerwick	HU 47807 40770	Settlement
6	North Nesting (Laxfirth)	HU 47353 59712	Settlement
7	Benston, South Nesting	HU 46934 53455	Settlement
9	Near Voe (Car Park at Laxo road junction)	HU 41343 62511	Viewpoint
10	Vidlin (east)	HU 48662 66079	Settlement
11	Whalsay (Clate)	HU 54340 61523	Settlement
12	A970, Kames	HU 41446 59987	Road Route
14	Busta Junction, Brae	HU 34825 67463	Settlement/ Important elevated pausing point on way to popular hotel
15	Mulla, Voe	HU 40340 64148	Settlement with elevated south-facing views
16*	Laxo	HU 44600 63575	Settlement
17	Above Heglibister (A971)	HU 38760 51749	Road Route

Notes:

- Due to night-time visibility of red warning lights decreasing with distance, and a desire to focus on likely significant effects, all the VPs chosen are all within 16km of the nearest turbine and close to the most likely night-time receptors, i.e., in settlements and on roads.
- Worst case scenario is assumed; i.e., a red 2000 ca light on the nacelle of each turbine and 32 ca light on the tower.
- (*) Photomontage provided: Photographs taken at twilight as per current good practice, Visual Representation of Wind Farms Guidance (Version 2.2) (SNH, 2017)
- Turbine lighting assessment viewpoints have been located as close as possible to those for the main comparative LVA. However, some have been slightly relocated for safety reasons.

1.5 Assessment of Effects

Potential Effects

1.5.1 Potential effects relate to the appearance of proposed 2000 candela nacelle lights and 32 candela tower lights on each turbine. The effect of lighting on the viewer may be influenced by both the number and the intensity of the lights potentially visible and the extent to which baseline lighting is present. The following issues have been considered in the assessment of potential effects:

- Aviation lights are typically focussed on a horizontal plane with intensity of light reducing below a certain viewing angle. Therefore a lesser effect may be experienced by a viewer situated at increased angles below the horizontal. However, potential viewing angles differ between lighting manufacturers and therefore this assessment is based on a worst case scenario which assumes that, where turbine hubs are visible, nacelle lights would also be perceived;
- Intensity of lights would diminish with distance. However, in some instances combinations of greater numbers of lights seen from further away may counter this effect to some extent;
- Nacelle lights also lead to illumination of turbine blades and therefore in some situations the viewer would be able to perceive the movement of the turbines during darkness;
- In certain weather conditions such as mist or low cloud, the nacelle lights may also lead to some illumination of the cloud giving a halo effect; and
- In certain wind directions and viewing angles, moving turbine blades in front of the light would cause a flashing effect. Where a number of different turbines were aligned, this effect could be increased to a flickering impression.

Viewpoint Assessment of Turbine Lighting

1.5.2 The VIA was carried out from the thirteen representative VPs at twilight and in the subsequent hours of darkness in May, 2018 by two Chartered Landscape Architects, based upon the methodology described in Section 1.3 and scope described in Section 1.2.

1.5.3 The detailed results of the assessment can be found in Annex 2 and these are summarised below in Table 2.

Table 2: Turbine Lighting VIA Summary Table

VP No. and Location		Sensitivity	Approx. Distance to Closest Turbine	Magnitude	Effect
VP2	**Aith Pier** HU 34648 55937 (See Photomontage and wirelines Figures 2.1 – 2.2)	Medium	2.2 km	High	Moderate/ Major
VP3	**Kergord Valley (Weisdale Mill)** HU 39503 53203	High	3.0 km	High	Major
VP5	**Knab / Knab Road, Lerwick** HU 47807 40770	Low	15.2 km	Low	Minor
VP6	**North Nesting (Laxfirth)** HU 47353 59712	Medium-High	1.8 km	High	Major

VP No. and Location		Sensitivity	Approx. Distance to Closest Turbine	Magnitude	Effect
VP7	**South Nesting** (Near village hall) HU 46934 53455	High	3.7 km	High	Major
VP9	**Near Voe (Car Park at Laxo road junction)** HU 41343 62511	Medium	1.2 km	High	Moderate/ Major
VP10	**Vidlin** HU 48662 66079	Medium (due to existing lights)	6.1 km	Medium	Moderate
VP11	**Whalsay (Clate)** HU 54340 61523	High	8.7 km	High	Major
VP12	**A970, Kames** HU 41446 59987	Medium	0.6 km	High	Major
VP14	**Busta Junction, Brae** HU 34825 67463	Medium	8.9 km	Medium	Moderate
VP15	**Mulla, Voe** HU 40340 64148	Medium	3.1km	High	Major
VP16	**Laxo** HU 44600 63575 (See Photomontage and wirelines Figure 3.1 – 3.2)	High	1.4 km	High	Major
VP17	**Heglibister** HU 38760 51749	High	4.5km km	Medium	Moderate/ Major

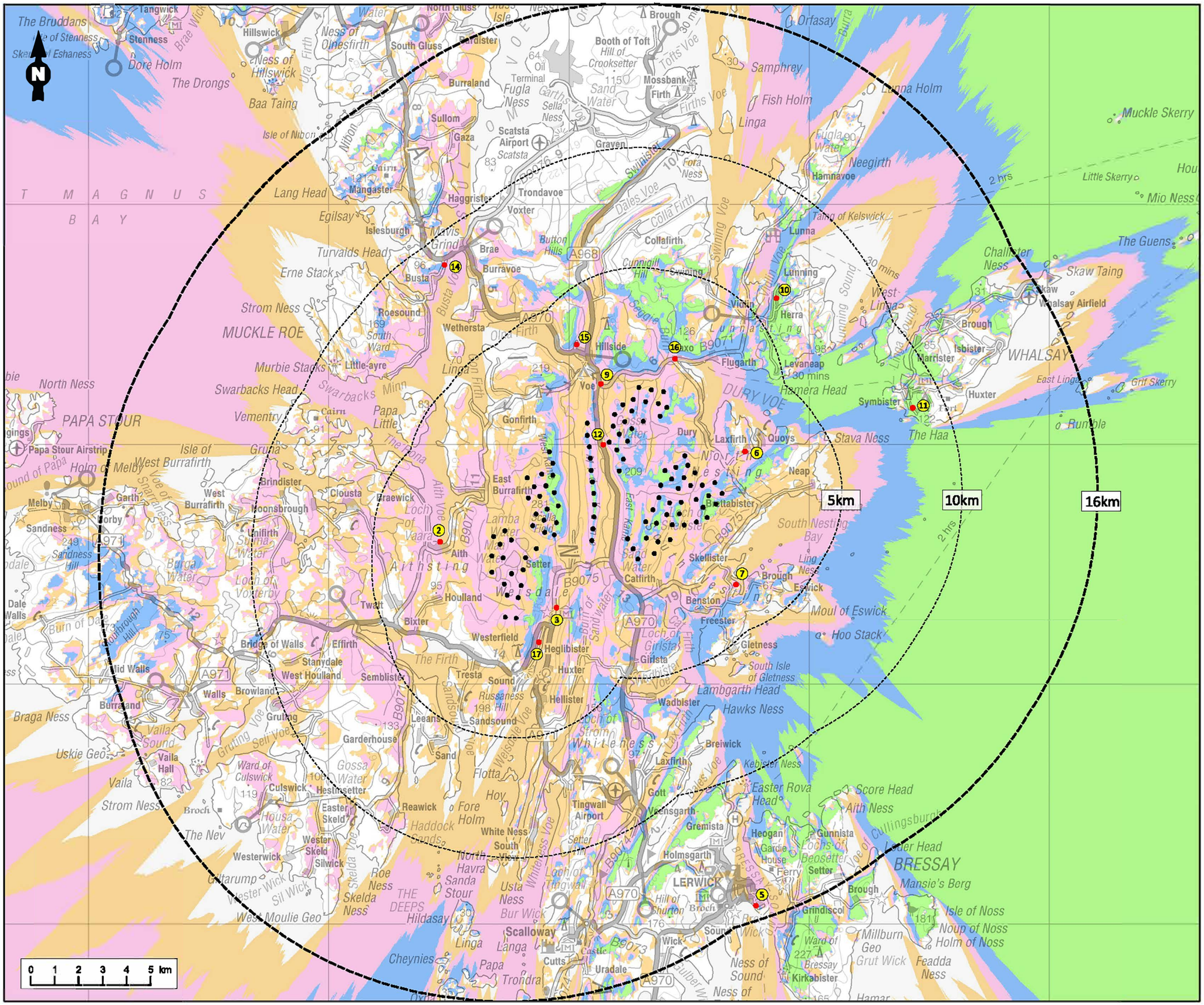
1.6 Conclusions

1.6.1 From Annex 2 and as summarised above in Table 2, it can be seen that with the exception of one VP (VP5 (Knab / Knab Road, Lerwick) from each VP in the hours of darkness, visual effects have been assessed as being significant and adverse, i.e., Moderate or above. This is because, in broad terms, outwith the major settlements, there are few existing artificial lights and receptors would therefore be generally moderately or highly sensitive to any change. The large numbers of bright red aviation lights on the turbines, often viewed at close proximity and broad extent and in many cases appearing to flash or flicker due to either overlapping and/ or intervening blades seen against this baseline, would result in a medium or high degree of change and a resultant range of visual effects from **Moderate Adverse and significant** in the few built-up areas such as Brae and Vidlin to **Major Adverse and significant** in the more rural locations.

1.6.2 Further discussion with aviation stakeholders is therefore proposed, in order to develop a lighting solution which may result in a reduced visual effect. This would include discussion of possible options such as:

- Potential reduction of lighting intensity during good meteorological visibility as allowed within the CAA policy statement;
- Potential use of radar activated lighting, should this be approved for use in the UK; and
- Potential for cardinal or strategic lighting of selected turbines.

List of Figures



Legend

- Location of Consented Viking Wind Farm / Proposed Varied Development Turbine
- 5km and 10km Offsets
- 16km Study Area
- Lighting Assessment Viewpoint Location

Zone of Theoretical Visibility (ZTV)

No. of Theoretically Visible Hub Lights

- 1-25
- 26-50
- 51-75
- 76-103

Figure Title

Figure 1 (TA 4.6): Turbine Lighting ZTV (Hub Height) with Viewpoints

Project Name

Viking Wind Farm

Project Number	Figure No.
1700001846	1
Date	**Prepared By**
05 November 2018	EM
Scale	**Issue**
1:150,000 @ A3	1.0.0

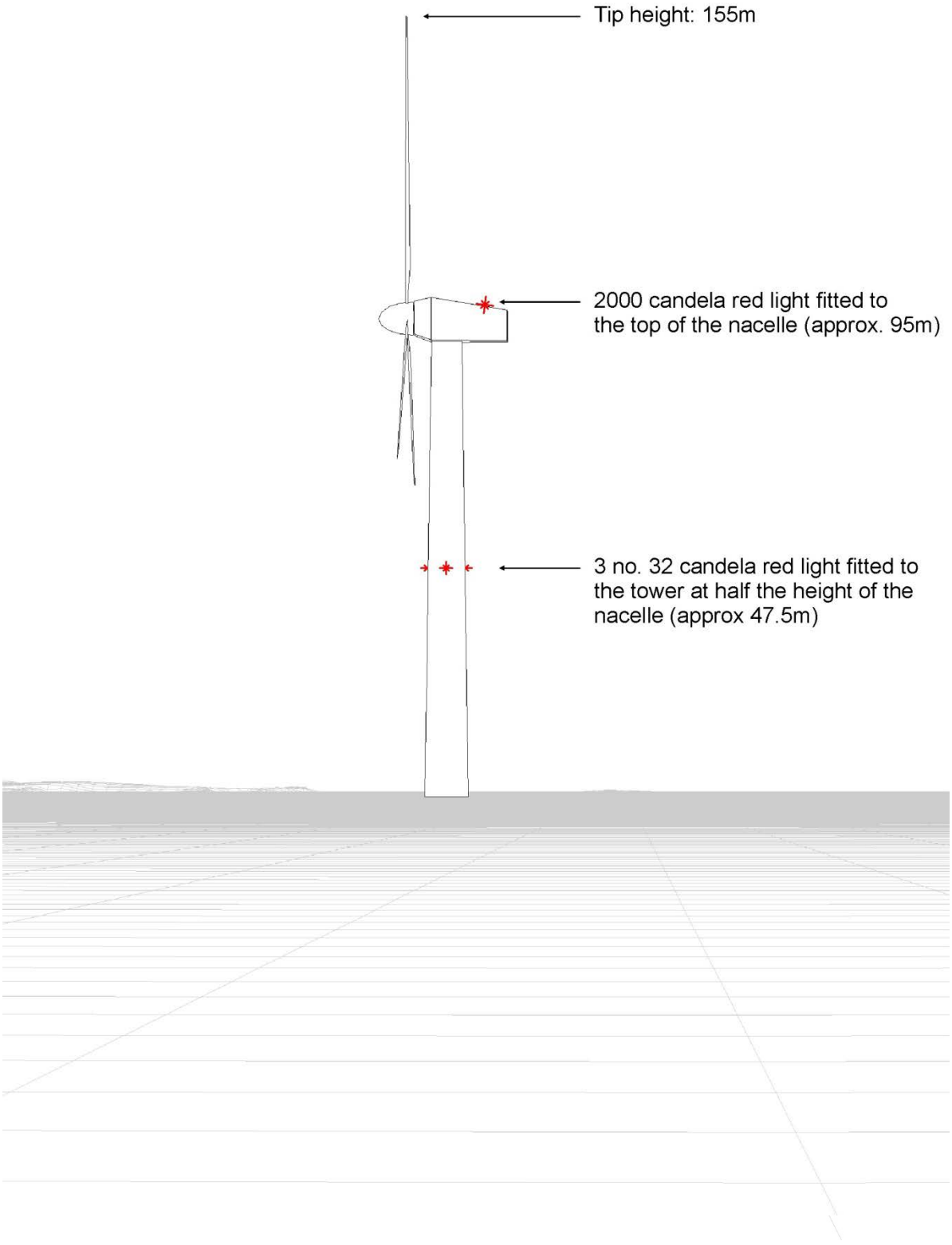
Client

viking energy

RAMBOLL

ash

ANNEX 1 OF TECHNICAL APPENDIX 4.6: INDICATIVE TURBINE LIGHTING LOCATION DIAGRAM



ANNEX 2 OF TECHNICAL APPENDIX 4.6: TURBINE LIGHTING VISUAL EFFECTS TABLES

A turbine lighting assessment for the proposed varied development was undertaken in May 2018 at thirteen selected viewpoints.

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
2 HU 34648 55937	**Aith Pier** (representative of views obtained from properties and exterior areas of settlement) See Figure 2.1 and 2.2.	North east facing views up/ across Aith Voe. Lights on Pier and RNLI station and domestic lights in west facing properties along road plus occasional vehicle lights and occasional low level riding lights of boats. Dark horizon along ridgeline beyond.	Medium	Front on and oblique views partially screened by buildings in the foreground. Large number of nacelle lights visible along ridge against dark sky at relatively close distance. Possible light flash due to intervening turbine blades with prevailing SW winds.	2km	24	High	Moderate/ Major

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
3 HU 39503 53203	**Kergord Valley (Weisdale Mill)** (representative of travellers on local roads and residents within and around scattered residential properties).	North and south facing views up and down the valley. Apart from some lights at Kergord Farm and very occasional car lights on road, dark skyline to north, east and west. Lights in southerly direction at Weisdale Mill and nearby residences do not impinge on this.	High	Front on views towards the proposed varied development. Two groups of nacelle lights to NW and tower lights may also be seen. As some blades are overlapping and also in prevailing SW wind, lights may appear to flicker/ flash. In addition, distinctive line of red lights along Mid-Kame Ridge. These may appear to flash in prevailing south-west wind.	1.5km	21	High	Major
5 HU 47807 40770	**Knab / Knab Road, Lerwick** (representative of residents and individuals and around Lerwick). Highest point of the largest settlement on Shetland: golf course.	Foreground views of the lights of the town of Lerwick with harbour lights and port industrial areas in mid-ground.	Low	Lights of proposed turbines only distantly visible and largely obscured by extensive foreground glare.	15 km	59	Low	Minor

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
6 HU 47353 59712	**North Nesting (Laxfirth)** (representative of scattered residential properties and those travelling around the community and using the village hall). (In front of village hall).	North-east and south-west facing views, up and across the valley. Lights in hall and domestic properties to rear of VP. Otherwise dark to south and west. Very occasional car lights.	Medium-High	Front on in south west facing views. Direct SW views of many close nacelle lights and tower lights, occupying most of view in this direction. Considerable overlap which is likely to result in flickering effect.	2km	30	High	Major
7 HU 46934 53455	**Benston, South Nesting** (representative of scattered residential properties and those travelling around the community and using the village hall and caravan park). N.B., This viewpoint was moved to South Nesting Hall to allow a safe night-time vantage point.	North-west facing low level views. Scattered foreground and mid-ground domestic / farm lights; foreground caravan park bollard lights. Occasional car lights. Dark skyline; generally dark impression.	High	Front on views towards the proposed varied development Many nacelle lights above dark skyline; also possible less bright tower lights. Likely flickering / flashing effects due to extensive overlapping.	2.5km	48	High	Major

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
9 HU 41343 62511	**Near Voe (Car Park at Laxo road junction)** (representative of travellers using the A970 and B9071 and those using car park and bus stops).	360 degree relatively enclosed views of Petta Dale. Dark except for headlights/ tail lights of cars on road. Also headlights reflect on red/ white reflective bollards along roadside at bends.	Medium	Front on views to north, east and south. North facing views partially screened by interim landform. Nacelle lights to east and west; close and high above dark skyline; tower lights also visible due to close proximity. Some light flicker likely due to intervening blade movement.	1.2km	27	High	Moderate/ Major

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
10 HU 48662 66079	**Vidlin (east)** (representative of views from rural residential properties and those travelling around the community).	West and north west elevated views over Vidlin Voe. Harbour lights below in main view are bright including red, orange and white lights. Occasional car lights close to/ around/ beyond harbour. Occasional lights from ferry and other boats using harbour. House lights on adjacent hillside and leading down to harbour. Dark skyline.	Medium (due to existing lights)	Front on and oblique within a wide panorama. Proposed varied development likely to be seen in half of this panorama to south and south-west. Two groups of nacelle lights on the dark skyline in middle distance; one appearing to be above properties on hillside and the other appearing to be above the harbour. Foreground lights mitigate both magnitude and sensitivity to some extent. Extensive overlapping likely to lead to a widespread flickering effect.	6.1km	85	Medium	Moderate

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
11 HU 54340 61523	**Whalsay (Clate)** (representative of views from rural properties and routes on Whalsay) NB: Due to timescale of survey this was not visited at night and thus baseline lights are estimated based on day-time visit.	South west facing elevated panoramic views towards the mainland. Domestic lights and very occasional car lights adjacent to VP but no street lighting. Within panorama few very distant property lights and occasional car headlights at Laxo and Neap. Dark skyline and, as seen across open water, primarily dark within the view setting.	High	Proposed varied development would be visible in large proportion of view. Although distant, many nacelle lights along dark horizon of panorama; considerable blade overlap and hence light flicker likely.	8.7km	85	High	Major
12 HU 41446 59987	**A970, Kames** (representative of views obtained by travellers on the A970).	South facing slightly elevated views down Petta Dale. Dark in all directions except for headlights/ tail lights of cars on road. Also headlights reflect on red/ white reflective bollards along roadside at bends.	Medium	The proposed varied development will dominate views in all directions. Nacelle lights to east and west; close and high above dark skyline; tower lights also visible due to close proximity. Some light flicker likely where blades overlap	0.5km	18	High	Major

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
14 HU 34825 67463	**Busta Junction, Brae** (representative of views from residential properties and routes).	South-east facing elevated views over Busta Voe and Brae. Street lights and house lights around shore. Marina in immediate foreground has flashing red and green navigation lights and boat riding lights. Flashing red lights and orange lights of Sulom Voe just visible over skyline to north. House lights to rear.. Generally brightly lit but dark skyline, especially to south.	Medium	Oblique views towards the proposed varied development. New red nacelle lights along skyline to south east. Overlapping of blades likely to lead to flickering effect. Would appear distant but covering a large section of the skyline within an area of sky currently with few lights.	8.8km	52	Medium	Moderate
15 HU 40340 64148	**Mulla, Voe** (representative of views from settlement).	Elevated south-east facing views across the valley. Foreground of street lights and house lights generally throughout view, harbour lights in mid-ground with green navigation light. Dark skyline.	Medium	Front on and oblique views towards the proposed varied development. Groups of new red nacelle lights and possible dimmer tower lights to right and left of view centre and also a line of lights along the Mid-Kame Ridge. Considerable overlap leading to flickering effect.	3.1km	40	High	Moderate-Major

VP No.	Name /Location / Type/ Context	Nature of Main View	Sensitivity of the receptors at VP Location	Angle and Nature of Change	Approx. Distance to nearest visible nacelle light	Potential no. of nacelle lights visible	Magnitude	Effect
16 HU 44600 63575	**Laxo** (representative views from rural properties and travellers on the B9071) See Figure 3.1 and 3.2.	Very few domestic lights at scattered properties in foreground. Occasional car lights, close to and in mid-ground on A970. Dark skyline towards proposed varied development.	High	Side on and rear views towards the proposed varied development. Many red nacelle lights and possible tower lights perceptible, close to receptors, visible against area of formerly dark sky. Extensive overlapping of blades and hubs, likely to lead to flickering effect.	1.4km	39	High	Major
17 HU 38760 51749	**Above Heglibister (A971)** (representative of views obtained by travellers on A971 and residents of scattered rural properties).	North and south facing elevated views, up Weisdale Valley or down Weisdale Voe. Lights below to east in bottom of valley; though opposite to main direction of view. Main view is north towards Weisdale and Mid-Kame Ridge where apart from one house light and occasional car lights on foreground road and more distant Sandwater road, view is dark.	High	Front on in north facing elevated views up the valley. Row of red nacelle lights along Mid-Kame Ridge to east and another closer group to west above Kergord. Due to overlap of intervening blades, flashing effect is likely in prevailing south-west winds.	1.5km	26	Medium	Moderate/ Major

Technical Appendix 4.7: Relevant LVA Materials from the 2009 ES

The following 2009 ES chapters, figure and technical appendices' excerpts were seen as relevant to support the 2018 EIA, thus have been included:

Appendix 4.7.1: Excerpt from 2009 ES Chapter 8

Appendix 4.7.2: Excerpt from 2009 ES Chapter 9

Appendix 4.7.3: Excerpt from 2009 ES Technical Appendix 9.1

Appendix 4.7.4: 2009 ES Technical Appendix 9.2

Appendix 4.7.5: 2009 ES Figure 9.2.1

APPENDIX 4.7.1: EXCERPT FROM 2009 ES CHAPTER 8

8. LANDSCAPE CHARACTER

8.1 INTRODUCTION

This section assesses the landscape character within 35km from the periphery of the proposed development site and describes the key components, features and characteristics that contribute to the quality and perception of the landscape within this study area. This assessment considers the extent to which loss of features and introduction of the proposed wind farm would influence perception of the landscape character types as a result of the proposed development.

The Landscape Character assessment has been undertaken by ASH design+assessment and provides an evaluation of the implications of the proposed development in terms of:

- Direct impacts on key landscape components and features by construction works and the components of the proposed development;
- the extent to which loss of features and the introduction of the proposed development and associated infrastructure would influence perception of local character within the study area;
- the implications for wider regional landscape character.

The character of the landscape relates to the natural processes and human activities that have worked over long periods to shape the land into its present condition. Landscape character and resources are considered to have an importance in their own right and are valued for their intrinsic qualities. The aim of the assessment is to determine the effect of the proposed development on the landscape character of the area and the elements which contribute to the quality and sensitivity of the landscape.

8.1.1 Related Subjects

Landscape character and visual impact assessment, although closely related to one another, have been considered separately in this document for reasons of clarity and robustness. However, cumulative landscape and visual impacts are assessed together towards the end of the Visual Assessment Chapter in line with current best practice. Other related subjects include recreation and tourism, ecology and cultural heritage. Reference is made to these topics as part of the landscape assessment. However consideration of them is limited to the extent to which they influence the form, quality and value of the landscape of the proposed development site and the wider area. Impacts and their effects that are specific to these topics are addressed in the relevant sections of the Environmental Statement:

- Visual Assessment – Chapter 9
- Ecology – Chapter 10
- Cultural Heritage – Chapter 13
- Recreation and Tourism – Chapter 19

8.1.2 Proposed Development Overview

The proposed development consists of four individual areas which originally comprised the proposed Muckla Moor Wind Farm and the smaller Viking Energy Limited (VEL) Wind Farm. Together these are now to be known as the Viking Wind Farm and for the purposes of this assessment will be referred to as the "proposed development".

At the centre of the proposed development is the settlement of Voe. For reference, the four quadrants will be referred to as follows (see Figure 1.1 in Volume 3):

- Delting quadrant: The north west quadrant – to the west of the A968 and the north of the A970;
- Collafirth quadrant: The north east quadrant – to the east of the A968 and the north of the B9071;
- Nesting quadrant: The south east quadrant – to the east of the A968 and the south of the B9071; and
- Kergord quadrant: The south west quadrant – to the west of the A968 and the south of the B9071.

8.2 SCOPE OF ASSESSMENT

8.2.1 Preliminary scoping

In order to aid understanding of the landscape, to identify potential issues associated with the intended development and to define the nature and extent of assessment, a review of the landscape within the area and a preliminary analysis of potential impacts were undertaken as part of a scoping study for the project.

Originally the scoping study was reported in a report entitled Muckla Moor Wind Farm Environmental Scoping Report (Scottish & Southern Energy, May 2004). However, at that stage the proposed development covered only the Collafirth and Nesting quadrants with the Delting and Kergord quadrants being proposed by another developer. Subsequently, both parties recognised the benefits of a joint project, and therefore agreed to form a partnership (Viking Energy). This has lead to the production of a comprehensive scoping report, entitled Viking Wind Farm Scoping Report (Viking Energy Partnership, January 2008), to cover the entire, combined, site area.

8.2.2 Study Area

The study area for the landscape and visual impact assessment has been taken to be 35km from the development periphery in accordance with current best practice. The development periphery, for the purposes of this assessment, is a line drawn around the outer extent of the area covered by the proposed turbines. Following initial familiarisation a detailed study area of 15km from the development periphery was identified as it was considered that this would be the area within which all potential significant landscape character impacts would occur. However, potential impacts to designated areas have been assessed up to the 35km boundary.

8.2.3 Consultation Responses

The Consultee responses to the Muckla Moor and Viking Wind Farm Scoping Reports of particular relevance to landscape character and visual impact are summarised in Table 8.1.

Table 8.1: Landscape Character and Visual Assessment – Issues raised during scoping

Consultee	Response	Action
Scottish Government	The Scottish Government response summarised many of the comments received from their consultees and other bodies likely to be concerned by the proposed development. The following are the most relevant to the landscape and visual assessment: -Consideration of and reference to various Planning Policies, Guidance and Advice Notes and the Shetland Islands Development Plans is required. -The response also refers to various SNH guidance notes which should be taken into account.	A review of relevant planning policies and guidance is included in section 8.3 and taken into account in EIA methodology (sections 8.4 & 9.4)
Shetland Islands Council (SIC)	-The Council requires all interlinked elements of construction activity to be assessed together. -The impacts of tracks and borrow pits should be taken into account when determining impacts. -The effects of decommissioning should be assessed and restoration proposals should be outlined. -It is important to consider effects of the 4 quadrants at each property.	Taken into account in EIA methodology (sections 8.4 & 9.4)
	-The council states that locations of viewpoints have already been discussed.	Appendix 9.1 outlines the process of viewpoint selection. See Figure 9.2.1 for location of viewpoints and Appendix 9.2 for detailed visual assessment of each.
	-Direct and indirect effects of the proposals on all designated sites should be clearly set out.	Effects on designated sites have been addressed in section 8.5.5 & 8.6.3
	-Cumulative impact assessment to include the interconnector for the sub-sea link	Cumulative effects on all existing and proposed wind farms and the converter station have been addressed in section 9.8
Scottish Natural Heritage (SNH)	-The EIA should consider the impact of grid connection infrastructure directly associated with the proposed development. -The effects of the development on the landscape and visual amenity are a high priority for consideration in the EIA. -Construction impacts should be taken into consideration when assessing impacts.	Taken into account in EIA methodology (sections 8.4 & 9.4)

Consultee	Response	Action
	-There are a number of properties listed in the Inventory of Gardens and Designed Landscape within the study area	Designed Landscapes reviewed in section 8.5.5
Royal Society for the Protection of Birds (RSPB)	-Tracks and borrow pits should be assessed as having likely significant effects on the landscape and crane pads and underground cables as having possible significant effects on the landscape. -Construction should be phased to avoid large scale disturbance across the site	Taken into consideration in the assessment
RFACFS (now Architecture & Design Scotland)	-Design issues are addressed at an early stage and that reference should be made to SPP1: The Planning System; 'Designing Places' – a statement for Scotland used as material consideration in determining planning applications; and 'A Policy on Architecture For Scotland' which recognises the importance and value of good design in the built environment. -The routing of tracks and design of control buildings should also be discussed and, unless the site boundaries are clearly defined by the landscape, the layout may relate to the landscape in a completely arbitrary way. -The wind farm location should be considered and determine whether it is a sensible location in relation to wind, access to the grid and the character of the landscape.	Taken into consideration in the turbine and tracks layout design and in the assessment. See Chapter 4 for details of design development.

8.2.4 Effects to be assessed

Tables 8.2 and 8.3 present the potential effects identified in scoping and form the basis of this assessment.

Table 8.2 Potential Construction Effects – Landscape Character and Visual Impact

Construction Effects	Impact	Potential Effects on Receptors	Specific Receptor Identified in Scoping
Mobile plant operations; Borrow pit operations; Traffic; Cable-Laying; Construction Compounds	Presence of machinery in landscape and views; visible disturbance of vegetation; presence of trenches/ compounds in landscape and views	Temporary effects on landscape character; Temporary effects on visual amenity	None

Table 8.3 Potential Ongoing (Operational) Effects - Landscape Character and Visual Impact

Ongoing Effects	Impact	Potential Effects on Receptors	Specific Receptor Identified in Scoping

Likely Significant Effects	Presence of turbines in landscape and views; Presence of tracks in landscape and views	Effect on landscape character; Effect on visual amenity	None
Possibly Significant Effects	Presence of sub-station/ control building in landscape views; Change of landform and landcover by borrow-pits	Effect on landscape character; Effect on visual amenity	None
Effects of Unknown Significance	Modification to Layout and appearance of public roads	Effect on landscape character; Effect on visual amenity	None

In the light of the scoping and subsequent consultee responses, the following potential issues have been assessed:

- The direct impact of the proposed turbines, associated structures and required access tracks on the current character, quality and value of the landscape character of the proposed site; and
- the implications for the landscape character of the wider area arising from the introduction of potentially visible turbines into the area (indirect impact).

8.2.5 Effects scoped out of assessment

Effects arising from the process of decommissioning are of a similar nature to construction issues, but of a smaller scale and shorter duration. The results of decommissioning (i.e. the removal of the wind farm) are taken into account in assessing ongoing and operational effects where appropriate.

8.4 METHODOLOGY

8.4.1 Overview

The following paragraphs outline the method adopted for the landscape character assessment. The assessment has been prepared with reference to the Guidelines for Landscape and Visual Impact Assessment (GLVIA) published by the Landscape Institute and the Institute of Environmental Assessment in 2002. GLVIA relies on an appreciation of the existing landscape, a thorough understanding of the development proposals, evaluation of the magnitude of change predicted to result from the development, the sensitivity of the existing landscape to change and the potential to mitigate impacts.

Reference has also been made to the following guidelines issued by SNH, the Scottish Government and Shetland Islands Council:

- Guidelines on the Environmental Impacts of Windfarms & Small-Scale Hydroelectric Schemes (SNH February 2001);
- Assessment of Cumulative Landscape & Visual Impacts Arising from Wind Farm Developments (SNH March 2002);
- Guidance on Scoping Issues for EIA, 3rd draft (SNH November 2003);
- Landscape Character Assessment (The Countryside Agency and SNH 2002);
- Scottish Planning Policy 4 (SPP 4) Planning for Minerals (SE 2006);
- Scottish Planning Policy 6 (SPP 6) Renewable Energy Developments (SE 2007);
- National Planning Policy Guideline 14 (NPPG 14) Natural Heritage (SE 1999);
- Scottish Planning Policy 15 (SPP 15): Planning for Rural Development (SE 2005);
- Planning Advice Note 45 (revised 2002): Renewable Energy Technologies (SE 2002);

- Planning for Natural Heritage: Planning Advice Note 60 (SE 2000);
- Strategic Locational Guidance for onshore windfarms in respect of the Natural Heritage (SNH Policy Statement no 02/02, 2005);
- Wildness in the Scottish Countryside (SNH Policy Statement no 02/03, 2003);
- Visual Assessment of Windfarms: Best Practice (prepared by University of Newcastle for SNH, 2002);
- Visual Representation of Windfarms Good Practice Guidance (SNH October 2006); and
- Basic Principles of Landscape and Visual Impact Assessment for Sponsors of Development (Shetland Islands Council, 2006).

The assessment has involved six key stages:

- preliminary assessment and scoping;
- establishment of the baseline conditions relating to landscape character, quality and value and sensitivity to change of the existing landscape;
- evaluation of the potential impacts anticipated to result from the introduction of the development into the baseline context;
- assessment of the effects of the anticipated impacts based on magnitude and sensitivity to change. The assessment takes into account primary mitigation measures related to site selection and site planning; and
- description of the anticipated effects and their significance.

8.4.2 Baseline Assessment

(a) **Desk surveys**

The following specific desk-based tasks have been undertaken:

- A review of the Muckla Moor Wind Farm Environmental Scoping Report, May 2004 and the Viking Wind Farm Scoping Report, January 2008;
- consultation with the following organisations: Shetland Island Council and Scottish Natural Heritage;
- a review of the Shetland Isles Landscape Character Assessment 1998 (SNH Review No 93);
- analysis of existing and proposed land use data and policies from the Shetland Structure Plan 2001-2016;
- analysis of existing and proposed land use data and policies from the Shetland Local Plan;
- analysis of existing and proposed land use data and policies from Delting Community Council Area Statement;
- analysis of existing and proposed land use data and policies from Nesting and Lunnasting Community Council Area Statement;

- analysis of existing and proposed land use data and policies from Sandsting and Aithsting Community Council Area Statement;
- analysis of existing and proposed land use data and policies from Tingwall, Whiteness and Weisdale Community Council Area Statement;
- a review of the landscape designations;
- a review of the Inventory of Gardens and Designed Landscapes; and
- identification and site appraisal of landscape character and its key landscape, ecological and cultural elements. Site recording involved annotation of 1:50,000 Ordnance Survey plans supported by a photographic record of the area.

(b) **Field Survey Techniques**

A site appraisal of landscape character and its key landscape, ecological and cultural elements was carried out in September 2006 by a team of qualified and experienced landscape architects. The results of this survey were updated once the final design had been agreed and a further survey carried out, in August 2008.

8.4.3 Effects Evaluation

(a) **Landscape Character; General**

The aim of the landscape impact assessment is to identify, predict and evaluate potential key effects arising from the proposed development. The assessment of predicted impacts involves:

- An appreciation of the nature, form and features of the proposed development in the context of the baseline landscape character. Landscape character is a composite of physical, biological and cultural elements. Landform, hydrology, vegetation, land use pattern and cultural and historic features and associations combine to create a common 'sense of place' and identity which can be used to categorise the landscape into definable units (character areas). The level of detail and size of unit can be varied to reflect the scale of definition required. It can be applied at national, regional and local levels.
- An evaluation of the sensitivity to change of designated sites and landscape character in relation to changes arising from wind farm development. This is arrived at by a review of landscape value and scenic quality.
- An evaluation of the predicted magnitude of change experienced by designated sites and landscape character, assuming implementation of the proposed development. This is in the form of quantification and description of the direct or indirect impact on specific landscape components that make up the character of the various local landscape areas within the study area. Further, it includes explanation of the predicted change in the composite quality of the various areas related to such direct and indirect impacts, in combination with the compatibility of the proposed forms within, or neighbouring, the various landscape character areas.

- Assessment of the degree and significance of the impact of the proposals on the designated site or landscape character under consideration by relating the magnitude of change to the sensitivity to change.

(b) **Landscape Sensitivity to Change**

The methodology used in this assessment adopts the terminology within current best practice of assessing "Sensitivity to Change" (GLVIA, Landscape Institute and the Institute of Environmental Assessment, 2002). The assessment of the landscape sensitivity to change is specifically related to the type of proposal; in this case turbines, their associated structures, borrow pits and access tracks that make up a wind farm development.

The extent to which the landscape components and landscape areas could accommodate and tolerate change arising from wind farm development both during construction and during operation of the scheme is evaluated by consideration of the following factors:

- the compatibility of wind farm development with landscape components such as landform, landcover, hydrology, settlement and land use;
- the existence or absence of similar development and its prominence where present;
- the scenic quality of the landscape and the key determinants of that quality (see below); and
- the value of the landscape (see below).

The degree of sensitivity of landscapes to change arising from wind farm development will vary in accordance with the importance of the landscape concerned and the contribution it makes (positively or negatively) to the local, regional and national landscape.

To assist in this process, an evaluation of Scenic Quality has been carried out based on a five point scale, as follows:

- **High**: Highest Scenic Quality, with pleasing patterns, combinations of landscape features and important aesthetic or intangible factors, tranquil and unspoilt by intrusive / inharmonious development;
- **Medium-High**: Pleasing pattern or combinations of landscape features but slightly less tranquil / enclosed and some awareness of nearby development;
- **Medium**: May or may not be developed, harmonious and pleasing to the eye, with no discordant elements present;
- **Low-Medium**: Of neutral quality, neither pleasing nor discordant, but with some intrusive or disharmonious development;
- **Low**: Poor quality landscape with intrusive / inharmonious development predominating.

This has been mapped in Figure 8.1

It should be noted that areas of different landscape scenic quality do not necessarily correlate with landscape character areas.

Landscape value is frequently addressed by reference to international, national, regional and local designations, determined by statutory and planning agencies. Absence of such a

designation, however, does not necessarily infer a lack of quality or value. Factors such as accessibility and local scarcity can render areas of nationally unremarkable quality, highly valuable as a local resource.

Sensitivity to change arising from wind farm development and its impact on landscape character has been evaluated with reference to scenic quality and value and has been rated as being high, medium or low. This three-point scale uses the following criteria:

- **High Sensitivity**: a highly valued landscape of high, medium-high or medium scenic quality susceptible to change arising from wind farm development; for example, small scale, complex landforms and land cover characteristics with distinctive landscape features;
- **Medium Sensitivity**: a medium - valued landscape of medium-high, medium, or low-medium scenic quality, reasonably tolerant of change arising from wind farm development; medium, or large and small scale landforms and landcover in combination; occasional distinctive landscape features;
- **Low Sensitivity**: a low - valued landscape of medium, low-medium or low scenic quality, which is tolerant of change arising from wind farm development; for example, large scale, simple landforms and landcover characteristics with no distinctive landscape features.

(c) **Magnitude of Proposed Change**

Magnitude of change has been assessed as being high, medium or low. A fourth rating of negligible has been attributed to character areas where the change would be barely discernible. These criteria are described as follows:

- **High**: Very noticeable indirect change in landscape characteristics over an extensive area or direct change to landscape components/ character over a less extensive area;
- **Medium**: Noticeable indirect change in landscape characteristics over less extensive area or direct change to landscape components/ character over a localised area;
- **Low**: Perceptible indirect change in landscape characteristics over a localised area or direct change to landscape components/ character over a very localised area;
- **Negligible**: virtually imperceptible or no indirect change in landscape characteristics over a very localised area, or barely noticeable, or no, direct change to landscape components/ character.

Intervisibility has been considered in determining the magnitude of change. The degree to which the proposed development contributes, directly or indirectly, positively or negatively, to the landscape depends upon the extent to which it can be experienced, in whole or in part,. The potential extent of intervisibility is evaluated using the Zone of Theoretical Visibility ("ZTV") or visual envelope. Figure 9.1 shows the ZTV for the proposal. The data set used in the generation of the ZTV is described in Chapter 9, Section 9.4.3(a). Wireframe diagrams and photomontages from viewpoint receptors have also been used as a tool to aid assessment (see Figures 9.3.1 – 9.3.43 inclusive).

(d) **Impact significance**

Using professional judgement and assisted by tools such as ZTVs, photomontages and wireframe diagrams, the assessment of impacts compares the magnitude of change experienced by a designated site or landscape character area to its sensitivity to change of the type proposed. It also takes into account direct impacts upon existing landscape elements, features and key characteristics and assesses whether these would be lost or their relationships modified, in the context of their importance in determining the existing sensitivity of the character area in question.

Anticipated impacts are reported in terms of a descriptive scale ranging from substantial - moderate - slight adverse through negligible to an ascending scale of slight - moderate - substantial beneficial.

The criteria adopted for the assessment of landscape effects are as follows:

- **Substantial Adverse (or Beneficial) Impact** : significant deterioration / improvement in the existing landscape;
- **Moderate Adverse (or Beneficial) Impact** : noticeable deterioration / improvement in the existing landscape;
- **Slight Adverse (or Beneficial) Impact**: barely noticeable deterioration / improvement in the existing landscape;
- **Negligible Impact**: no discernable deterioration / improvement in the existing landscape.

Impacts of moderate and above are considered in this assessment to be significant. Impacts of Slight to Moderate and below are considered not to be significant.

The predicted impacts have been considered in light of primary mitigation measures associated with site selection and site planning, culminating in a statement of the predicted effects and their overall significance to the landscape resource of the study area.

8.4.4 Limitations of Assessment and Assumptions

Although the total study area has been taken to be 35 km from the periphery of the proposed development in order to consider all likely landscape and visual impacts, after initial field reconnaissance, the detailed assessment of landscape character was limited to the inner 15km radius, as detailed above in paragraph 8.2.2, as it was considered that this area would encompass all likely significant landscape character impacts. Notwithstanding this, potential impacts to designated landscapes have, however, been assessed within the full 35km study area.

8.5 LANDSCAPE CHARACTER BASELINE CONDITIONS

8.5.1 Regional Context

The Shetland archipelago comprises over one hundred islands and is located approximately 150km northeast of the Scottish mainland. The character of the landscape is heavily influenced by its exposed, northern, maritime location and the resultant constantly changing weather conditions and light. The sea has a primary influence on the landscape character of Shetland as virtually no point on land is more than 5km away from it. This

results in a mosaic of land and water and a long, intricate coastline. The landscape typically consists of long, complex sea inlets or "voes" leading into the island interior of rolling hills with expansive tracts of heather moorland or rough grassland and a relative absence of man-made features. The coastline is dotted with numerous islands ranging in size from large inhabited islands to rocky skerrays. The landscape is virtually treeless and often portrays an isolated, windswept feel. The few trees that exist are usually located within gardens. Although fairly uniform across the islands as a whole, character varies locally, for example the western Atlantic coastline exhibits more rugged characteristics.

Settlement is generally limited to the coastal fringes with the highest concentration in the main town of Lerwick. Other communities are small and scattered in character with their centres usually concentrated on small harbours and often dominated by larger, modern public buildings. Around the coastline, strings of houses and crofts are common, creating a managed landscape that is distinct from the moorland that dominates the interior. Often these houses are modern and ruined stone cottages are a common sight. The oil industry has resulted in much new development over recent years.

8.5.2 Site Description

The proposed development is located in the centre of the Mainland of Shetland in four distinct areas, referred to within this ES as 'quadrants'. The two larger, southern quadrants are located on either side of the A970 road, in an area characterised by a distinct system of north-south ridges, typically between 100 and 200 metres in height, known as the Kames. The area is dissected by numerous burns, water bodies and lochs. The Moorland drops away to meet the irregular and varied coastline, with various voes and sounds penetrating into the development periphery. The area is exposed in nature and barren in appearance, with panoramic views across Shetland, in clear weather. Heather moorland and peat dominate the ground cover with man-made influences limited to peat cutting, sheep grazing and occasional masts and aerials. The northern quadrants of the proposed development are located in an area of similar elevated moorland character but without the distinct ridged landform. The village of Voe lies more or less in the centre of the proposed site whilst around the coast, within 3 to 4km of the development boundary, are the communities of Vidlin, Brae, Aith and Mossbank as well as other scattered houses and small communities. The Sullom Voe oil terminal lies approximately 3km to the north.

8.5.3 Landscape Scenic Quality

Scenic quality has been determined using the methodology detailed in Section 8.4.3. Landscape scenic quality is related to the contribution the landscape makes to the local landscape in terms of appeal and aesthetic factors. Scenic quality for the study area is shown in Figure 8.1.

In general the landscape of Shetland ranges from medium to high scenic quality as a result of the harmonious combinations of land, sea and sky and lack of incongruous features. Areas of highest scenic quality are generally coastal, where deep voes and inlets and numerous islands form a pleasing composition of contrasting land, sea and sky. Many of these areas have been designated as National Scenic Areas. Human development in these cases is often at a scale and form in harmony with the natural landscape. Inland areas are generally of medium quality as they tend to consist of uniform moorland with a more subtle mosaic of colour and texture which is less diverse than the coastal areas, with fewer features to draw the eye. Areas of lower scenic quality are related to obtrusive man made

developments which dominate the natural landscape such as the Sullom Voe oil terminal or the industrial areas of Lerwick.

8.5.4 Landscape Value

Landscape value has been determined using the methodology detailed in Section 8.4.3. Landscape value is related to the national, regional and local importance of the landscape and is discussed with relation to landscape designations in Section 8.5.5 and with relation to landscape character areas in Section 8.5.7.

8.5.5 Landscape Designations

Landscapes can be ascribed international, national, regional or local designations that recognise the significance of the landscape for its outstanding scenic interest or attractiveness. These statutory and non-statutory designations include National Scenic Areas, Areas of Great Landscape Value, Local Protection Areas and Gardens and Designed Landscapes. All areas within the study area so designated are shown on Figures 8.2.1 and 8.2.2.

(a) National Scenic Areas

National Scenic Areas (NSAs) are a national level designation and are applied to areas of land considered of nationally exceptional scenic value - the finest landscapes in Britain - on the basis of their outstanding scenic interest or unsurpassed attractiveness, which must be conserved as part of the country's natural heritage.

Shetland has one NSA which covers seven sections of the islands' coastline. Three of these seven sections are on the outer periphery of the archipelago and outwith the 35km study area. The four remaining sections within the study area are:

- The western flank of Dunrossness and the Deeps;
- Part of Muckle Roe;
- Esha Ness; and
- Uyea Isle and Fethaland.

These areas contribute a variety of contrasting landscapes to the NSA ranging from the sea cliffs, headlands, skerrays and stacks at Muckle Roe and Esha Ness to the fjord-like voes of Weisdale and Whiteness. The result is a seascape of strong character in which the constantly changing skies play an important part.

In view of its designated status and national importance the Shetland National Scenic Area is considered to be of **High** scenic quality and **High** landscape value.

(b) Environmentally Sensitive Area

Environmentally Sensitive Areas (ESAs) were designated by the Secretary of State following the Agriculture Act 1986. These are areas where landscape, wildlife or historic interest is considered of particular importance and where farmers and land users are given assistance in return for using methods which help to protect and maintain the landscape. The whole of the Shetland archipelago was designated an ESA in 1993 by The

Environmentally Sensitive Areas (Shetland Islands) Designation Order 1993 (as subsequently amended).

As the ESA is a designation covering the whole of the Shetland Archipelago and since its main concern is land use it has not been individually assessed for landscape impacts *per se*. However, the designation has been taken into account when forming decisions relating to landscape sensitivity and value.

(c) **Local Protection Areas**

Local Protection Areas (LPAs) are not generally protected by any statutory designation, but they are areas regarded by the local community as being worthy of protection for a variety of reasons e.g. a viewpoint, wildlife, wild flowers, local historic interest, open space. The aim is to maintain these areas free from development, except that which is for the benefit of the community as a whole. Although there are no LPAs within the boundary areas proposed for the wind farms, the following are within 3km of the proposed development areas:

- Brae north-west foreshore and Lower Voe (Delting Community Area)
- Lunna House and the Bod (Nesting and Lunnasting Community Area)
- Ling Ness and Loch of Linga (Nesting and Lunnasting Community Area)
- Broch on the Holm in the Loch of Benston (Nesting and Lunnasting Community Area)

These areas are very small in size and have therefore not been assessed for landscape impacts individually. However, their local importance and resultant high landscape value has been considered as a contributory factor when evaluating landscape value as a contributor to sensitivity during the assessment process.

(d) **Inventory of Gardens and Designed Landscapes**

The Inventory of Gardens and Designed Landscapes lists those gardens or designed landscapes which are considered by a panel of experts to be of national importance. Although inclusion in the Inventory does not constitute a statutory designation it represents a material consideration in the planning process.

Within the study area and within the Shetland Isles, as a whole, there are four entries:

- Belmont House;
- Brough Lodge;
- Gardie House; and
- Lunna House.

The Council is also proposing to investigate the possibility of the formal designation of an area of land around Lunna House as a Conservation Area.

Belmont House

Belmont House is located on the south west coast of Yell, some 32.5km north east of the proposed development. It is an 18th century formal landscape in the neo-classical style, but specifically adapted to suit the unique Shetland situation. It is based on a strong north-

south axis which runs through garden, house and outbuildings with a strong symmetrical layout of rectilinear gardens and parkland, bisected by paths.

The key landscape views follow the axis south from the elevated house, across the Wick of Belmont and beyond to Yell and other uninhabited islands. There are also important views westwards, across the Loch of Belmont. The house itself when viewed from the sea, in combination with its symmetrical layout of garden and parkland, is also an important feature of the Unst landscape, and is especially imposing when seen silhouetted against the sky.

The strong symmetrical composition of the garden in association with its axes and views gives the Belmont House Designed Landscape a **High** scenic quality. Its historical and archaeological importance and designated status also give it a **High** landscape value.

Brough Lodge

Brough Lodge Designed Landscape is located on the west coast of Fetlar, 26km north east of the proposed development. It is an early to mid 19th century design in the picturesque style, and is particularly unusual in the Shetland setting. It consists of a parkland setting, centred around a large and imposing gothic styled house with castellated detailing screen walls and outbuildings. East of the house is a series of walled gardens and beyond them, located on a small knoll on the site of an old Broch is a gothic styled tower, intended as an eye catcher. To the west of the house are the remains of a paved terrace and steps leading down to formal gardens.

The gothic tower and house are important features of views both from within the Designed Landscape and beyond its boundaries. The situation of the landscape also results in important views westwards, across the Colgrave Sound and to Hascosay and Yell.

The importance of the views within the landscape and the architectural features gives the Brough Lodge Designed Landscape a **High** scenic quality. Its historical significance, scenic quality and designated status also give it a **High** landscape value.

Gardie House

The Gardie House Designed Landscape is located on the west coast of Bressay, 14km south east of the proposed development. It consists of formal 18th century garden of walled enclosures and terraces, surrounding a small country house. This is set within a larger area of square enclosed parks with an accompanying 'model' miniature farm steading dating from the early 19th century. Both the parkland and garden are set on strong parallel axes running northeast to southwest and follow a very formal symmetrical pattern.

The Gardie House and gardens and the formal layout of the parkland are a prominent feature of views towards the island – particularly for those arriving on the Bressay Ferry. Views from the designed landscape and house follow the line of the axes in a south-easterly direction towards Lerwick and the hills beyond.

Scenic quality for the Gardie House Designed Landscape is reduced to some extent by the presence of the urban and industrial parts of Lerwick as the focus of the main views. Nevertheless the importance of the views within the landscape setting, and the designed landscape and house within views towards the island gives the designed landscape a **Medium to High** scenic quality. Given the landscape's designated status and its historical importance the landscape value is **High**.

Lunna House

Lunna House is located in the north east of mainland Shetland, 6km north and east of the proposed development. The associated Designed Landscape is described in the Inventory as, 'Probably the best surviving example of a formal designed landscape... in characteristic Shetland style...' It consists of a collection of walled enclosures, eye catchers and buildings which together form an attractive composition of framed views.

The main view follows an axis southwest from the house, through the 'Gothic Cottage,' a 19th century built ruined cottage with a gothic styled west end wall, towards 'Hunter's Monument,' a square tower with battlemented flanking walls sited on a hill opposite the house. Further views are obtained from the house looking west and south across West Lunna Voe and East Lunna Voe.

The set out views and composition of the landscape give the Lunna House Designed Landscape a **High** scenic quality. The landscape value is also **High** because of the historical significance of the landscape and the views.

In acknowledgement of its importance, turbines which would have impinged on the main axial views have been removed as part of the layout design exercise.

8.5.6 Landscape Character

SNH, in conjunction with partner Councils, has undertaken a detailed review and classification of various landscape areas and types of Scotland. The landscape of the study area is covered by the Landscape Assessment of the Shetland Isles (Scottish Natural Heritage Review No 93 – Gillespies 1998). This report provides a detailed assessment of the landscape character of Shetland. The Landscape Assessment divides the Shetland landscape into seven distinct Landscape Character Types (LCTs). The distribution of these LCTs within the study area is shown on Figures 8.3.1 and 8.3.2. Within the 15km detailed study area all seven of the landscape character types are represented:

- A - Major Uplands
- B - Peatland and Moorland
- C - Undulating Moorland with Lochs
- D - Inland Valleys
- E - Farmed and Settled Lowlands and Coast
- F - Farmed and Settled Voes and Sounds
- G - Coastal Edge

(a) A - Major Uplands

The Major Uplands are distinct from other parts of Shetland which are generally low-lying. They have a large scale, undeveloped quality and form an important backdrop to the lower peatlands, the settled coast and the voes and valleys. Groundcover is dominated by heather moorland and peaty mires. There is no tradition of settlement in these areas and human intervention is limited to access roads, peat cutting, sheep grazing and some mast/aerials. This character area is typically exposed in nature and provides panoramic views in clear weather.

Four distinct local character areas (LCAs) of this type are found within the study area:

- A1 - South Mainland Spine
- A2 - East and West Kames
- A3 - Ronas Hill
- A5 - Sandness Hill.

All LCAs are illustrated on Figure 8.4.

The key characteristics that occur within these LCAs are set out below:

A1 - South Mainland Spine

This area forms the backbone of the south mainland and consists of a series of exposed, gently rounded hills composed of peatland and heather moorland. This is a large scale, exposed, natural landscape, affected by the siting of various MOD and telecommunications structures and an existing wind farm. The subtle colour and elevated landscape forms a contrast to the more rich and varied colours of the surrounding landscapes.

Principal Positive Components:

- Large-scale, exposed, natural landscape with striking elevated views of surrounding lowlands and coast; and
- Natural and uninhabited character with subtle interplay of colours and textures provided by the exposed peat areas, rock, peaty mires, standing water and heather moorland.

Principal Negative Components:

- Natural and uninhabited character often marred by the MoD and telecommunications structures and existing wind turbines.

Landscape Scenic Quality – Generally **Medium**

Landscape Value – Although not within any designated area the spine forms an important back drop to other lower areas including the part of the NSA described as Dunrossness and the Deeps. However, this landscape type is not uncommon on Shetland and is already visually affected by masts, turbines etc, therefore the landscape value is assessed to be **Low to Medium**.

A2 – East and West Kame

This LCA takes the form of a distinct series of rounded north-south ridges located in the central part of the mainland. It is an uninhabited, large scale and inaccessible landscape, barren in nature, of peaty mires, standing water and heather moorland. There is a uniformity of colour and texture through the landscape which can lead to monotony. The open and exposed landscape character is affected by the siting of various MOD and telecommunications structures and the main north-south road, which is routed through the linear valleys defined by the ridges.

Principal Positive Components:

- Distinctive rounded north-south ridged landform; and
- Open, large scale character with expansive views over the ridges.

Principal Negative Components:

- Uniformity of colour and texture can lead to monotony;
- transport routes through valleys; and
- a number of telecommunication masts on prominent hills present man-made features in an otherwise uninhabited landscape.

Landscape Scenic Quality – Predominantly **Medium** with very localised and marginal areas of **Medium to High** and **Medium to Low**.

Landscape Value – This landscape is not covered by any designations and of a fairly common and unexceptional type within Shetland as a whole, although it does provide a backdrop for other more highly valued landscape types and therefore the landscape value is **Low.**

A3 – Ronas Hill

This is a large dome-shaped red granite hill located in the north east mainland, the top of which marks the highest point in Shetland. The lower slopes are vegetated with heather and rough grassland but the upper slopes are exposed and rock strewn with little vegetation. The hill has a rough texture with frost-shattered rocky outcrops and boulder fields. The red granite provides an interesting contrast with the more uniform muted colours of the heather and peatland.

Principal Positive Components:

- Smooth, domed red granite mass – highest point in Shetland representing an imposing landscape feature and landmark;
- muted colours of peat vegetation and rough grassland contrasts interestingly with the colour of the red granite;
- lower slopes descend to form a dramatic coastline to the west and steep angular north side to Ronas Voe; and
- expansive views of Shetland in clear weather.

Principal Negative Components:

- Derelict communications structures mar the otherwise uninhabited character.

Landscape Scenic Quality – Predominantly **Medium** with coastal areas **Medium to High**.

Landscape Value – Landscape value is **Medium to High** as although the area is not covered by any designations the hill has local importance as the highest point in Shetland.

A5 – Sandness Hill

This LCA lies only partly within the 15km detailed study area. It consists of a separate hill mass which forms an important landmark and is bordered by a dramatic coastline of sand stone cliffs supporting large colonies of birds. The coastline however is outwith the study area.

Principal Positive Components:

- Open, natural landscapes; and
- natural vegetation and dramatic coastal cliffs supporting large colonies of birds.

Principal Negative Components:

- Derelict and redundant structures mar the uninhabited character.

Landscape Scenic Quality – **Medium** with areas of **Medium to High**.

Landscape Value – Landscape value is **Medium** for the section within the study area as it is unexceptional within the wider Shetland landscape.

Landscape Guidelines

Relevant landscape guidelines for the Major Uplands LCT are as follows:

- *The landscape qualities of skyline, elevated landform, geology and landcover should be safeguarded. The generally uninterrupted outline of upland areas should be safeguarded;*
- *Measures should be prepared to monitor, control and reverse the erosion of natural vegetation;*
- *Important bird nesting and breeding habitats should be safeguarded;*
- *In some instances former infrastructure sites may be suitable for restoration and development as viewpoints for residents and visitors; and*
- *Any further MOD, telecommunication or general infrastructure requiring a skyline location should be the subject of a visual impact assessment.*

(b) **B - Peatland and Moorland**

This LCA is a subtle natural landscape with a small scale diversity in texture provided by a mixture of standing water and exposed peat and rock. The landscape is barren in appearance with an isolated, exposed character and muted colours and can present monotonous qualities with little to draw the eye. This is a traditionally unsettled landscape and the only human intervention is in the form of roads, electricity transmission lines, peat cutting and rough grazing.

Three LCAs, of this type are identified within the 15km detailed study area:

- B1 – Yell Peatland
- B2 – Rounded Moorland Hills
- B4 – South Mainland Coastal Moorland

B1 – Yell Peatland

This is an extensive, barren and open landscape located on the island of Yell, of gently rounded and undulating peatland and heather moorland. The muted colours and uniform texture form a distinct contrast to the richer colours and varying texture of the settled coast. The landscape is generally uninhabited and unenclosed and man-made features are limited to electricity transmission lines and peat cutting and those associated with the main road and the resultant modifications in vegetative cover associated with verges, cuttings etc. The rolling landform allows extensive views across the island.

Principal Positive Components:

- Uninhabited landscape with extensive views; and

- contrast between muted colours and textures and those of the settled coasts.

Principal Negative Components:

- Intrusive nature of road corridor with modified vegetative cover contrasting with the natural peatland and moorland vegetation; and
- electricity transmission lines and areas of peat cutting.

Landscape Scenic Quality – Predominantly **Medium** with areas of **Medium to High** on the east coast.

Landscape Value –This landscape type is fairly common in Shetland so landscape value is **Low to Medium**.

B2 – Rounded Moorland Hills

This consists of a number of areas of peatland and moorland, evenly dispersed across the north and east mainland, with a smooth hummocky landform of rounded hills. They are of even texture and muted colour and often form the backdrop to the cultivated enclosed lowlands. This is a barren and uninhabited landscape but the areas are of smaller extent than the Yell peatlands and their character is therefore more sensitive to development.

Principal Positive Components:

- Rounded hills/smooth hummocky landform covered by peatland or moorland vegetation;
- even texture and muted colours forming a backdrop to cultivated enclosed lowlands; and
- open and inaccessible landscape.

Principal Negative Components:

- Small areas, sensitive to development of any sort.

Landscape Scenic Quality – Generally **Medium** with localised areas of **Medium to High**.

Landscape Value – Landscape value for these areas is **Medium - High** because they are of a small extent and vulnerable to development and they form an important backdrop to other key landscapes.

B4 – South Mainland Coastal Moorland

These are small areas of moorland located on the eastern coastal strip of the south mainland. These areas form interruptions in the surrounding enclosed grazing land and scattered settlement and are in contrast to the generally densely settled coast. The only man made features are roads and electricity transmission lines. The muted colours and texture of the moorland contrast with the settled surroundings and create a link with the open and exposed areas of upland and the settled coastline.

Principal Positive Components:

- Muted colours and textures of peatland and heather moorland in contrast to surrounding settlement.

Principal Negative Components:

- Man-made elements such as roads and electricity transmission lines; and
- the small size and isolated nature makes areas sensitive to encroachment of development.

Landscape Scenic Quality – **Medium**

Landscape Value – Landscape Value is **Medium** as these areas are not covered by any landscape designation but form an important contrast with adjacent settled areas and a link to other areas of upland and moorland.

Landscape Guidelines

Landscape guidelines for the Peatland and Moorland LCT are as follows:

- *Peatlands and heather moorlands are sensitive to change. The open character of the landscape should be safeguarded;*
- *Peat cutting should be maintained at appropriate levels;*
- *A programme for monitoring change in the natural vegetation should be established; and*
- *Measures should be introduced for the regeneration, restoration and subsequent retention of the natural vegetation.*

(c) **C - Undulating Moorland with Lochs**

This LCA consists of a fine grain undulating, low lying landscape predominantly composed of heather moorland, rough grassland, rocky outcrops and numerous lochs and water bodies. The landscape is of a large scale with extensive views. Colours are muted but the varying textures of vegetation, rocky outcrops and water creates an interesting and attractive landscape mosaic. The main man-made elements are access roads and electricity transmission lines. All three of the LCAs of this type occur within the study area:

- C1 – West Mainland and Northmavine: Muckle Roe and Mangaster/Nibon Area;
- C2 – Uyea, Braewick, Tingon and North Roe; and
- C3 – Lunna Ness and Dragon Ness.

C1 – West Mainland and Northmavine: Muckle Roe and Mangaster/Nibon Area

This is an extensive area of heather moorland overlaying a landform of broad rounded hummocks, rocky outcrops and lochs of various sizes. The topography is irregular and undulating and offers expansive views from some parts while other lower areas are of an intimate character. Human influence consists of few roads and electricity lines and occasional croft house and areas of agricultural improvement. Overall the landscape has the character of a balanced and open, landscape.

Principal Positive Components:

- Varying experiences with intimate lower areas and extensive views from higher areas;

- complex interplay of heather moorland, rocky outcrops and numerous lochs and water bodies of various sizes; and
- attractive and balanced landscape.

Principal Negative Components:

- Roads and electricity transmission lines intrude into the landscape.

Landscape Scenic Quality – Predominantly **Medium to High** with localised areas of **Medium** and **High**.

Landscape Value – This is a fairly unexceptional landscape but forms a backdrop to other areas of greater value and therefore the landscape value is **Medium**.

C2 – Uyea, Braewick, Tingon and North Roe

This is an extensive exposed landscape of peatland and rocky outcrops with numerous lochs located on the extreme northwest mainland. It has a more upland quality than other areas of 'Undulating Moorland with Lochs' with extensive views to the surrounding dramatic coastal scenery.

Principal Positive Components:

- Varying upland landscape of moorland, peatland and lochs; and
- attractive open landscape with expansive views afforded to the surrounding dramatic coastal scenery.

Principal Negative Components:

- Exposed, lonely and barren character.

Landscape Scenic Quality – **Medium to High** with some areas of **High** and **Medium**.

Landscape Value – **Medium to High** because it provides a backdrop to the NSA and the attractive coastline.

C3 – Lunna Ness and Dragon Ness

These are several small areas located on the east mainland characterised by a rounded landform with rocky outcrops and colonised by heather moorland and rough grassland. These areas are located within a context of farmed and settled land and have a greater human influence consisting of roads and electricity lines, croft houses and small areas of agricultural improvement. It is a balanced and accessible landscape and on lower ground has an enclosed and intimate character.

Principal Positive Components:

- Less isolated and exposed character than similar moorland areas with an intimate sense of enclosure on lower ground.

Principal Negative Components:

- Areas of agricultural improvement contrasting sharply with the natural moorland colours; and
- Roads and electricity transmission lines.

Landscape Scenic Quality – Generally **Medium to High**.

Landscape Value – These areas are not covered by any landscape designation. Landscape value is **Medium**.

Landscape Guidelines

Landscape guidelines for the Undulating Moorland with Lochs LCT are as follows:

- *The landscape qualities of tranquil open moorland with standing water and dramatic coastal views should be safeguarded against physical disturbance and visual impact;*
- *Measures should be promoted to conserve, enhance or regenerate:-*
  - *moorland, wetland and water margins*
  - *unimproved grassland and coastal grassland; and*
- *Agricultural improvement of heather moorland for grazing should be discouraged.*

(d) **D - Inland Valleys**

This LCT consists of sheltered, enclosed inland valleys. They are unusual in the Shetland Isles as they have virtually no views to the sea as the landform restricts visibility. Of the four LCAs defined within this landscape type all are represented within the study area:

- D1 – Farmed and Settled Inland Valleys: Tingwall and Weisdale;
- D2 – Crofting and Grazing Inland Valleys: Cuckron;
- D3 – Crofting and Grazing Isolated Valleys: Wester Quarff and Dale; and
- D4 – Peatland and Moorland Inland Valleys.

D1 – Farmed and Settled Inland Valleys: Tingwall and Weisdale

These are attractive long, linear valleys, characterised by their exploitation by man over centuries. Valleys are used for crofting and farming in their more sheltered parts resulting in great diversity of colour through the contrast in areas of improved land, water and rare areas of woodland, with rough grassland and heather on higher ground. Views are contained to east and west by the ridges of high ground but are extensive to north and south.

Principal Positive Components:

- Long, sheltered and fertile improved inland valleys in contrast to surrounding more common moorland and coast;
- diversity of colour and texture formed by different land uses and management techniques;
- rare areas of woodland on the Kergord Estate;
- Tingwall Valley includes the site of the former Norse parliament; and
- attractive, contained views north and south along valleys.

Principal Negative Components:

- No significant negative components.

Landscape Scenic Quality – Generally **Medium** with areas of **Medium to High**.

Landscape Value – Landscape value is **Medium to High** for this area because although it is not covered by any designations it is attractive and rare within the Shetland landscape.

D2 – Crofting and Grazing Inland Valleys: Cuckron

This is a long, linear north-south orientated valley, exploited in its more fertile and sheltered areas by crofting and grazing. This is a large scale, enclosed landscape with a distinct crofting character. There is a great diversity of colour and texture as a result of the contrast of land uses resulting in areas of improved land, rough grassland, the waters of the Loch of Strom and heather moorland on higher ground. This area engenders a feeling of tranquillity but there is also a quality of neglect due to the numbers of derelict croft houses.

Principal Positive Components:

- Sheltered and fertile inland valley with a distinct crofting character; and
- diversity of colour and texture provided by the contrast of improved land with the areas of rough grazing and the Loch of Strom.

Principal Negative Components:

- An air of neglect due to the number of derelict croft houses; and
- loss of landscape quality due to agricultural improvement.

Landscape Scenic Quality – **Medium**.

Landscape Value – This area is not located within any designated areas but it is valued for its distinct character within the Shetland landscape and therefore the landscape value is **Medium**.

D3 – Crofting and Grazing Isolated Valleys: Wester Quarff (South Mainland) and Dale (West Mainland)

These areas are largely enclosed valleys, bounded at one end by coastal waters. The character is influenced by the crofting practices which take place and there is a diversity of colour and texture brought about by the contrast of improved and unimproved lands. Views are contained within the valleys. Note that only Dale falls within the detailed study area.

Principal Positive Components:

- Enclosed valleys with attractive crofting character; and
- diversity of colour and texture brought about by contrast of different land uses and land management.

Principal Negative Components:

- Derelict structures and buildings at Laxobigging and Bordigarth.

Landscape Scenic Quality – **Medium** with isolated areas of **Medium to Low**.

Landscape Value – A very small section of this area at the seaward end of the Quarff valley is within the NSA. However, this is not an integral part of the NSA nor is it an integral part of the character area and therefore the landscape value is **Medium**.

D4 – Peatland and Moorland Inland Valleys

This is a large scale unenclosed landscape of inland valleys characterised by peatland and heather moorland. There is little diversity in colour and texture with variation provided by areas of standing water and small lochs and areas of eroded and exposed peatland. The few areas of improved land stand out sharply against the muted colours of the peatland. Extensive views are afforded along the valley, sometimes extending to settled areas or the coast. This is a generally uninhabited landscape with human influence limited to electricity transmission lines and roads.

Principal Positive Components:

- Large scale landscape with limited human influence and subtle colours and variations; and
- extensive views along the valley to the sea and coastal settlements.

Principal Negative Components:

- Little diversity in colour and texture;
- large scale, exposed landscape can be unsettling; and
- areas of improved grassland, roads and electricity transmission lines contrast with the surrounding natural vegetation.

Landscape Scenic Quality – **Medium**

Landscape Value – These areas do not fall within any landscape designated area and this landscape type is not uncommon within the Shetland context. They do, however, provide important landscape corridors and direct inland links between settlements and therefore the landscape value is **Medium**.

Landscape Guidelines

Selected landscape guidelines for the Inland Valleys LCT are as follows:

- *Traditional stone walls, field boundaries and hill dykes associated with crofting should be conserved and restored;*
- *Traditional crofting practices should be promoted;*
- *Wetland areas, water margin vegetation and herb rich grassland in the lower part of valleys should be safeguarded and measures for regeneration promoted;*
- *Retention and regeneration of heather moorland... should be encouraged on higher ground; and*
- *Planting of woodland, particularly of native species, should be encouraged on a small scale in sheltered areas such as along watercourses and within the curtilage of existing and new buildings*.

(e) **E - Farmed and Settled Lowlands and Coast**

This LCT consists of a narrow strip of land between the uplands and the coast which provides much of Shetland's productive land. These are areas characterised by their long history of settlement and the existing land use and management techniques which take place on them. Rough pasture is the dominant landcover with areas of arable land and

improved grassland. Different areas of character are distinguished by their settlement patterns, evidence of past and present agricultural practices and subtle changes in landform. The variety and richness of colour also plays a part in defining character.

Five of the six different LCAs are represented within the study area.

- E1 – Farmed Land
- E2 – South Mainland Scattered Settlement and Grazing Lands
- E3 – Coastal Crofting and Grazing Lands
- E4 – Unst and West Mainland Coastal Crofting
- E5 – West Mainland Lowland Crofting

E1 – Farmed Land

Area of intensively farmed land located within the study area in the area around Twatt in the west mainland. This consists of good quality grazing land and arable farming with scattered agricultural development and crofts. The mosaic of land types provides a rich and varied texture in contrast to surrounding uplands. Larger agricultural buildings and fields are a notable feature in the landscape.

Principal Positive Components:

- Rich mosaic of quality grazing land and arable fields giving rise to a range of colours and textures.

Principal Negative Components:

- Large agricultural buildings.

Landscape Scenic Quality – **Medium**.

Landscape Value – **Medium** - This area has some value as it is one of very few areas of quality agricultural land in Shetland. However, it is not a highly significant landscape within the wider area as it has few of the features for which the Shetland landscape is appreciated.

E2 – South Mainland Scattered Settlement and Grazing Lands

This LCA is a small area located on the eastern coastal strip of the south mainland south of Lerwick. It consists of scattered agricultural, crofting and suburban settlement. Much of this area is dominated by an incoherent pattern of recently constructed dwellings, obscuring the underlying crofting character and fragmenting grazing lands. The overall impression is of an unbalanced landscape where in many places the relationship between settlement and landscape has been lost. There is however a great variety in the landscape provided by the extent of the settlement with the backdrop of the uplands and open coastal outlook.

Principal Positive Components:

- Landscape variety provided by the extent of settlement with upland backdrop and coastal outlook.

Principal Negative Components:

- Incoherent housing development, obscuring the underlying traditional crofting character of the area and fragmenting grazing land; and
- loss of relationship between settlement and landscape.

Landscape Scenic Quality – **Medium**

Landscape Value – The highly developed, unplanned nature of this landscape gives it a **Low** landscape value.

E3 – Coastal Crofting and Grazing Lands

This area is found in several coastal locations throughout Shetland but most specifically, within the study area, on the east Mainland, Bressay and Whalsay. It takes the form of a relatively undeveloped area of grazing land, maintaining the traditional crofting pattern though many dwellings no longer function as traditional croft houses. Rough grazing land is the dominant land cover with many areas of degraded heather moorland and abandoned improved land. There are numerous derelict crofts, and the overall impression is of a relatively unmanaged coastal crofting landscape.

Principal Positive Components:

- Relatively undeveloped landscape maintaining the traditional pattern of crofting settlements; and
- subdued colours of the vegetation contrast with the seascape.

Principal Negative Components:

- Areas of degraded heather moorland, abandoned improved land and derelict crofts give a neglected feel to landscape.

Landscape Scenic Quality – Predominantly **Medium to High**.

Landscape Value – **Medium**.

E4 – Unst and West Mainland Coastal Crofting

This area is located on areas of Unst, Fetlar and the west mainland and is typified by crofting on low lying relatively fertile coastal ground. The crofting land consists of good quality grazing land, of a smooth texture and even, rich green colour scattered with croft houses. This contrasts with a backdrop of peatland and moorland on higher ground. The resultant landscape appears varied and distinctive.

Principal Positive Components:

- Croft houses located in the context of well managed, good quality grazing land with a fine smooth texture and even rich green colour; and
- contrast of ordered landscape with a generally open setting acting as a backdrop and seascape which creates a varied and distinct landscape.

Principal Negative Components:

- No significant negative components.

Landscape Scenic Quality – **Medium to High** with localised areas of **High**.

Landscape Value – Part of this area lies within the NSA. The landscape is unusually fertile in appearance and well managed and therefore the landscape value is **High**.

E5 – West Mainland Lowland Crofting

These are two expansive inland areas in the west mainland which are characterised by rolling grazing land with few scattered dwellings or crofts. Overall this is a simple landscape with a fairly uniform grass cover and open, broad, rolling character. Its rolling green character, which is distinct in the context of Shetland, arises as a result of the improvement of the grassland for sheep. Some small areas of crofting contrast with the expansive sheep grazing.

Principal Positive Components:

- Broad rolling grass covered landscape, distinct within the Shetland context;
- simple coherent landscape with few scattered dwellings; and
- small areas of crofting, contrasting with wider grazing landscape.

Principal Negative Components:

- Large scale fields, simple landscape with little variation.

Landscape Scenic Quality – Predominantly **Medium** with some areas of **Medium to High**.

Landscape Value – This area is not covered by any landscape designations but it is distinctive within the wider Shetland landscape and therefore the landscape value is **Medium to High**.

Landscape guidelines

Selected landscape guidelines for the Farmed and Settled Lowlands and Coast LCT are as follows:

- *Traditional crofting practices should be promoted;*
- *Traditional stone wall field boundaries and hill dykes… should be conserved and restored;*
- *Wetland areas, water margin vegetation, coastal grassland and dunes should be safeguarded and measures for regeneration promoted; and*
- *Archaeological features which reinforce the traditional and cultural significance of the area should be recorded, safeguarded and interpreted.*

(f) **F - Farmed and Settled Voes and Sounds**

This LCT comprises the landscape associated with Shetland's enclosed coastal waters. These areas consist chiefly of deep inlets and bays and sheltered waters enclosed by Shetland's many islands. These areas provide sheltered situations and safe harbours and have an important and unique character which epitomises the character and culture of Shetland. The lands surrounding these coastal waters have been farmed and settled for a long period and their character is a result of successive settlement and land use. Pasture and rough grazing are the dominant forms of landcover, although, there are areas of arable land and occasional trees in some of the more sheltered areas. This landscape type notably includes the majority of major settlements and development in Shetland. The

landscape character is greatly influenced by the nature of the relationship between the development and the land or sea, the balance satisfying and coherent in some and incongruous in other. The overall perception of this LCT is of a rich, varied and modified landscape.

Four of the five LCAs are represented within the study area:

- F1 – Developed Areas;
- F2 – Nucleated Settlements;
- F3 – Farmed Land; and
- F5 – Scattered Settlement/Crofting and Grazing Lands.

In addition to these areas, and for the purpose of this assessment, one further area has been defined at Dales Voe in view of its distinctive landform and characteristics. This further character area is:

- F6 – Dales Voe and Colla Firth

F1 – Developed Areas

These areas include the major administration centre and harbour at Lerwick and the large scale industrial development at Sullom Voe. They are dominated by large scale development where there is now little evidence of former vegetation or landscape character. The landscape is dominated by built elements and hard surfacing which define the landscape character.

Principal Positive Components:

- Attractive, cultural and historic buildings at Lerwick e.g. Fort Charlotte, old town and harbour.

Principal Negative Components:

- Dominance of large scale industrial development at Lerwick and Sullom Voe;
- incongruous nature of industrial developments in surrounding moorland and coastal landscapes; and
- sprawling nature of industrial and housing development on the outskirts of Lerwick.

Landscape Scenic Quality – **Medium to Low** but locally **Low**.

Landscape Value – **Low** but locally **High** in historic areas of Lerwick.

F2 – Nucleated Settlements

These areas are residential developments located throughout Shetland, usually centred around small harbours on sheltered sea inlets. Surrounding areas are enclosed and managed, usually rough grassland. A range of colours and textures is provided by the contrast of houses, harbours, boats and surrounding rough grassland and heather moorland. Some of the small settlements are dominated by large modern public buildings.

Principal Positive Components

- Range of colours and textures provided by the dwellings, harbours and boats and contrasting surrounding rough grassland and moorland.

Principal Negative Components

- Poorly sited or obtrusive recent development detracting from visual qualities of landscape.

Landscape Scenic Quality – Generally **Medium to High** but with localised areas of **Medium** or **Low to Medium**.

Landscape Value – As developed areas within a largely undeveloped landscape these areas are generally of a **Low to Medium** landscape value. However, some areas may be of a **Medium to High** landscape value where the settlement is a key feature within an overall highly valued landscape.

F3 – Farmed Land

This LCA consists of an area of more intensive agriculture located on the east central mainland, surrounding Lax Firth and up Tingwall Valley. The area is distinct as an area of improved agricultural land in such a coastal location. It forms a mosaic of grazing land and arable fields which provide a varying texture and colour scheme, contrasting with surrounding moorland and enclosed water. There are also a number of distinctive woodland blocks in the Tingwall Valley. There are a high number of new dwellings in this area, at times concentrated into nucleated settlement and an airport with associated sheds and hangars.

Principal Positive Components:

- Varied texture and range of colour provided by mosaic of grazing land and arable fields which contrast with surroundings of enclosed water and uplands; and
- distinctive woodland blocks in the Tingwall valley.

Principal Negative Components:

- High numbers of new dwellings; and
- an airport and associated buildings.

Landscape Scenic Quality – **Medium**.

Landscape Value – This area is not covered by any landscape designations. Its settled lowland character is distinctive within Shetland but is on the whole unexceptional. Landscape value is therefore **Medium**.

F5 – Scattered Settlements/Crofting and Grazing Land

These areas of scattered settlement and crofts are located on a mosaic of improved and unimproved grazing land with a subtle variation of colour and texture. These areas are located throughout Shetland on the fringes of voes and sounds. The overall impression is of a varied but well balanced, managed crofting landscape.

Principal Positive Components:

- Varied land management creates a subtle mosaic of colours and textures;

- attractive coastal views; and
- coherent relationship between landscape elements forming varied, well balanced landscape.

Principal Negative Components:

- No key negative components.

Landscape Scenic Quality – Predominantly **Medium to High** with localised areas of **Medium** or **High**.

Landscape Value – This area has value as a fertile, settled area in contrast with inland moors and peatland. Some parts are within the NSA or provide a backdrop to other highly valued areas and therefore the value is **Medium to High**.

F6 – Dales Voe and Colla Firth

This is an additional LCA to those identified in the SNH Landscape Character Assessment, covering the area surrounding Dales Voe and Colla Firth which has been identified as being distinct from the rest of LCA F5, Scattered Settlements/Crofting and Grazing Land. The key feature of this LCA is two long fjord-like voes enclosed by high steep-sided slopes and separated by a steep, narrow peninsula 150m high. A number of properties are scattered along the base and the western end of the valley, nestled in the angle at the bottom of the steep side-slopes. Other new properties have been built further up the slopes, sometimes located in an unsympathetic random manner. Inland, at the heads of the voes the landscape is well managed with a patchwork of green fields which contrast strongly with the muted brown colours of the adjacent side slopes. This LCA has a strong and slightly threatening feel of enclosure and is visually distinct from all other areas.

Principal Positive Components:

- Well managed patchwork of green fields at inland points of the voes contrasting with muted browns of the adjacent steep side slopes;
- dramatic views associated with combinations of long inland voes and steep, high side slopes, visually distinct from all other areas.

Principal Negative Components:

- Occasional random and unsympathetic siting of new properties;
- sometimes threatening feel of enclosure; and
- disused crofts above Colla Firth giving a slightly melancholy and lonely air to this part of the LCA.

Landscape Scenic Quality – **Medium to High** or **High**.

Landscape Value – This area is not located within any areas covered by landscape designation. However, the dramatic scenery and high scenic quality give it a **Medium to High** landscape value.

Landscape Guidelines

Selected landscape guidelines for the Farmed and Settled Voes and Sounds LCT are as follows:

- *Traditional stone walls, field boundaries and hill dykes associated with crofting should be conserved and restored;*
- *Traditional voe head settlements and small harbours should be conserved;*
- *Traditional crofting practices should be promoted;*
- *Wetland areas, water margin vegetation and herb rich grassland in the lower part of valleys should be safeguarded and measures for regeneration promoted; and*
- *Planting of woodland, particularly of native species, should be encouraged on a small scale in sheltered areas such as along watercourses and within the curtilage of existing and new buildings.*

(g) **Coastal Edge**

This LCT is located along several sections of the Shetland coast but more often on the western edges and outer extremities. These areas consist of a dramatic variety of coastal features including cliffs, sea stacks, natural arches and sandy beaches. These features in combination with the sea bids, marine life and the colour and movement of the sea create a distinct and inspiring landscape.

This LCT has not been separated into distinct LCAs.

Principal Positive Components:

- Dramatic variety of coastal features including cliffs, sea stacks, natural arches and sandy beaches;
- inspiring landscape formed by combination of coastal features and sea and complemented by sea birds and marine life.

Principal Negative Components:

- No significant negative components.

Landscape Scenic Quality – **Medium to High** or **High**.

Landscape Value –The rich combination of sea, cliffs, beaches, sea stacks and bird life is reflected in the designation of parts of this landscape as a National Scenic Area and consequently the landscape value is considered to be **High**.

Landscape Guidance

Landscape guidance for the coastal edge LCA includes the following:

- *Retention of the existing dramatic scenic qualities, landforms, wildlife, vegetation and geology;*
- *A program for monitoring change in the natural vegetation and landforms should be established; and*
- *Features which form part of the coastal edge should be recorded, safeguarded and interpreted.*

8.6 CHARACTER IMPACT ASSESSMENT

8.6.1 Basis of Assessment

(a) **Development Characteristics**

The key elements and characteristics of the proposed wind farm development which may give rise to landscape or visual impacts are shown on figures 4.1.1 and 4.1.2 and are as follows:

- Turbines (150 turbines at an assumed height of 90m to hub with 110m diameter blades – 145m overall height:
- access tracks;
- anemometers;
- borrow pits;
- control buildings; and
- decommissioning.

(b) **Assumed Design and Management Proposals**

The following elements and activities associated with the construction phase of the proposed development have the potential to result in impacts on the landscape and visual amenity of the study area:

- Upgrade of existing access and construction of new site access tracks;
- borrow pit excavations; (N.B. worst case scenario has been assumed; i.e. complete excavation of all borrowpit search areas identified in this ES);
- erection of turbines and anemometry masts;
- construction of control buildings and substations;
- lay-down areas;
- temporary site compound incorporating site offices and concrete batching plant;
- excavation and construction of turbine foundations and crane pads;
- excavations for underground cables;
- HGV and abnormal load deliveries to site and movement of vehicles on site; and
- reinstatement work, including removal of temporary accommodation.

The nature of the work proposed is described in Chapter 4, Development Description.

The location and management of these components have been carefully considered to minimise environmental effects including potential landscape and visual effects during the construction stage.

The first four items on the above list would result in development components that would also be present for the duration of the operational stage of the wind farm, and related impacts on landscape and visual amenity are considered in the assessment which follows. It has been assumed that on completion of the construction phase, borrowpits will be

partially infilled and then revegetated with native groundcover vegetation; nevertheless it is anticipated that depressions created will still be noticeable in the landscape during operation. The other components of the construction works would all give rise to temporary impacts on landscape and visual amenity.

Consideration has been given to the potential landscape and visual impacts during this stage of the development. The relatively limited extent of disturbance together with the short duration of the effects and related reinstatement of working areas would ensure that the effects of the construction phase on the landscape and visual amenity of the locality are limited.

The operational life of the wind farm would be approximately twenty-five years. The operational elements with the potential to affect the landscape and visual amenity of the study area are:

- Wind turbine generators and anemometer masts;
- access tracks;
- anemometers;
- restored anemometers;
- borrow pits; and
- control buildings and substations.

The nature of these components during operation is described in detail in Chapter 4, Development Description.

The visual effects of the introduction of the operational elements are considered in further detail within Chapter 9 and the landscape effects are considered below.

The decommissioning phase of the development would be of similar duration to the construction phase, with the dismantling of all above ground structures and reinstatement of disturbed ground, as described in Chapter 4. Below ground structures would be left in place to avoid further disturbance.

There would therefore be a temporary impact from the activities on site to remove structures, but this would be of relatively short duration. Accordingly, the decommissioning phase is considered to have a minimal effect on the landscape and visual amenity of the locality, and has not been assessed in any further detail.

The site selection rationale, the iterative design process employed and wind farm development proposed are described in Chapters 3 and 4. These chapters include a number of planning, design and construction proposals to safeguard landscape and visual interests and mitigate potential impacts. A detailed description of the different design approaches and the optimal solution is provided in Chapter 4.

8.6.2 Identification of Sensitivity to Change, Magnitude of Change and Impact Assessment

The assessment of the sensitivity to change, magnitude of change and impact experienced by the designated sites and landscape character areas is detailed below in Tables 8.4.1 to 8.6.25 inclusive. Sensitivity to change arising from wind farm development for each Landscape Character Area is presented in figure 8.6.

In respect of both designated sites and the local character areas, the tables review the extent falling within the detailed 15km study area and approximate area directly or indirectly impacted by the proposals (as indicated by reference to the ZTV). There follows a summary of relevant landscape characteristics, scenic quality and value, magnitude and nature of changes, sensitivity to the change proposed and assessment of impacts, whether direct or indirect and finally their significance. This is based upon the methodology described above in Section 8.4.3.

8.6.3 Designated Areas (within 35km of proposed development)

(a) Shetland National Scenic Area

Table 8.4.1: Shetland National Scenic Area – Dunrossness and the Deeps Area

Area	**Dunrossness and the Deeps**
Status	National Scenic Area
Total Area	207km²
Extent within 35km of proposals	Approximately 185km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However, many parts within the study area would potentially be indirectly affected. The more northerly parts, particularly the peninsulas of White Ness and Strom Ness, an area around Raewick and the smaller isles around Hildasay, Papa and Oxna would potentially experience greater indirect changes.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Key features within the NSA, including long Fjord-like voes; and • impressive coastal composition of islands and skerrays, rocky coastline, sea and sky.
Scenic Quality	Generally High; Medium to High north of Burra
Value	Generally High; Medium north of Burra
Sensitivity to change proposed	Sensitivity to change of the type proposed for this NSA is generally High because of its high scenic quality and extensive views. Existing development within the central and southern part of the NSA tends to be at a scale and of a nature in keeping with the landscape. However, sensitivity to the proposals in the northern area is reduced to Medium to High due to the presence of the nearby Burradale wind farm, Scord Quarry and more extensive voe – side settlement compared to the south.
Magnitude of changes	Changes to this landscape are relatively widespread but are indirect. These changes are likely to be noticeable in northern areas of this NSA, such as at White Ness, The Deeps, and the small uninhabited islands of Hildasay and Oxna. However, the overall scale of the change to the character of this area is low. Magnitude of change –Locally Low in the north, elsewhere Negligible to Low
Impact Assessment	**Slight to Moderate** and **Indirect** for northern parts of the NSA intervisible with the proposals but overall **Slight** and **Indirect** as the proposed development would be unlikely to affect the key defining features or the integrity of the designation, with focal views directed primarily to the south and west rather than inland towards the proposals. **(NOT SIGNIFICANT)**

Table 8.4.2: Shetland National Scenic Area – Muckle Roe

Area	**Muckle Roe**
Status	National Scenic Area
Total Area	22km²
Extent within 35km of proposals	22km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. A number of small areas of elevated coastal land at the northern and southern extremities of the NSA and an area in the sea to the west of Muckle Roe (which falls within the NSA boundary) are likely to be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Impressive rocky coastline and cliffs in wider context of St Magnus bay.
Scenic Quality	High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this NSA is High because of its high scenic quality and extensive views, with little or no evidence of major human development.
Magnitude of changes	Changes to this landscape as a result of the proposals would be indirect and would be limited to only a few small areas, including from West Hill of Ham, Muckla Field and Black Hill. From these areas changes are likely to be minor as the proposals form only a small part in the wider landscape. Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.4.3: Shetland National Scenic Area – Esha Ness

Area	**Esha Ness**
Status	National Scenic Area
Total Area	38km²
Extent within 35km of proposals	38km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However most of the area of this NSA would potentially be indirectly affected. Areas around West Heogaland, Tangwick and the southern point of Baa Taing are likely to receive the most noticeable change.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Impressive rocky coastline including dramatic cliffs, skerries and stacks.
Scenic Quality	High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this NSA is High because of its high scenic quality, with little evidence of human influence.
Magnitude of changes	Changes to this landscape would be relatively widespread, although indirect, focussed on the areas around Stenness, The Neap, Tangwick and West Heogaland. However, the proposals would be relatively distant (beyond 10km) and would be a minor element in the wider landscape, therefore reducing the magnitude of change. Magnitude of change – Low

Impact Assessment	**Slight** to **Slight to moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.4.4: Shetland National Scenic Area – Uyea isle and Fethaland

Area	**Uyea Isle and Fethaland**
Status	National Scenic Area
Total Area	61km²
Extent within 35km of proposals	61km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However some parts in the eastern half of this area would potentially be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Impressive rocky coastline including dramatic cliffs, skerries and stacks.
Scenic Quality	High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this NSA is High because of its high scenic quality and extensive views, with little or no evidence of human influence.
Magnitude of changes	Changes to this landscape would be limited and would be indirect. The majority of the area is unlikely to be affected by the proposed development. However south facing slopes and high points in the eastern half of this NSA, such as Burnt Hill are likely to experience an indirect change. Due to the distance from the proposed development (beyond 16km) any potential change would be minimal and would comprise only a very small element in the wider landscape. The coastline of this area, which has been identified as a key feature of this landscape, is unlikely to experience change as a result of the proposed development. Magnitude of change would be Negligible
Impact Assessment	**Negligible** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

(b) **Shetland Gardens and Designed Landscapes**

Table 8.5.1: Shetland Gardens and Designed Landscapes – Belmont House

Area	**Belmont House**
Status	Listed in the Inventory of Gardens and Designed Landscapes
Total Area	0.24 km²
Extent within 35km of proposals	0.24 km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However, most parts would potentially be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Designed vista orientated along a south facing axis from the elevated house, across the Wick of Belmont and beyond to Yell and other uninhabited islands; and • Important views westwards, across the Loch of Belmont.
Scenic Quality	High
Value	High.

Sensitivity to change proposed	Sensitivity to change of the type proposed for this landscape is Medium to High because although it has a high scenic quality and extensive views, these views include ferry terminals and other industrial buildings.
Magnitude of changes	Changes to this landscape would be relatively widespread although indirect. Due to the distance from the proposed development (beyond 30km) these changes are likely to be virtually imperceptible. Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

Table 8.5.2: Shetland Gardens and Designed Landscapes – Brough Lodge

Area	**Brough Lodge**
Status	Listed in the Inventory of Gardens and Designed Landscapes
Total Area	0.28 km²
Extent within 35km of proposals	0.28 km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However, most parts would potentially be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • The gothic tower and house are important features both from within the Designed Landscape and beyond its boundaries; and • important views westwards, across the Colgrave Sound and to Hascosay and Yell.
Scenic Quality	High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this designed landscape is High because of its high scenic quality and extensive views.
Magnitude of changes	Due to the distance from the proposed development (beyond 25km)indirect changes are likely to be virtually imperceptible. .Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

Table 8.5.3: Shetland Gardens and Designed Landscapes – Gardie House

Area	**Gardie House**
Status	Listed in the Inventory of Gardens and Designed Landscapes
Total Area	0.34 km²
Extent within 35km of proposals	0.34 km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However, part of the area would potentially be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • The parkland and garden are set on strong parallel axis running northeast to southwest and follow a very formal symmetrical pattern.
Scenic Quality	Medium to High
Value	High.

Sensitivity to change proposed	Sensitivity to change of the type proposed for this designed landscape is Medium because although it has a medium to high scenic quality and a relatively extensive outlook, this is generally focused towards Lerwick, the close proximity to which, including the industrial harbour area, reduces the potential sensitivity.
Magnitude of changes	Changes to this landscape would be indirect and would affect approximately half of the area. The distance from the proposed development (15km) reduces the perceived level of change. Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

Table 8.5.4: Shetland Gardens and Designed Landscapes – Lunna House

Area	**Lunna House**
Status	Listed in the Inventory of Gardens and Designed Landscapes
Total Area	0.61 km²
Extent within 35km of proposals	0.61 km²
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposed development. However, most parts would potentially be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Designed landscape views following a south west facing axis from the house to a series of eye catchers on the hill in front; and • a collection of walled enclosures, eye catchers and buildings.
Scenic Quality	High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this designed landscape is High because of its high scenic quality and extensive views.
Magnitude of changes	Changes to this landscape would be relatively widespread although indirect. Lunna House was identified as a key landscape and visual receptor and as a result has influenced the layout design of the proposed development. This has lead to reduced visibility of the proposed development along the main axial view and therefore reduced levels of change to the key landscape features. Magnitude of change – Low to Medium
Impact Assessment	**Slight to Moderate** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

8.6.4 Landscape Character Areas (within 15km of proposed development)

Table 8.6.1: A1 - South Mainland Spine

Local Character Area	**A1 - South Mainland Spine**
Extent within 15km of proposals	Approximately 25km² of this LCA lies within the 15km detailed study area.
Approximate area impacted by proposals	This LCA would not be directly affected by the proposed development in terms of turbine location and associated infrastructure. However, approximately 50% of the area is likely to be indirectly affected.
Relevant landscape	Key characteristics likely to be influenced by the proposals include:

characteristics	• Large scale, exposed and open landscape with striking elevated views; and • natural, uninhabited character.
Scenic Quality	Medium
Value	Low to Medium
Sensitivity to change	Sensitivity to change of the type proposed for this LCA is Medium because it is already affected by a wind farm and some MOD and telecommunications structures and adjacent extensive settlement areas.
Magnitude of changes	Changes to this LCA would be indirect and would generally only affect the elevated areas and north facing slopes. Less elevated and south facing slopes are unlikely to be unaffected. The changes are likely to be perceived as only a small element within the wider landscape. Magnitude of change; Low.
Impact Assessment	**Slight** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.2: A2 – East and West Kame

Local Character Area	**A2 - East and West Kame**
Extent within 15km of proposals	Approximately 150km² of this LCA lies within the 15km detailed study area.
Approximate area impacted by proposals	The majority of the proposed development would be located within this LCA resulting in direct impacts. In addition there would be indirect impacts as the proposal would be a feature throughout the LCA.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Large scale landscape with expansive views; • uninhabited character; and • north- south trending rounded landform.
Scenic Quality	Predominantly Medium
Value	Low to Medium
Sensitivity to change	Sensitivity to change of the type proposed is Low because of the open, large-scale landscape character with few distinctive features and areas on the periphery influenced by existing development on the lowlands and coasts.
Magnitude of changes	Magnitude of change where direct impacts occur would be High. The introduction of large wind turbines, tracks and borrow pits into the upland landscape would be a significant change, and would dominate the open character of the large scale landscape. Parts of this LCA which would receive indirect change would be likely to have a slightly reduced magnitude of Medium to High.
Impact Assessment	This low sensitivity, large-scale and relatively featureless landscape would nevertheless experience a high degree of change. Impacts would therefore be **Moderate to Substantial** where impacts are direct and **Moderate** where impacts are indirect. **(SIGNIFICANT)**

Table 8.6.3: A3 – Ronas Hill

Local Character Area	**A3 – Ronas Hill**
Extent within 15km of proposals	Approximately 20km² of this LCA lies within the 15km detailed study area.
Approximate area	This LCA would receive only indirect impacts as a result of the proposal.

impacted by proposals	Elevated and south facing slopes, consisting of around half of the area, are likely to be the most significantly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Broad intervisibility with adjacent landscapes; and • open, large-scale character.
Scenic Quality	Predominantly Medium
Value	Medium to High
Sensitivity to change	Sensitivity to change of the type proposed is Medium because this is an elevated although unremarkable landscape feature which has a few peripheral signs of human influence.
Magnitude of changes	Changes to this landscape would be fairly widespread, although indirect. The distance from the proposed development (over 12km) means that a large part of this LCA would be indirectly affected by the turbines. However, these would be distant – at least 12km away – and would feature in only a small part of the overall landscape. As such the magnitude of change would be Low.
Impact Assessment	**Slight to Moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.4: A5 – Sandness Hill

Local Character Area	**A5 – Sandness Hill**
Extent within 15km of proposals	Approximately 10km² of this LCA lies within the 15km detailed study area.
Approximate area impacted by proposals	No part of this area would be directly affected by the proposed development. However, most parts would potentially be indirectly affected
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Broad intervisibility with adjacent landscapes; and • open, large-scale character.
Scenic Quality	Medium
Value	Medium
Sensitivity to change	Sensitivity to change of the type proposed is Medium because this is an elevated although unremarkable landscape feature which has some signs of human influence on the periphery.
Magnitude of changes	Most of this LCA would be indirectly affected by the proposed development, which is located approximately 12 – 15km to the east. However, due to the distance, the degree of change to the character of this area would be much reduced. Magnitude of change would be Low to Medium.
Impact Assessment	**Slight** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.5: B1 – Yell Peatland

Local Character Area	**B1 – Yell Peatland**
Extent within 15km of proposals	Approximately 35km² of this LCA lies within the 15km detailed study area.
Approximate area impacted by proposals	This LCA would receive only indirect impacts from the proposed development. This would be limited to the western part of the LCA with approximately 75% of the area within the study area receiving potential

	indirect impacts.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Broad intervisibility with adjacent landscapes; and • open and large-scale character.
Scenic Quality	Medium
Value	Low to Medium
Sensitivity to change	Sensitivity to change of the type proposed is Low because of the open and barren nature of the landscape with human influences towards the periphery.
Magnitude of changes	Approximately 75% of the part of this LCA within the study area would be affected by indirect changes. However, the proposals would be fairly distant and would be perceived as only a small element within the overall landscape. They would be unlikely to impact upon the uninhabited peatland character of this LCA which is large in scale. Magnitude of change would be Low.
Impact Assessment	**Negligible to Slight** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.6: B2 – Rounded Moorland Hills

Local Character Area	**B2 – Rounded Moorland Hills**
Extent within 15km of proposals	Approximately 90km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this LCA would be directly affected by the proposed development. However, around 50 – 75% would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Large-scale landscape character.
Scenic Quality	Medium, locally Medium to High
Value	Medium to High
Sensitivity to change	Sensitivity to change of the type proposed is Low to Medium because these are medium scale areas with some influence from nearby voe – side or valley development.
Magnitude of changes	In general, although some parts of this LCA would be potentially close to the proposed wind farm, the potential indirect changes would be lessened by the hummocky nature of the landform. However, isolated areas of higher ground would potentially receive more noticeable changes, particularly those areas to the east and southeast of the proposals. Changes would usually constitute a small element within the wider landscape. Magnitude of change would be Low.
Impact Assessment	**Slight** overall, locally **Slight to Moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.7: B4 – South Mainland Coastal Moorland

Local Character Area	**B4 – South Mainland Coastal Moorland**
Extent within 15km of proposals	Approximately 2km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this LCA would be directly affected by the proposed development and only a very small part, approximately 50% of that within the study area would potentially be indirectly affected.

Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Large-scale landscape with impressions of openness.
Scenic Quality	Medium
Value	Medium
Sensitivity to change	Sensitivity to change of the type proposed is Medium. This LCA contributes areas of currently uninhabited character but these are depleted by the indirect effects of nearby development.
Magnitude of changes	Only a very small part of this LCA would be indirectly affected by the proposals which are located approximately 15km to the north. Indirect changes are likely to be minor and would be only a very small element within the wider landscape. Magnitude of change would be Negligible.
Impact Assessment	**Negligible** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.8: C1 – West Mainland and Northmavine: Muckle Roe and Mangaster/Nibon

Local Character Area	**C1 – West Mainland and Northmavine: Muckle Roe and Mangaster/Nibon Area**
Extent within 15km of proposals	Approximately 100km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposals but elevated areas and east facing slopes may be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Broad intervisibility from higher areas; and • open, large-scale, natural character.
Scenic Quality	Predominantly Medium to High
Value	Medium
Sensitivity to change	The irregular topography of this LCA reduces its sensitivity; there is some peripheral development and occasional distinctive features. Sensitivity is therefore Medium.
Magnitude of changes	The irregular topography of this LCA would mean that indirect changes would be limited to areas of elevated ground. In general these changes would be limited, and the proposals would appear as only a small element in the wider landscape. As such their influence on the landscape character would be unlikely to be significant for the majority of the area. However there may be some isolated areas of higher ground which would receive increased levels of change. Magnitude of change would generally be Low, however.
Impact Assessment	**Slight to Moderate** overall, locally **Moderate** on areas of higher ground facing proposals, and **Indirect** during construction and operation. **(GENERALLY NOT SIGNIFICANT; LOCALLY SIGNIFICANT)**

Table 8.6.9: C2 – Uyea, Braewick, Tingon and North Roe

Local Character Area	**C2 – Uyea, Braewick, Tingon and North Roe**
Extent within 15km of proposals	Approximately 15km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposals but 50% of the area within the study area would potentially be indirectly affected.

Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Broad intervisibility from higher areas; and • open, natural character.
Scenic Quality	Predominantly Medium to High with localised areas of High
Value	Medium to High
Sensitivity to change	Sensitivity to change of the type proposed for this LCA is Medium because of large and small scale landforms and landcover in combination and some peripheral development.
Magnitude of changes	Change to this landscape would be indirect and relatively distant (12 – 15km), therefore the proposals would comprise only a very small element within the wider landscape and would be unlikely to be a major feature within the landscape, which is predominantly focused towards the more dramatic scenery of the coast. Magnitude of change would therefore be Low.
Impact Assessment	**Slight to Moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.10: C3 – Lunna Ness and Dragon Ness

Local Character Area	**C3 – Lunna Ness and Dragon Ness**
Extent within 15km of proposals	Approximately 25km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this area would be directly affected by the proposals but almost all areas would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Less exposed character area with intimate sense of enclosure on lower ground; • intervisibility from higher ground and west facing slopes; and • attractive small scale crofting landscape.
Scenic Quality	Medium to High
Value	Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed is Medium to High because of the small scale and sometimes complex character .
Magnitude of changes	Change to this landscape would be fairly widespread although indirect. The area closest to the proposal would be at South Nesting, resulting in a locally increased degree of change. In general the change is likely to have an indirect influence on the key characteristics of this landscape area. Magnitude of change would generally be Medium; Medium-High in South Nesting area.
Impact Assessment	Generally **Moderate** but locally **Moderate to Substantial** in the South Nesting Area and **Indirect,** during both construction and operation. **(SIGNIFICANT)**

Table 8.6.11: D1 (A) – Farmed and Settled Inland Valleys: Weisdale

Local Character Area	**D1(A) – Farmed and Settled Inland Valleys: Weisdale**
Extent within 15km of proposals	Approximately 3km² of this LCA lies within the 15km detailed study area.

Extent of area potentially affected by proposals	No part of this LCA would be directly affected by the proposed development. However, the majority of this LCA would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Sheltered and fertile improved inland valleys contrasting with surrounding moorland; and • attractive contained views north and south along valleys.
Scenic Quality	Medium with areas of Medium to High.
Value	Medium to High
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is High because of the relatively small scale complex nature of the LCA.
Magnitude of changes	Weisdale valley would potentially receive greater levels of change, largely due to the close proximity of the proposals, which are as little as 1km distant. Linear views up the valley could become dominated by turbines, weakening the contrast between moorland and improved land which is a key characteristic of this LCA. Magnitude of change would therefore be Medium to High.
Impact Assessment	**Moderate to Substantial** and **Indirect** during construction and **Moderate** and **Indirect** during operation **(SIGNIFICANT)**

Table 8.6.12: D1 (B) – Farmed and Settled Inland Valleys: Tingwall

Local Character Area	**D1(B) – Farmed and Settled Inland Valleys: Tingwall**
Extent within 15km of proposals	Approximately 3km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this LCA would be directly affected by the proposed development. However, some of this LCA would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Sheltered and fertile improved inland valleys contrasting with surrounding moorland; and • attractive contained views north and south along valleys.
Scenic Quality	Medium with areas of Medium to High.
Value	Medium to High
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is High because of the related small scale complex nature of the LCA.
Magnitude of changes	The main part of the Tingwall valley would be affected by indirect change, although this is likely to be fairly small in scale and at a minimum distance of approximately 11km. Due to the existing turbines on the hills above the Tingwall valley and the distance to the proposals, this area of the LCA is unlikely to be significantly affected. Magnitude of change would therefore be Low
Impact Assessment	**Slight to Moderate** and **Indirect** during operation.**(NOT SIGNIFICANT)**

Table 8.6.13: D2 – Crofting and Grazing Inland Valleys: Cuckron/Unst

Local Character Area	**D2 – Crofting and Grazing Inland Valleys**
Extent within 15km of proposals	Approximately 4km² of this LCA lies within the 15km detailed study area; this is the Cuckron area and hence the Unst area is not considered further in this assessment.

Extent of area potentially affected by proposals	No part of this LCA would be directly affected However the majority of the Cuckron area would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Sheltered and fertile improved inland valley with distinct crofting character.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	Sensitivity to change for this LCA would be High because of the open, small scale rural nature of the LCA, likely to be dominated by new development.
Magnitude of changes	This LCA would experience potential indirect changes as a result of the proposed development which is at a minimum distance of approximately 4km to the north. The change would appear as a minor element within the wider landscape. However the orientation and outlook of this landscape is generally focused to the north and south by landform therefore increasing the degree of change. especially for northern and more elevated parts of the character area and within the open moorland where the scale of the proposals may reduce the effect of the contrast between this and the character area. Magnitude of change – Medium to High.
Impact Assessment	**Moderate to Substantial** and **Indirect** during construction and operation. **(SIGNIFICANT)**

Table 8.6.14: D3 – Crofting and Grazing Isolated Valleys: Wester Quarff and Dale

Local Character Area	**D3 – Crofting and Grazing Isolated Valleys: Wester Quarff and Dale**
Extent within 15km of proposals	Approximately 2.5km² of this LCA, the Dale area near Mossbank, is within the 15km detailed study area. The Wester Quarff area of this LCA is outwith the detailed study area and is not considered further in this assessment.
Extent of area potentially affected by proposals	None of the LCA would be directly affected by the proposed wind farm but all parts of the Dale area may be indirectly affected
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Small scale diversity of colour and texture as a result of different land uses and land management techniques.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	Because of the open, small scale rural nature of this LCA, it would be potentially dominated by the new development. However the close proximity of Sullom Voe Oil terminal and other industrial components and land uses adjacent to this area reduces the sensitivity to change of the type proposed. Sensitivity to change would therefore be Medium.
Magnitude of changes	Change to the Dale section of this landscape character area would be widespread, although indirect. The proposed development is in close proximity to this LCA, (approximately 1km at its closest) and therefore indirect change is likely to be very influential. The scale of the turbines would be important in the smaller scale of the character area. Magnitude of change – Medium.
Impact Assessment	**Moderate** and **Indirect** in construction and operation. **(SIGNIFICANT)**

Table 8.6.15: D4 (A) – Peatland and Moorland Inland Valleys; Kergord and Petta Dale

Local Character Area	D4 (A)– Peatland and Moorland Inland Valleys; Kergord and Petta Dale
Extent within 15km of proposals	This area consists of two parallel valleys; Kergord and Petta Dale; separated by the Mid-Kame Ridge. Approximately 30km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	Both the valleys would potentially be directly and indirectly affected by the proposed development as turbines are proposed along the Mid-Kame Ridge and immediately to the east and west.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Large scale landscape with subtle colours and variations; • Mid-Kame Ridge; and • extensive views along valleys but with few significant features.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Low to Medium because of the open and large-scale character. Sensitivity is reduced slightly because of the main roads present within these valleys.
Magnitude of changes	The turbines would be very noticeable on the Mid - Kame Ridge, creating a linear landscape feature in its own right. Further turbines to the east and west within adjacent character areas would give rise to indirect change. Beyond the construction compound and very short section of track to the north the peripheral areas would be indirectly affected by turbines and tracks in the distance from some elevated parts. Magnitude of change – High
Impact Assessment	**Substantial** and both **Direct** and **Indirect** during construction and operation. **(SIGNIFICANT)**

Table 8.6.16: D4 (B) – Peatland and Moorland Inland Valleys; Veensgarth and Housetter

Local Character Area	D4 (B)– Peatland and Moorland Inland Valleys; Veensgarth and Housetter
Extent within 15km of proposals	This area consists of two small valleys on the periphery of the detailed study area; Veensgarth and Housetter. Approximately 5km² of this LCA lies within the 15km detailed study area.
Extent of area potentially affected by proposals	Both the valleys would potentially be directly and indirectly affected by the proposed development as turbines are proposed along the Mid-Kame Ridge and immediately to the east and west.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Large scale landscape with subtle colours and variations; and • extensive views along valleys towards the sea but with few significant features.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Low to Medium because of the open and large-scale character of the valleys and the main roads present within them.
Magnitude of changes	Indirect impacts from a distance upon some elevated parts of the valleys. Magnitude of change – Negligible to Low.
Impact Assessment	**Slight** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.17: E1 – Farmed Land

Local Character Area	E1 – Farmed Land
Extent within 15km of proposals	Approximately 5km² of this LCA is within the 15km detailed study area, to the south of Aith.
Extent of area potentially affected by proposals	This area would not be directly affected by the proposals. However much of the area would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Rich mosaic of quality grazing land and arable fields giving rise to a range of colours and textures.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	This is a relatively small scale, populated and working landscape. Sensitivity to change of the type proposed for this LCA would therefore be Medium.
Magnitude of changes	Change to this LCA would be fairly widespread, although indirect. The proposed development is fairly close to this LCA. Magnitude of change – Medium
Impact Assessment	**Moderate** and **Indirect** during construction and operation. **(SIGNIFICANT)**

Table 8.6.18: E2 – South Mainland Scattered Settlement and Grazing Lands

Local Character Area	E2 – South Mainland Scattered Settlement and Grazing Lands
Extent within 15km of proposals	Approximately 2.5km² of this LCA is within the 15km detailed study area.
Extent of area potentially affected by proposals	This area would not be directly affected by the proposal but there may be very limited, isolated areas of higher ground that would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Varying landscape with extensive settlement, upland backdrop and coastal outlook.
Scenic Quality	Medium
Value	Low
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Low to Medium as it embodies small scale landscape features with extensive rural residences.
Magnitude of changes	Only very small isolated areas at the extreme north of this character area would potentially be indirectly affected by the proposed development. Indirect changes to these areas are likely to be limited and distant (approximately 15km) and therefore appear as only a very small element in the overall landscape. As such magnitude of change for this area as a whole would be minimal. Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.19: E3 – Coastal Crofting and Grazing Lands

Local Character Area	E3 – Coastal Crofting and Grazing Lands
Extent within 15km of proposals	This LCA is scattered in numerous coastal locations around the Shetland archipelago. Approximately 25km² in total is located within the 15km detailed study area, to the east of the proposals, predominantly on Bressay, Whalsay and the eastern coast of the Nesting area.
Extent of area potentially affected by proposals	Only one small area where an access track and borrow pit are proposed would be directly affected. Most other areas of this LCA within the 15km boundary would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Relatively undeveloped landscape maintaining the traditional pattern of crofting settlements; and • subdued colours of vegetation contrasting with seascape.
Scenic Quality	Medium to High
Value	Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is High because of the small scale, rural settlement pattern, not in keeping with large scale development.
Magnitude of changes	A small section of one area (adjacent to Hill of Skellister) would be crossed by an access track, of approximately 500m in length and may include a borrow pit. These have been located in an existing valley to minimise their impact on the wider area. Beyond this small section impacts would be indirect. Elevated and west facing coasts and slopes would be likely to receive increased indirect change. Western and northern parts of Bressay and Whalsay are likely to receive the most noticeable changes. Areas at Nesting would be closer to the proposed development but would be likely to receive lesser change as a result of interim landform. The main focus of this landscape is towards the coast, away from the proposals and therefore level of change would be lessened. Magnitude of change – Low.
Impact Assessment	**Moderate** and **Indirect** during construction and operation. **(SIGNIFICANT)**

Table 8.6.20: E4 – Unst and West Mainland Coastal Crofting

Local Character Area	E4 – Unst and West Mainland Coastal Crofting
Extent within 15km of proposals	Approximately 10km² of this LCA, the areas in the West Mainland, lies within the 15km boundary. Unst is outwith the detailed study area.
Extent of area potentially affected by proposals	No part of the area within the 15km detailed study area would be directly affected by the proposals but around half may be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Well managed good quality grazing land with a fine smooth texture and even rich green colour; and • contrast of ordered landscape with an open, uniform backdrop and seascape.
Scenic Quality	Medium to High
Value	High
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Medium to High because of the smaller scale rolling nature of the landscape.

Magnitude of changes	Changes to this LCA would be indirect and would generally be limited to eastern and northern facing slopes and isolated areas of high ground. The proposed development would be distant, between 10km and 15km from this LCA, and would therefore appear as only a small element within the wider landscape. Furthermore the landscape focus is predominantly coastal in aspect, orientated towards the NSA. Magnitude of change – Low
Impact Assessment	**Slight** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.21: E5 – West Mainland Lowland Crofting

Local Character Area	**E5 – West Mainland Lowland Crofting**
Extent within 15km of proposals	**Approximately 20km² of this LCA lies within the 15km boundary.**
Extent of area potentially affected by proposals	None of the areas within the 15km boundary would be directly affected by the proposals. However, around half of the area would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Distinctive broad rolling, grass covered landscape; • simple coherent landscape with few scattered dwellings; and • small areas of crofting, contrasting with wider grazing landscape.
Scenic Quality	Medium or Medium to High
Value	Medium to High
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Medium to High because it is rural and open in character with extensive views from elevated areas.
Magnitude of changes	No part of the landscape would be directly affected by the proposals and in general indirect changes would be limited to elevated areas and eastern facing slopes.. Elevated areas around Effirth and Sefster would receive greater levels of change, although the proposals would appear as only a small element in the wider landscape. In general change would be unlikely to affect the key landscape characteristics. Magnitude of change –Low
Impact Assessment	**Slight to Moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.22: F1 – Developed Areas

Local Character Area	**F1 – Developed Areas**
Extent within 15km of proposals	Approximately 10km² of this LCA is located within the 15km detailed study area; the main port and commercial area of Lerwick and the area surrounding the Sullom Voe oil terminal.
Extent of area potentially affected by proposals	Neither of the areas would be directly affected by the proposal. All of the Sullom Voe area and around a quarter of the Lerwick area would be likely to be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Attractive historical and cultural areas of Lerwick.
Scenic Quality	Low to Medium – locally Low
Value	Low – locally High in historic areas of Lerwick

Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Low because of the low scenic quality and value, the developed, sometimes industrial nature of the LCA which can more easily accommodate change associated with further development.
Magnitude of changes	Neither of the two areas would be directly affected by the proposals but both would receive indirect impacts. Changes to the Lerwick area would be very limited due to distance from the proposals and interim landform. The historic areas would be largely unaffected. The Sullom Voe area would potentially receive more significant change largely due to the close proximity of the development (approximately 1km). Magnitude of change – Medium
Impact Assessment	**Slight** and **Indirect** during construction and operation **(NOT SIGNIFICANT)**

Table 8.6.23: F2 – Nucleated Settlements

Local Character Area	**F2 – Nucleated Settlements**
Extent within 15km of proposals	This LCA is found in a number of places scattered throughout the archipelago where population and development are concentrated into small settlements. Approximately 30km² of the total area is within the 15km detailed study area.
Extent of area potentially affected by proposals	None of the areas within the 15km detailed study area would be directly affected. However, almost all areas would be indirectly affected to some degree.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Range of colours and textures provided by dwellings, harbours and boats and contrasting surrounding grassland and moorland; small scale; complex.
Scenic Quality	Medium to High with localised areas of Medium or Low to Medium
Value	Low to Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is generally Medium because despite the small scale and complex nature of the LCA, frequent foreground detracting development, (e.g., poor quality and disused buildings, garages, shops etc.) reduce potential sensitivity, with the exception of the old part of Voe which is High sensitivity (although subject to a low degree of change).
Magnitude of changes	In general these are low coastal areas and indirect change would be limited. The exception to this would be the Mulla, Tagon, and Hillside areas north of Voe and the northern part of Bressay and some other isolated and elevated areas in individual settlements where there would be more extensive change. Voe is likely to be the most significant of these areas with the proposed development being located on three sides. However, this area is relatively enclosed by landform reducing potential change. Magnitude of change – Generally Low, locally Medium in areas referred to above.
Impact Assessment	**Slight to Moderate** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.24: F3 – Farmed Land

Local Character Area	F3 – Farmed Land
Extent within 15km of proposals	Approximately 8km² of this LCA is located within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this LCA would be directly affected by the proposal. However, most of the area would be potentially affected indirectly.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Varied texture and range of colour provided by mosaic of grazing land and arable fields which contrast with surroundings of enclosed water and uplands.
Scenic Quality	Medium
Value	Medium
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Medium. This LCA is a more small scale, populated area with a greater level of development and human activity than that of the surrounding moorland LCAs.
Magnitude of changes	Changes to this LCA would be relatively widespread, although indirect. In general changes would be limited and fairly distant (approximately 8km) and for most areas the proposals would not be a feature of the main focus of views. The key distinctive characteristics of the landscape would not be significantly changed. Magnitude of change –Low
Impact Assessment	**Slight** and **Indirect** during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.25: F5 – Scattered Settlements/Crofting and Grazing Land

Local Character Area	F5 – Scattered Settlements/Crofting and Grazing Land
Extent within 15km of proposals	This LCA is located in numerous coastal locations throughout the Shetland Isles. In total approximately 80km² of this LCA is located within the 15km detailed study area.
Extent of area potentially affected by proposals	One turbine and a short section of track may be located within this LCA, directly affecting the area of North Nesting, close to Laxfirth and the south west point of Dury Voe. Most other areas would receive potential indirect impacts.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Subtle mosaic of colours and textures; • attractive coastal views; and • coherent relationship between landscape elements forming varied, well balanced landscape.
Scenic Quality	Medium to High – locally High or Medium
Value	Medium to High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is Medium to High because this is an open and attractive rural landscape with extensive views across water which are a key feature of the LCA.

Magnitude of changes	Changes to this LCA would predominantly be indirect. In one location changes would consist of the introduction and construction of a turbine and a section of track to a small scale landscape. Due to the scattered nature of this LCA, in numerous different locations, the extent of the change would vary considerably. Many areas, particularly on the outer extremities of the islands such as the southwest mainland, northwest mainland and eastern coast of Yell, would receive only distant, sporadic indirect change, generally limited to higher ground. Other areas, particularly on inward facing coasts, would be affected by more extensive change. The greatest level of change would be potentially obtained from areas near Haggrister and Sullom, the eastern facing coast of Muckle Roe, the southern shore of Yell and the area between Hamera Head and Laxo. Magnitude of change – varies according to location, between Low to Medium – Medium- Medium to High
Impact Assessment	Generally **Moderate** and **Indirect** but for selected areas detailed above **Moderate to Substantial** and both **Direct** and **Indirect** during construction and operation. **(SIGNIFICANT)**

Table 8.6.26: F6 – Dales Voe and Colla Firth

Local Character Area	**F6 – Dales Voe and Colla Firth**
Extent within 15km of proposals	This LCA is located to the east and north of the proposals on the north east mainland. Approximately 10km² of the character area is within the 15km detailed study area.
Extent of area potentially affected by proposals	No part of this character area would be directly affected by the proposals. However, west–facing slopes and more elevated sections to the south of Dales Voe would be indirectly affected.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Well managed patchwork of green fields at inland points of the voes contrasting with muted browns of the adjacent steep side slopes; and • dramatic views associated with combinations of long inland voes and steep, high side slopes, visually distinct from all other areas.
Scenic Quality	Medium to High or High
Value	Medium to High.
Sensitivity to change proposed	Sensitivity to change of the type proposed is High due to the distinctive and dramatic fjord-like landscape combined with contrasting smaller- scale valley floor features.
Magnitude of changes	Changes to this landscape would be indirect. The nature of this landscape, with steep sided valleys combined with reduced exposure due to primary mitigation results in reduced influence from potential indirect change. Further to this the focus of the landscape is likely to be more commonly funnelled seaward by the dramatic landform. Magnitude of change – Low
Impact Assessment	**Slight to Moderate** and **Indirect** both during construction and operation. **(NOT SIGNIFICANT)**

Table 8.6.27: G – Coastal Edge

Local Character Area	**G – Coastal Edge**
Extent within 15km of proposals	This LCA is scattered throughout the Shetland archipelago on the outer coastal extremities. Approximately 12km² of this LCA is located within the 15km detailed study area.

Extent of area potentially affected by proposals	None of these areas would be directly affected by the proposals and very few areas would have the potential to be indirectly affected as they are all located on the outermost extremities of the islands and generally screened from the proposals by landform.
Relevant landscape characteristics	Key characteristics likely to be influenced by the proposals include: • Dramatic variety of coastal features including cliffs, sea stacks, natural arches and sandy beaches; and • inspiring landscape formed by combination of coastal features and sea.
Scenic Quality	Medium to High or High
Value	High.
Sensitivity to change proposed	Sensitivity to change of the type proposed for this LCA is High as this is a highly scenic area with little existing human influence or man made features.
Magnitude of changes	Indirect changes to this landscape would be very limited as a result of screening provided by interim landform. Occasional elevated areas would potentially receive indirect change but are distant from the proposals resulting in a further reduction of the degree of change. Magnitude of change – Negligible
Impact Assessment	**Negligible** and **Indirect** in construction and operation. **(NOT SIGNIFICANT)**

8.7 MITIGATION

Key landscape and visual constraints and development principles where identified at an early stage of the project. These where utilised at the design stage to help reduce and minimise potential impacts on the landscape character and visual amenity of the study area and are referred to in this Chapter as primary mitigation and these measures have been taken account of in the landscape and visual assessments. It is also the intention, in due course, to implement a strategy of landscape management and habitat creation to help reduce and offset potential impacts. These secondary mitigation measures are dependant on permission and co-operation of local landowners, crofters and tenants. See Chapter 4 for details of design development (primary mitigation) and Chapter 9 for a description of potential secondary Landscape and Visual mitigation. As secondary mitigation measures have yet to be finalised and agreed they have not been included within this assessment.

8.8 SUMMARY AND CONCLUSIONS; LANDSCAPE CHARACTER

The impacts on designated sites and local landscape character areas are summarised in tables 8.7 and 8.8 below. Significant impacts are considered to be those assessed as moderate and above.

TABLE 8.7 Summary of assessment of impacts on designated sites

CHARACTER ZONE	CONSTRUCTION							OPERATION						
	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial
National Scenic Areas														
Dunrossness and the Deeps			X	X						X	X			
Muckle Roe	X							X						
Esha Ness			X	X						X	X			
Uyea Isle and Fethaland	X							X						
Inventory of Gardens and Designed Landscapes														
Belmont House	X							X						
Brough Lodge	X							X						
Gardie House	X							X						
Lunna House				X							X			

TABLE 8.8 Summary of assessment of impacts on local character zones

CHARACTER ZONE	CONSTRUCTION							OPERATION						
(within the detailed study area)	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial
A1 South Mainland Spine			X							X				
A2 East and West Kame						X							X	
A3 Ronas Hill				X							X			
A5 Sandness Hill & Ward of Bressay/Noss			X							X				
B1 Yell Peatland		X							X					

CHARACTER ZONE	CONSTRUCTION							OPERATION						
(within the detailed study area)	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial
B2 Rounded Moorland Hills			X	X						X	X			
B4 South Mainland Coastal Moorland	X							X						
C1 West Mainland & Northmavine: Muckle Roe & Mangaster/Nibon Areas				X	X						X	X		
C2 Uyea, Braewick, Tingon & North Roe				X							X			
C3 Lunna Ness & Dragon Ness					X	X						X	X	
D1a Farmed & Settled Inland Valleys: Weisdale						X						X		
D1b Farmed & Settled Inland Valleys: Tingwall				X							X			
D2 Crofting & Grazing Inland Valleys: Cuckron						X							X	
D3 Crofting & Grazing Isolated Valleys: (Wester Quarff) and Dale					X							X		
D4a Peatland & Moorland Inland Valleys: Kergord and Petta Dale							X							X
D4b Peatland & Moorland Inland Valleys: Veensgarth and Housetter			X							X				
E1 Farmed Land					X							X		
E2 South Mainland Scattered Settlement & Grazing Lands	X							X						
E3 Coastal Crofting & Grazing Lands					X							X		
E4 West Mainland Coastal Crofting			X							X				
E5 West Mainland Lowland Crofting				X							X			
F1 Developed Areas			X							X				

CHARACTER ZONE	CONSTRUCTION							OPERATION						
(within the detailed study area)	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial	Negligible	Negligible/ Slight	Slight	Slight/ Moderate	Moderate	Moderate/ Substantial	Substantial
F2 Nucleated Settlements				X							X			
F3 Farmed Land			X							X				
F5 Scattered Settlements/Crofting & Grazing Land					X	X						X	X	
F6 Dales Voe and Colla Firth				X							X			
G Coastal Edge	X							X						

The impacts of the proposed development upon the landscape character of the study area can be summarised as follows:

- **No Significant Impact** on designated sites such as the National Scenic Areas or Gardens and Designed Landscapes.
- **Significant Impact** on a number of local landscape character areas within 15km of the proposed development. In the East and West Kame landscape area, where a majority of the proposals would be situated,(despite their low sensitivity to development of this nature), the magnitude of direct change would be such that moderate to substantial adverse landscape impacts would be experienced. Where impacts are indirect, impacts in this character area would be reduced to moderate, but nevertheless still significant. Significant impacts would also be experienced by the part of the Peatland and Moorland Inland Valleys landscape character area where the proposed development would be located (Pettadale and Kergord).Sensitivity to change here would be low to moderate, but again, the degree of change would be high, resulting in both direct and indirect substantial impacts. Elsewhere in the detailed study area: moderate direct and indirect adverse landscape impacts would be experienced by Coastal Crofting and Grazing Lands and the Scattered Settlements/ Crofting and Grazing Land landscape character areas; and indirect adverse landscape impacts ranging from moderate to moderate - substantial would be experienced in the Lunna Ness and Dragon Ness, part of the Farmed and Settled Inland Valleys (Weisdale), the Crofting and Grazing Inland Valleys: Cuckron, the Crofting and Grazing Isolated Valleys: Wester Quarff and Dale (Dale), and the Farmed Land (E1), local character areas. There would also be localised areas of moderate and therefore significant, impact upon West Mainland and Northmavine: Muckle Roe and Mangaster/Nibon landscape character area.

- **No Significant Impact** on just under two-thirds of the local landscape character areas within the detailed study area.

The above table and summary confirms that moderate to substantial and therefore significant landscape impacts would result from direct change, through the introduction of turbines, tracks and borrow pits, primarily within the East and West Kame landscape character area (LCA), the largest LCA of the study area. Some of the Peatland and Moorland Inland Valleys LCA where the proposed development would be located (Pettadale and Kergord) would also receive some direct, substantial and therefore significant, impacts. In addition, the coastal Crofting and Grazing Lands and the Scattered Settlements/ Crofting and Grazing Land LCAs would receive some very limited direct and significant impacts.

In addition to those areas receiving significant direct impacts a number of LCAs would receive significant indirect impacts as a result of intervisibility with the proposed development. These significant indirect impacts are generally limited to those areas in close proximity to the proposed development where intervisibility has the potential to have a greater effect on the setting and hence character, of a landscape.

However, there are a number of areas which, although in close proximity to the proposed development, have a reduced sensitivity to change and/or a reduced magnitude of change, due to the nature and context of the local landscape and landform, resulting in a reduced level of impact. This is particularly evident in the Developed Areas LCA, where the presence of existing development such as Sullom Voe Oil terminal reduces the sensitivity of the landscape to change of the type proposed and in a number of LCAs in the western mainland, where the partial screening effect of the foreground landform reduces magnitude of change and hence reduces and limits indirect impacts.

To conclude, all significant landscape effects would be found where direct change or large scale indirect changes (generally within 15km of the proposals) are predicted. The wider study area beyond 15km from the periphery of the proposals and all designated/ historic and designed landscapes would not receive any significant landscape effects, either during construction or operation.

8.9 REFERENCES

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APPENDIX 4.7.2: EXCERPT FROM 2009 ES CHAPTER 9

9. VISUAL IMPACT

9.1 INTRODUCTION

9.1.1 General

This Chapter of the Environmental Statement (ES) addresses issues relating to the potential impacts upon the visual amenity of the study area likely to result from the proposals. The assessment has been undertaken by ASH design+assessment.

Included with this chapter at Section 9.9 is an assessment of shadow flicker effects. This part of the assessment has been carried out by Airtricity. Because it is a separate, but related, assessment, it is dealt with in a separate section at the end of this chapter.

9.1.2 Related Subjects

Landscape character and visual impact assessment, although closely related to one another, have been considered separately in this document for reasons of clarity and robustness. However, in line with best practice, cumulative landscape and visual impacts are assessed together, towards the end of this Chapter. Other related subjects include recreation and tourism, ecology and cultural heritage. Reference is made to these topics as part of the assessment. However, consideration of them here is limited to the extent to which they influence the visual amenity of the proposed development site and the wider area. Impacts and their effects that are specific to these topics are addressed in the relevant sections of the Environmental Statement:

- Landscape Character Assessment – Chapter 8
- Cumulative Landscape and Visual Assessment – Chapter 9, Section 9.7
- Ecology – Chapter 10
- Cultural Heritage – Chapter 13
- Recreation and Tourism – Chapter 19

9.1.3 Design Development

The design of the proposed development has undergone a series of iterations which have been informed by many different constraints and considerations, of which visibility and visual impact where important elements. See Chapter 3, Site Selection and Chapter 4, Development Description for more details.

9.2 SCOPE OF ASSESSMENT

9.2.1 Project Interactions

Development of a wind farm would introduce a number of large or extensive elements, including turbines and tracks, which would be present in the landscape, and which would be visible from outwith the site.

9.2.2 Study Area

The proposed site is located in the centre of mainland Shetland, approximately 15km north of Lerwick. The proposed development consists of four areas which originally comprised the proposed Muckla Moor Wind Farm and the smaller Viking Energy Limited (VEL) Wind Farm. The total study area for the landscape and visual topic at scoping was taken to be an area within 30km of the periphery of the wind farm. For the purposes of this assessment the periphery of the wind farm is taken as a line drawn around the outer turbines, rather than the planning application boundary.

The study area defined for the visual assessment in this chapter extends for 35km from the perimeter of the development site (i.e. from the outer turbines) in accordance with current Best Practice as set out in the guidelines by Scottish Natural Heritage (SNH)[1] and is shown on Figure 9.1.

The 35km study area corresponds to that used for the landscape character assessment detailed in Chapter 8. This allows for assessment of the visual relationship between the proposed development and the wider visual resource of the study area in terms of potential detriment to the value of the visual amenity.

9.2.3 Scoping and Consultation

The consultation responses to the scoping report of particular relevance to landscape character and visual impact are summarised in Table 9.1

Table 9.1 Landscape Character and Visual Impact Issues Raised During Scoping

Consultee	Response	Action
Scottish Government	The Scottish Government response summarised many of the comments received from their consultees and other bodies likely to be concerned by the proposed development. The following are the most relevant to the landscape and visual assessment: -Consideration of and reference to various Planning Policies, Guidance and Advice Notes and the Shetland Islands Development Plans is required. -The response also refers to various SNH guidance notes which should be taken into account.	A review of relevant planning policies and guidance is included in section 8.3 and taken into account in EIA methodology (sections 8.4 & 9.4)

[1] University of Newcastle (2002) Visual Assessment of Windfarms: Best Practice, Scottish Natural Heritage.

Consultee	Response	Action
Shetland Islands Council (SIC)	-The Council requires all interlinked elements of construction activity to be assessed together. -The impacts of tracks and borrow pits should be taken into account when determining impacts. -The effects of decommissioning should be assessed and restoration proposals should be outlined. -It is important to consider effects of the 4 quadrants at each property.	Taken into account in EIA methodology (sections 8.4 & 9.4)
	-The council states that locations of viewpoints have already been discussed.	Appendix 9.1 outlines the process of viewpoint selection. See Figure 9.2.1 for location of viewpoints and Appendix 9.2 for detailed visual assessment of each.
	-Direct and indirect effects of the proposals on all designated sites should be clearly set out.	Effects on designated sites have been addressed in section 8.5.5 & 8.6.3
	-Cumulative impact assessment to include the interconnector for the sub-sea link	Cumulative effects on all existing and proposed wind farms and the converter station have been addressed in section 9.8
Scottish Natural Heritage (SNH)	-The EIA should consider the impact of grid connection infrastructure directly associated with the proposed development. -The effects of the development on the landscape and visual amenity are a high priority for consideration in the EIA. -Construction impacts should be taken into consideration when assessing impacts.	Taken into account in EIA methodology (sections 8.4 & 9.4)
	-There are a number of properties listed in the Inventory of Gardens and Designed Landscape within the study area	Designed Landscapes reviewed in section 8.5.5
Royal Society for the Protection of Birds (RSPB)	-Tracks and borrow pits should be assessed as having likely significant effects on the landscape and crane pads and underground cables as having possible significant effects on the landscape. -Construction should be phased to avoid large scale disturbance across the site	Taken into consideration in the assessment
RFACFS (now Architecture & Design Scotland)	-Design issues are addressed at an early stage and that reference should be made to SPP1: The Planning System; 'Designing Places' – a statement for Scotland used as material consideration in determining planning applications; and 'A Policy on Architecture For Scotland' which recognises the importance and value of good design in the built environment. -The routing of tracks and design of control buildings should also be discussed and, unless the site boundaries are clearly defined by the landscape, the layout may relate to the landscape in a	Taken into consideration in the turbine and tracks layout design and in the assessment. See Chapter 4 for details of design development.

Consultee	Response	Action
	completely arbitrary way. -The wind farm location should be considered and determine whether it is a sensible location in relation to wind, access to the grid and the character of the landscape.	

9.2.4 Effects to be Assessed

Tables 9.2 and 9.3 present the potential effects identified in scoping and form the basis of this assessment.

Table 9.2 Potential Construction Effects - Landscape Character and Visual Impact

Construction Effects	Impact	Potential Effects on Receptors	Specific Receptor Identified in Scoping
Mobile plant operations; Borrow pit operations; Traffic; Cable-Laying; Construction Compounds	Presence of machinery in landscape and views; visible disturbance of vegetation; presence of trenches or compounds in landscape and views	Temporary effects on landscape character; Temporary effects on visual amenity	None

Possible secondary effects upon recreation and tourism within the study area were identified. These are reviewed in Chapter 19.

In light of the preliminary scoping and subsequent consultee responses the following potential issues have been assessed:

- The impact of the proposed turbines, associated structures and required access tracks on the visual amenity of the study area.

Table 9.3 Potential Ongoing (Operational) Effects - Landscape Character and Visual Impact

Ongoing Effects	Impact	Potential Effects on Receptors	Specific Receptor Identified in Scoping
Likely Significant Effects	Presence of turbines in landscape and views; Presence of tracks in landscape and views	Effect on landscape character; Effect on visual amenity	None
Possibly Significant Effects	Presence of sub-station/ control building in landscape views; Change of landform and landcover by borrow-pits	Effect on landscape character; Effect on visual amenity	None

Effects of Unknown Significance	Modification to Layout and appearance of public roads	Effect on landscape character; Effect on visual amenity	None

9.2.5 Effects Scoped Out of Assessment

Effects arising from the process of decommissioning have been scoped out since they are of a similar nature to construction issues, but of a smaller scale and shorter duration.

9.3 POLICY CONTEXT

Statutes and national planning policy make no direct provision for the protection or conservation of specific views. They are, however, an implicit part of the values and qualities recognised in broader landscape designations that seek to protect areas of high scenic quality. Policy with broad relation to landscape and visual issues has been outlined in Chapter 8, Landscape Character.

9.4 METHODOLOGY

9.4.1 Overview

The following paragraphs outline the method adopted for the visual impact assessment.

The assessment has been prepared with reference to the Guidelines for Landscape and Visual Impact Assessment (GLVIA), Second Edition, published by the Landscape Institute and the Institute of Environmental Assessment in 2002. The guidelines suggest that visual impacts should be assessed from a clear understanding of the development proposed and any related landscape mitigation measures. They call for an understanding of the visual form of the existing landscape, its quality and sensitivity to change taking into account the nature of the development. They further call for an evaluation of the sensitivity of potential visual receptors (viewers) and of the magnitude of change likely to result from the implementation and use of the development.

Reference has also been made to the following guidelines:

- Guidelines on the Environmental Impacts of Windfarms & Small-Scale Hydroelectric Schemes (SNH February 2001);
- Assessment of Cumulative Landscape & Visual Impacts Arising from Wind Farm Developments (SNH March 2002);
- Visual Assessment of Windfarms: Best Practice (prepared by University of Newcastle for SNH, 2002);
- Visual Representation of Windfarms Good Practice Guidance (SNH October 2006); and
- Basic Principles of Landscape and Visual Impact Assessment for Sponsors of Development (Shetland Islands Council, 2006).

The assessment has involved five key stages:

- Preliminary assessment and scoping;
- determination of the main areas where impacts would occur as a result of the location and orientation of the receptor, and establishment of the baseline conditions relating to the visual context of the study area and the location and sensitivity of potential visual receptors;
- evaluation of the potential impacts anticipated to result from the introduction of the development into the baseline context;
- assessment of the effects of the anticipated impacts based on magnitude and sensitivity to change taking into account mitigation measures related to site selection and site planning;
- description of the anticipated effects and their significance.

Appreciation of the baseline conditions, evaluation of the predicted impacts and assessment of effects related to predicted impacts have been undertaken in accordance with guidelines in GLVIA, taking cognisance of SNH recommendations.

9.4.2 Baseline Assessment

(a) **Desk Surveys**

The following specific desk-based tasks have been undertaken:

- Consultation with Scottish Natural Heritage and Shetland Islands Council regarding key views and viewing locations;
- identification of the Zone of Theoretical Visibility (visual envelope) for the proposed development;
- identification and field assessment of potential receptors within the visual envelope; and
- appreciation of the nature of existing views experienced by the identified receptors.

(b) **Field Survey Techniques**

An initial site appraisal of potential impacts upon visual amenity was carried out in September 2006 by a team of four qualified and experienced landscape architects. A further site appraisal was carried out in August 2008 to verify the initial appraisal. Site recording involved the completion of standardised recording forms and annotation of 1:50,000 Ordnance Survey plans, supported by a photographic record of views from key receptor locations.

9.4.3 Effects Evaluation

(a) **Identification of the Zone of Theoretical Visibility**

The Zone of Theoretical Visibility (ZTV) indicates those areas of land where the proposed wind farm might appear as part of a view. The ZTV provides a means of identifying

potential receptors (viewers) in order that impact assessments can be undertaken. The envelope is not representative of visual impact in itself nor does the presence of a receptor within the boundary indicate that the development would necessarily appear in views currently experienced by that receptor.

ZTVs have been prepared using the *Resoft Windfarm* (Version 4) programme that analyses a computer based model that has landform as the key determinant of availability or obstruction of view. The landform model is based on contours at 10m intervals derived from 1:50,000 Ordnance Survey Land-Form tiles.

As the proposals have developed, further ZTVs specific to the proposed development throughout the design stages have been generated. These ZTVs are based on the distance of 35km from the periphery of the development as required by SNH guidelines. Figure 9.1 shows a ZTV covering an area of 35km from the development periphery, with proposed turbines of 145m blade tip height. Colour coding was used to indicate where 1-37, 38-75, 76-112 and 113-150 turbines potentially could be visible.

(b) **Photomontages and Wireframes**

Figures 9.3.1 – 9.3.43 show panoramic views and/or wireframes from a series of viewpoints (previously agreed with SNH and Shetland Islands Council – See Appendix 9.2: Viewpoint Selection Criteria) looking towards the proposed development. Where photomontages are shown, these have been superimposed with the proposed turbines as viewed from that location, based on "wireframe" diagrams generated from "Resoft Windfarm" software. The photographs were taken from the stated grid reference using a digital camera at a focal length equivalent to a 50mm lens on a standard SLR camera. In line with current best practice, these are intended to be viewed from a distance of 300mm in order to replicate as closely as possible the view as seen from the viewpoint location.

(c) **Identification of Receptors**

For there to be a visual impact a viewer (receptor) is required. Receptors include people at residential properties, work places, recreational facilities and other outdoor sites used by the public, road users and pedestrians, who would be likely to experience a change in existing views as a result of the construction and operation of the proposed development.

The ZTV for the proposed development was reviewed to aid identification of potential receptors likely to be subject to impacts and these were then validated by site survey.

(d) **Appreciation of Existing Views**

This involved an initial desk based review of OS mapping to establish the wider context within which views initially appear to be set followed by site surveys to establish the form and nature of specific views and the role of the proposed development area in such views.

Site survey notes were recorded using a standardised checklist that included the following factors:

- Receptor type and number (for example dwelling, footpath, open space, school);
- existing view (composition and quality);
- distance of view;

- viewpoint position (e.g. elevated view looking down on the development or focussed view 'framing' the development);
- angle of view (oblique or face-on); and
- extent of view.

The evaluation involved the following tasks:

- Analysis of the sensitivity of receptors to the anticipated change in their view; and
- identification of the anticipated magnitude of change in existing views.

(e) **Receptor Sensitivity**

Sensitivity of a receptor to the proposed development considers the nature of the receptor; for example the inhabitants of a residential dwelling are generally considered more sensitive to change than workers in a factory unit. The importance of the view experienced by the receptor also contributes to an understanding of sensitivity to change; scenic quality and value of the view are therefore considered.

The sensitivity of a receptor depends on the nature of the receptor, and the importance to that receptor of the view being changed. In this assessment sensitivity is ranked as follows, adapted from GLVIA methodology:

High Sensitivity

- Dwellings where the changed landscape is an important element in the view; and
- walking routes, and vantage points where the changed landscape is an important element in the view.

Medium Sensitivity

- Dwellings where the changed landscape is a less important element in the view;
- walking routes and vantage points where the changed landscape is a less important element in the view;
- roads where the changed landscape is an important element in the view; and
- farm buildings not used as dwellings and industrial buildings where the changed landscape is an important element in the view.

Low Sensitivity

- Dwellings where the changed landscape is an unimportant element in the view;
- walking routes and vantage points where the changed landscape is an unimportant element in the view;
- roads where the changed landscape is a less important element in the view; and
- farm buildings not used as dwellings and industrial buildings where the changed landscape is a less important element in the view.

(f) **Magnitude of Change**

Magnitude of change considers the extent of development visible, the percentage of the existing view that would be occupied by the development, the influence of the development within the view and the viewing distance from the receptor to the development. This has involved a combination of site and desk-based analysis. On site, the percentage and elements of the development site potentially visible were recorded on the site survey sheets by the assessors. The analysis also involved the use of wireframe projections and draft photomontages to assist the assessors with the evaluation.

In the assessment of visual impact the magnitude of change is considered in terms of the type of change taking place in a view from a receptor and the degree of change which would take place in that view.

Magnitude of change is measured on the following scale, adapted from GLVIA methodology:

High Magnitude

Where the development would cause a significant change in the existing view.

Medium Magnitude

Where the development would cause a very noticeable change in the existing view.

Low Magnitude

Where the development would cause a noticeable change in the existing view.

Negligible

Where the development would cause no noticeable change in the existing view.

(g) **Assessment of Effects**

The main criteria used to evaluate visual impacts are centred on the extent to which the proposed development would modify established views. The assessment of effects is based on consideration of both sensitivity to change and magnitude of change taking into account mitigation measures associated with site selection and site planning.

Anticipated impacts are reported in terms of a descriptive scale ranging from substantial - moderate - slight adverse through negligible to an ascending scale of slight - moderate - substantial beneficial.

Taking these factors into account and using professional judgement, the final assessment adopts the following criteria to assess the level of visual impact:

Substantial Adverse (or Beneficial) Impact

Significant deterioration or improvement in the existing view.

Moderate Adverse (or Beneficial) Impact

Noticeable deterioration or improvement in the existing view.

Slight Adverse (or Beneficial) Impact

Barely noticeable deterioration or improvement in the existing view.

Negligible Impact

No discernable deterioration or improvement in the existing view.

All residential properties, public buildings, work spaces, recreational buildings, roads, walking routes and ferry routes within the study area potentially gaining a view of the proposals were assessed. The assessment has been made of the visual impacts which would occur as a result of the proposed development. The visual prominence of the turbines would vary according to weather conditions. Therefore the assessment has been carried out in accordance with best practice, by assuming the "worst case" scenario; that is, on a clear, bright day in winter, when visibility is unaffected by haze or foreground foliage. The assessment also takes into account changes in vehicle movement patterns and other proposal-related operations.

Finally the assessed effects relating to the various predicted impacts have been reviewed, taking into account primary mitigation measures, culminating in a statement of the predicted impacts and their significance on the existing visual context of the study area.

9.4.4 Limitations of Assessment

The Landscape Institute (2002) guidelines recommend that visual surveys should be carried out during both summer and winter months primarily to reflect the implications of the screening value of tree cover when deciduous species are in and out of leaf. In the case of this study there are few deciduous trees, except in sheltered locations, and consequently the worst-case situation has been adopted; that is, winter.

The assessment of visual effects has been undertaken from the nearest public road, footpath or open space to each property and assumptions have been made about the types of rooms, and about the types and importance of views obtained from these rooms. As the receptor is the occupier of the building, only buildings that are in use have been assessed. Derelict buildings or those considered to be unoccupied at the time of the survey were not assessed.

A blade-tip ZTV has been prepared and is shown on Figure 9.1. It shows those parts of the study area from where there may be views of the proposed development. The ZTV shows areas predicted to have views of the turbines based on bare ground analysis, i.e. the Ordnance Survey 1:50,000 digital terrain model, and shows areas from where any part of the turbines up to the 145m overall height may potentially be visible. The ZTV does not take into account local variations in topography, hedgerows, individual trees, walls or similar features, particularly those which are close to the viewpoint, that can alter the visual envelope locally. Therefore, while there is the potential to view the proposed development site from within the areas indicated, not all locations within the visual envelope would necessarily have a view of the proposed development. Nevertheless the

visual envelopes are valuable tools in both landscape character and visual impact assessment.

Photomontages are also a valuable tool in both landscape and visual assessment. A series of 43 viewpoints has been selected throughout the study area to represent a cross section of potential visibility of the proposals; See Appendix 9.2, Viewpoint Selection Criteria. These viewpoints include the larger settlements, main routes, important tourism and recreational locations and designated landscapes (including National Scenic Areas (NSAs) and Designed Landscapes). It was agreed with SNH and Shetland Islands Council Department of Planning that wireframe diagrams would be produced to demonstrate potential visibility of the proposed development from the more remote and distant locations.

9.5 VISUAL IMPACT BASELINE CONDITIONS

9.5.1 Overview

The baseline landscape and its broad visual context are described in Chapter 8, Landscape Character. Potential receptors have been identified through assessment of the ZTV for the proposed development (Figure 9.1). Potential visibility of these receptors has then been validated in the field.

In general, receptors within the study area would be residents of buildings and users of outdoor locations such as hilltops, walking routes and roads.

Receptor locations fall into the following categories:

- Those with distant views (15 km to 35 km from proposed development); and
- those with local views (15km or less from the proposed development).

9.5.2 Description of baseline conditions; potential views of proposed development

Exact locations of the viewpoints and receptors referred to below are shown on Figures 9.2.1 to 9.2.11.

(a) **Key Potential Distant Views (15 km to 35 km from development periphery)**

Views of the site from these potential receptors are distant and only possible under clear weather conditions.

Yell (north of Otterswick)

Receptors in this area are largely found along the coast and gain open panoramic views out across the sea. The majority of potential views are likely to be limited to south and west facing slopes and higher ground, primarily in locations without settlements. Properties in West Sandwick (viewpoint 24) would potentially obtain views of the proposals.

Unst (south)

Receptors in this area are very limited and are generally found along the coast, typically with open panoramic views out across the water. South-west facing slopes and some coastal areas, including Uyesound (viewpoint 20) and Belmont House (viewpoint 38) would potentially obtain views of the proposals.

Bluemull Sound Ferry (Yell – Unst – Fetlar)

Views of turbines are unlikely on the crossing between Yell and Unst and are likely to be limited to part of the journey to and from Fetlar.

Fetlar

The majority of receptors on Fetlar are found to the south, overlooking Wick of Tresta. Views tend to be open and panoramic, focussed across the bay and out to sea. Views of turbines are likely to be from south-west facing slopes and higher ground, predominantly in areas without settlement, but including Brough Lodge (viewpoint 37).

Out Skerries

The majority of receptors found on the Out Skerries are located around Skerries Bridge, which links the Islands of Bruray and Housay. Views from these receptors tend to be focussed across the inlets and out to sea. Views of turbines are likely to be limited to western parts of Housay, Grunay and Bruray, predominantly outwith the main settlement (viewpoint 26).

Whalsay (east of Skaw Voe)

Potential receptors within this area are limited to a small settlement, airfield and golf club. Views from these properties are generally elevated, open panoramas across the coast towards the sea to the north and south. Views of turbines are likely from some of this small area, except from a strip along the southern coast. There is very little settlement within this area.

Bressay (south of Leira Ness)

Potential receptors within this area of Bressay are generally found along the west coast and west facing slopes. Views are typically open and widespread, looking across the Sound of Bressay towards mainland Shetland. Views of turbines are limited to the north-west facing slopes, on which the majority of the settlements within this area are located, including Kirkabister Ness Lighthouse (viewpoint 31).

Isle of Noss

Potential receptors on the Isle of Noss are limited to a visitor centre and coastal footpaths. However, views are likely to be limited to the north coast and high points such as the Noup of Noss (viewpoint 4).

Mousa and Northlink Ferry

Potential receptors on Mousa are limited to coastal footpaths and the Broch of Mousa (the main attraction on the Island). The focus of views tends to be along the coast and back towards mainland Shetland. Views from the ferry are generally to the sides and rear with forward views limited. Views of turbines are likely to be limited to the northern coast and north facing slopes. Views of the proposals are unlikely to the south of Mid Field, including from the Broch of Mousa (viewpoint 32). Views from the Northlink Ferry (Aberdeen – Kirkwall – Lerwick) (viewpoint 30) are likely.

South Mainland Shetland (south of Brindister)

The majority of potential receptors in this area are found along the coast, and as such views tend to be open, panoramas out towards the sea or along the coast. Views of turbines are likely to be limited to higher ground, such as the Clift Hills and some coastal areas, particularly to the west. The majority of settlement in this area is found in the east and with only small areas gaining potential views of turbines, such as from viewpoint 27, settled areas are unlikely to be affected by the proposed development.

Burra and southern Trondra

Potential receptors tend to be found along the coast forming and therefore receive generally open views across the Sounds and Voes or out to sea. Views of turbines are likely to be limited to the north facing coast and slopes and higher ground, including the main settlement of Hamnavoe (viewpoint 21).

West Mainland Shetland (west of Stourbrough Hill/ Mid Walls)

Potential receptors in this area are predominantly limited to two areas, at Melby to the north and Mid Walls to the south. Both of these receptor clusters are close to the coast and as such views tend to be focused towards the sea. Views from some receptors are limited by the undulating nature of the landscape. Views of turbines are likely to be limited to the east and north-east facing slopes and higher ground. Visibility of the proposed wind farm is likely to be patchy due to the undulating nature of the ground in this area.

Papa Stour

The majority of potential receptors on Papa Stour are located to the eastern coast. Views from these tend to be open, panoramic and focused across the Sound of Papa towards mainland Shetland. Views of turbines are likely to be limited to east facing coast and slopes and higher ground. Views are also likely from the passenger ferry which runs between Papa Stour (viewpoint 16) and West Burrafirth on mainland Shetland.

North Mainland Shetland (Esha Ness and north of Ronas Hill)

Potential receptors within this area tend to be found along the south coast of Esha Ness and the east coast of North Roe. Views tend to be open, panoramic and focused out to sea or across Yell Sound. Views of turbines are likely to be limited to south and south-east facing slopes and higher ground and predominantly in areas without settlement, including

parts of the Esha Ness NSA (viewpoint 36) and the Uyea Isle and Fethaland NSA (viewpoint 35).

(b) **Key Potential Local Views (15 km or less from development periphery)**

Yell (south of Otterswick)

Like the northern area of Yell potential receptors in this area are also limited to coastal areas, particularly in the south. Views therefore tend to be open and panoramic, orientated towards the sea. Views of turbines from this area would be relatively widespread, increasing with elevation. The main settlements in this area are found along the southern coast and include Burravoe (viewpoint 19). The ferry connecting Yell to mainland Shetland is also within this area and is likely to gain views of the proposals.

Lunna Ness and Lunnasting

The majority of potential receptors in this area are found around Vidlin Voe with a handful of other receptors along the coast of Lunna Ness. Views are generally focused across the voe and to the rolling hills beyond. Views of turbines are likely to be widespread with the exception of east facing slopes. Views are likely from Vidlin (viewpoint 15), the main settlement of the area, and from Lunna House (viewpoint 6).

Whalsay (west of Skaw Voe)

The majority of potential receptors on Whalsay are located along the west coast, although there are also a small number on the south east coast. Views tend to be slightly elevated and therefore wide panoramas, looking across Linga Sound towards mainland Shetland. Views of turbines are likely to be widespread with the exception of east facing slopes and much of the south-east coast. Much of the main settlement of Symbister (viewpoint 17) is likely to gain views of the proposals, as are passengers on the ferry connecting to Laxo and Vidlin on mainland Shetland.

Bressay (north of Leira Ness)

The majority of potential receptors are located along the western coast although there are a small number further inland. Views of turbines are likely from much of this area with the exception of south-east facing slopes and low lying areas. Many of the properties within this area, including Gardie House (viewpoint 42), are unlikely to gain important views of the proposals.

South Mainland Shetland (Hellister/Wadbister to northern Trondra and Gulberwick)

Potential receptors in this area are fairly widespread, with the majority being found along the coast and along the Tingwall valley. This area includes Lerwick and Scalloway, two of the largest population centres in Shetland. Views from the coastal receptors tend to be focused across the voes and sounds and out to sea. The inland receptors, generally found along the wider valleys, tend to have more limited views across the valley or distant framed views along the valley floor. Views from the larger settlements are variable with properties along the fringe often gaining open extensive views, and other properties

receiving more restricted and limited views. Views of turbines are likely to be limited to north-west facing slopes and higher ground (viewpoint 10 – Scord of Scalloway and viewpoint 33 - Wormadale Hill), although it is likely to be more widespread in areas closer to the proposals. Views of turbines from the main settlements of Lerwick (viewpoint 8 – Knab Road and viewpoint 9 – North Ness) and Scalloway are likely to be relatively limited. There are also likely to be limited views of the proposals from the tourist destination of Law Ting Holm (viewpoint 7).

Western Mainland Shetland (Bixter to Stourbrough Hill/Mid Walls)

Potential visual receptors within this area are scattered, with the larger settlement clusters located on the coast. Views from coastal receptors tend to be open panoramas focused out to sea. Due to the undulating nature of the landscape views from inland receptors tend to be fairly limited. The majority of receptors are located to the south and north of this area with few in the central inland section. Views of turbines in this area are likely to be concentrated on the east and north-east facing slopes and higher ground. Visibility is likely to be limited from Walls, Bixter and Twatt, which are the main settlements in this area. Views of turbines from the A971 (viewpoint 13), which bisects this area, are likely. However, these may be sporadic and dependant on the direction of travel.

Northern Mainland Shetland (Northmavine; Isbister to Mavis Grind and Hillswick; Muckle Roe and Brae)

Potential receptors in this area are generally located along the coast, with occasional properties along the valleys extending inland. Views are predominantly open and extensive and focused across the voes and along the coast. The majority of potential receptors, with the exception of properties in Brae centre are located on the east facing coast with views across the voes towards the central mainland. Views of turbines are likely to be limited to south-east and east facing coast and slopes and higher ground such as Ronas Hill (viewpoint 5). Views of turbines are likely from the settlements of Hillswick (viewpoint 23), Ollaberry (viewpoint 25) and Brae (viewpoint 22 & viewpoint 39) and also the tourist destination of Mavis Grind (viewpoint 34).

Central Mainland Shetland (Voe/Laxo to Sullom Voe)

Potential receptors in this area are generally found along the coast with additional receptors located along the steep sided valley running between Voe and Dales Voe. The coastal views tend to be open and panoramic, looking across voes and out to sea or framed along voes by steeply sloping sides. Other views are along the Voe / Dales Voe valley. Views of turbines within this area are likely to be widespread, with the exception of some north-east and north-west facing slopes. Views are likely from the main settlements within this area including from Voe (viewpoint 40) and Mossbank (viewpoint 18) and from the main routes (viewpoint 14 – Loch of Voe, viewpoint 29 – Scatsta and viewpoint 41 – Laxo).

Central Mainland Shetland (east of A970 - North and South Nesting)

The majority of potential receptors within this area are found along or near to the coast with very few inland receptors. Views tend to be focused towards the sea. Inland views

are often more restricted by the rolling nature of the landscape. Much of this area is within the wind farm area and therefore views of turbines are likely to be widespread, with the exception of a small number of east and south-east facing slopes. The main settlement areas are at Laxfirth (viewpoint 11) and Benston/Garth/Sellister (viewpoint 12).

Central Mainland Shetland (west of A970 – Mid Kame/Weisdale to Aith/Bixter)

Potential receptors are largely located along the coast, although there are clusters of settlement in the larger valleys at Weisdale and Cuckron. Coastal views tend to be open and widespread, looking across the voes and towards the central or western mainland. Views from Weisdale and Cuckron tend to be framed by the steep valley sides and therefore focused towards the Kames to the north and the coast to the south. As above, a large part of this area is within the development periphery and therefore views of turbines are likely to be widespread. Views are likely from the main settlements of Aith (viewpoint 2) and Kalliness/Weisdale (viewpoint 3), from the main transport routes (viewpoint 28 – A970 north of Petta Water and viewpoint 43 – A971 at Heglibister) and the tourist destination of Burn of Lunklet (viewpoint 1).

9.6 MITIGATION

9.6.1 Introduction

Primary mitigation of potential landscape and visual impacts involved the implementation of a combination of planning and design principles targeted at preventing or reducing predicted impacts. This involved input into the layout design in order to attempt to reduce potential impacts from building receptors and other visually sensitive areas, such as the National Scenic Areas and designed landscapes and is described in more detail in Chapter 4 and Appendix 4.7. See also Chapter 10 for details of ecological mitigation measures.

9.6.2 Principles of Mitigation as Applied to the Scheme

There are three main principles of mitigation which have been applied to this scheme are *Prevention, Reduction* and *Offsetting* as described below:

- Prevention – Primary mitigation, by the prevention of adverse impacts at source, in this case through layout design. (see Chapter 4)
- Reduction – Primary mitigation, by the reduction of those adverse impacts which cannot be eliminated through prevention, in this case by detailed layout design. (see Chapter 4)
- Offsetting– Secondary mitigation, by the provision of alternative or compensatory measures where appropriate and feasible. (see potential landscape planting proposals below)

9.6.3 Mitigation

Prior to photographic rendering, wireframes were used to guide the design of the wind farm from important viewpoints in order to minimise visual impact, for example by

avoiding "bunching" of turbines and moving outlying turbines inwards to create a more evenly distributed and homogenous grouping. This process has been described in more detail in Chapter 4 and Appendix 4.7.

It is also the intention to implement in due course, dependant on the permission and co-operation of local landowners, crofters and tenants, a strategy of landscape management and planting/ habitat creation in order to help offset potential impacts.

It is important to note, however, that potential sites for these have yet to be agreed and consequently any mitigation of potential landscape and visual impacts by offsetting of this nature has not been taken account of in the assessment process in this ES.

Due to the prevailing climatic conditions all planting groups would be situated below 50m AOD in generally south-facing, sheltered locations.

Three different types of planting would be envisaged to perform specific mitigation roles, and these are described below:

(a) **Woodland Screen Planting**

Woodland screen planting consists of a mix of native woodland species and non native, faster growing 'nurse species'. Non- native species would be specifically chosen for their ability to grow in harsh northerly climates therefore helping to more quickly establish a woodland screen (within a period of ten to fifteen years) while providing a more desirable microclimate for the native species to establish. The primary initial role of this type of planting would be to provide a degree of localised screening of the proposed development therefore reducing potential visual impacts.

(b) **Native Woodland Planting**

Native woodland planting would consist of a mix of native tree and scrub species and would primarily be used to improve the scenic quality of a landscape while providing habitat opportunities and screening in the longer term. This planting type would generally be associated with settlements and existing blocks of woodland.

(c) **Native Scrub Planting**

Native scrub planting would consist of a mix of native species and would primarily be used to provide additional habitat opportunities, particularly along watercourses.

9.7 EFFECTS EVALUATION

9.7.1 Basis of assessment

(a) **Development Characteristics**

The key elements and characteristics of the proposed wind farm development which may give rise to visual impacts are described in Chapter 4.

(b) **Assessment of Impacts on Visual Amenity**

This section assesses the visual impact of the proposed scheme by determining the degree of anticipated change in the visual amenity of people using buildings and areas of public open space and routes that would occur as a result of the proposed development. Figure 9.1 shows the blade-tip ZTV for the proposed development and Figures 9.3.1 - 9.3.43 show wireframes and photomontages from selected agreed viewpoints. The assessment of visual effects is presented in Appendix 9.1, summarised in Table 9.4 and illustrated on Figures 9.2.1 to 9.2.12. Note that walking routes and viewpoints are counted as one receptor each and each section of the road and ferry routes receiving different impacts are also counted as one receptor each. *Impacts of moderate and above are considered to be significant* and in this instance, all significant impacts are adverse. The assessment of impacts on buildings, outdoor sites, routes and viewpoints was made on the basis of the proposed scheme and scheme components as described in Chapter 4.

9.7.2 Views from viewpoints and receptors

Exact locations of the viewpoints and receptors referred to below are shown on Figures 9.2.1 to 9.2.11 inclusive.

(a) **Distant Viewpoints and Receptors (15 km to 35 km from development periphery)**

Although views of the development from receptors beyond 15km would be possible these generally would not result in significant impacts. Where views from receptors beyond 15km are possible, the proposals would appear as only a small part of the overall view. Therefore the magnitude of change to the view caused by the wind farm is low, which in turn generally leads to a reduced impact. That said, however, there are a small number of building receptors (viewpoints 66, 67 and 192), one viewpoint receptor (viewpoint 36) outwith 15km which have been assessed as receiving Moderate impacts. Receptors 66 and 67 and viewpoint 36 are located in Esha Ness and have elevated views over the coast, Receptor 192 is located on Papa Stour and has slightly elevated views across sound of Papa towards mainland Shetland. The proposed development would be central to these views and as it is being viewed side on, along its longer north to south axis, it would appear in a larger part of the overall view.

(b) **Local Viewpoints and Receptors (15km or less from development periphery)**

Yell (south of Otterswick)

Views of turbines in this area would be relatively widespread. However, settlement is restricted to around the coast with inland areas being uninhabited moorland. There are a number of receptors within this area that would receive significant impacts. These tend to be south facing and elevated with panoramic views over Yell Sound towards the mainland. In addition the Yell ferry route would receive significant impacts.

Lunna Ness and Lunnasting

Visibility of the proposed development in this area would be widespread, with the exception of east facing slopes. The elevated parts of Vidlin, the largest settlement in this

area, would be likely to receive significant impacts. In addition, one walking route would receive significant impacts.

Whalsay (west of Skaw Voe)

Visibility of the proposed development in this area would be widespread, with the exception of east facing slopes and much of the south east coast. The centre of Symbister, which is the main settlement on Whalsay, is not likely to receive significant impacts as a result of the proposed development. However, significant impacts are generally likely on the outskirts of the settlement and hamlets, such as Brough and Cready Knowe, where receptors are elevated with panoramic views over the sea westwards towards mainland Shetland. In addition, one viewpoint and the Whalsay ferry route would both receive substantial impacts.

Bressay (north of Leira Ness)

Potential visibility of the proposed development would be relatively widespread. However those receiving significant impacts are limited to two receptor groups on the north coast of the island, due to their northerly orientation. All other receptors within this area, including viewpoint 42, one walking route and the Lerwick to Bressay ferry route, would receive lesser, and therefore not significant, impacts.

South Mainland Shetland (Hellister/Wadbister to northern Trondra and Gulberwick)

Views of turbines from this area would be generally limited to north-west facing slopes and higher ground, although more widespread in the north of this area which is nearer to the wind farm. Visibility from the main settlements of Lerwick and Scalloway is very limited and distant. As a result a majority of building or outdoor site receptors or receptor groups in this area in addition to five routeway receptors and five viewpoint receptors would not receive significant impacts.

Western Mainland Shetland (Bixter to Stourbrough Hill/Mid Walls)

Potential visibility of the proposed development from this area would be generally limited to the east and north facing slopes and higher ground and a small number of receptors at the extreme east of this area, close to the proposals. Visibility from the main settlements is limited. Consequently a majority of receptors or receptor groups in this area, including two route receptors, would be unlikely to receive significant impacts. In addition to this there are a large number of receptors that would receive no views at all of the proposed development.

Northern Mainland Shetland (Northmavine; Isbister to Mavis Grind and Hillswick; Muckle Roe and Brae)

Potential views of the proposed development in Northmavine would be limited to south east and east facing slopes and the east-facing coast (especially between Sullom and Ollaberry) and also from higher ground. The main settlements of this area are all located in areas which would be able to see the proposed wind farm and a number of these would receive significant impacts. However, some of these receptors would have reduced

sensitivity to the proposals as a result of foreground views of Sullom Voe Oil Terminal, Scatsta Airfield and Sella Ness industrial area and where relevant this is reflected in the assessment. Most of the route receptors have limited views to the proposals and impacts for these are generally, therefore, not significant. However there would be some limited significant impacts on elevated south-facing receptors above Hillswick, on account of the open panoramic views to the proposals across St. Magnus Bay. There would also be significant impacts upon receptors on the east side of Muckle Roe and the more elevated parts of the west side of Brae, all of which would have open and elevated east-facing views to the proposals across Buster Voe.

Central Mainland Shetland (Voe/Laxo to Sullom Voe)

Much of this area is within the development periphery and therefore visibility of the development would be widespread. That said, however, there are relatively few building receptors within this area beyond the main settlements of Voe and Mossbank, the majority of which are unlikely to receive significant impacts due to the layout design which has taken advantage of the foreground screening effects of the steeper valley sideslopes. However those elevated peripheral areas and smaller outlying settlements such as Laxo and individual crofts and farms not having foreground topographic screening would be likely to experience significant impacts. All the route receptors and viewpoint receptors in this area would also receive significant impacts.

Central Mainland Shetland (east of A970 - North and South Nesting)

As above much of this area is within the development periphery, visibility of the development would be widespread. Settlement within this area is relatively sparse and is generally concentrated along the coast. Just over half the building receptors or receptor groups in this area would receive significant impacts and all the route receptors and viewpoint receptors in this area would also receive significant impacts.

Central Mainland Shetland (west of A970 – Mid Kame/Weisdale to Aith/Bixter)

As with the two areas above much of this area is within the development periphery and therefore visibility of the development would be widespread. Settlement is largely restricted to Aith and the Weisdale Valley. Just over half of the building receptors or receptor groups in this area would receive significant impacts and all the route receptors and viewpoint receptors in this area would also receive significant impacts.

Table 9.4 Summary of Visual Impacts

Receptors	Construction				Operation			
	Significant			Not Significant	Significant			Not Significant
	Substantial	Moderate/ Substantial	Moderate	Negligible to Slight/ Moderate	Substantial	Moderate/ Substantial	Moderate	Negligible to Slight/ Moderate
Viewpoints	8	9	4	22	8	9	3	23
Buildings/	460	210	295	2525	460	209	270	2551

Outdoor								
Roads (including National Cycle Routes, the North Sea Cycle Route and local cycle routes)	2	5	4	17	2	4	5	17
Ferries	1	2	1	4	1	2	1	4
Walking Routes	1	1	2	16	1	1	2	16
Total	**472**	**227**	**306**	**2584**	**472**	**225**	**281**	**2611**

9.7.3 Conclusions; Significant Effects upon Visual Amenity of the Study Area

Table 9.4 provides a summary of the predicted visual impacts associated with the proposed development. The summary table indicates that out of a total of 3589 receptors or receptor groups assessed, 21 viewpoint receptors, 965 buildings or outdoor receptors or receptor groups, 11 road routes, 4 ferry routes and 4 walking routes are predicted to receive significant visual impacts as a result of construction of the proposed development. This would reduce to 20 viewpoint receptors, 939 buildings or outdoor receptors or receptor groups during the operation of the proposed development, with 11 road routes, 4 ferry routes and 4 walking routes remaining unaltered.

The ZTV for the study area (Figure 9.1), confirmed by field survey, indicates that the majority of locations where significant visual impacts would occur are within 15km of the development periphery. As far as possible the development has been designed to minimise impacts on building receptors and receptor groups.

In general, settlement throughout Shetland is located along the coast with views from properties largely focused out over the water. The coastline is defined by a series of voes and inlets, often penetrating into the centre of the landmass. As a result these views tend to be open and panoramic but with no consistent direction of focus. This results in a more scattered pattern of levels of impacts with those facing the development more likely to receive significant impacts. The settlements of Aith and Brae are good examples of this, with properties on the east side of the voe, (and therefore west facing), receiving only slight or negligible impacts and properties on the west side of the voe, (therefore east facing), receiving moderate or substantial impacts.

That said however, there are some large areas where the nature of the topography and landform restrict visibility and therefore lessen potential visual impacts. The largest and most significant of these areas are the west mainland (west of Bixter) and the south mainland (south of Gott/Tingwall). The west mainland landscape consists of a series of broad rounded hummocks, rocky outcrops and lochs. This results in relatively restricted views, particularly from low lying areas, where most settlement is located. The south mainland landscape is dominated by a series of north-east to south-west trending ridges which would restrict views towards the proposed development, particularly from south east facing slopes and low lying areas, where most settlement is located.

Routes in Shetland follow a similar pattern to the settlements, with the majority following the coastline. The main views are therefore along the coast and across the voes and sounds resulting in panoramic views but with no consistent direction. As with the settlements this results in a more scattered pattern of levels of impacts, with those orientated towards the development more likely to receive significant impacts. The main exception, however, is the main north-south arterial road (A970) which tends to take a more direct route, along

the centre of the island and through the centre of the proposed development. Inland routes tend to follow valley floors and therefore views from these are generally enclosed and focused along the valley, which results in the level of impact being more defined by landform and direction of travel. The majority of significant visual impacts on roads would be from within 5km of the development periphery. As might be expected, the greatest level of impact would be received by the A970 and B9071 as they pass through the centre of the development. The main cycle routes (National Cycle Route 1 and the North Sea Cycle route) are along the main roads and therefore have not been assessed separately.

Views from ferries tend to be low level, open panoramas of attractive coastal landscapes and therefore more visually sensitive and so, depending on magnitude of change, these would tend to receive greater impacts than road receptors. Significant impacts on ferry routes would generally be limited to those within 15km of the development periphery, with the highest level of impact being received by those within 10km of the proposed development.

There are few waymarked footpaths in Shetland. However a number of walking routes are promoted by Visit Shetland and these have been considered in this assessment. The majority of these routes are along the tops of the dramatic sea cliffs and voes. As with the ferry routes, views from walking routes tend to be of attractive coastal landscapes and so, depending on the magnitude of change, would tend to experience greater impacts than road receptors. That said however, the panoramic nature of the views result in the proposals appearing in a smaller proportion of the view and therefore the magnitude of change is often reduced because of this. Significant impacts on walking routes would generally be limited to those within 10km of the development periphery, with the highest levels of impact being experienced from those within 2km.

In conclusion, the majority of significant effects upon the visual amenity of Shetland would occur within 15km of the periphery of the proposed Viking Wind Farm. These would generally be located in the central and northern mainland and parts of Yell and Whalsay, where views are orientated towards the proposed development.

APPENDIX 4.7.3: EXCERPT FROM 2009 ES TECHNICAL APPENDIX 9.1

Viewpoint Receptors

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp1	Burn of Lunklet footpath. HU 367 576	1	East and west facing views along the valley	High	Front on and side on views towards the proposals on the surrounding hills, including tracks	1km	1 - 37	High	High	Substantial	Substantial
Vp2	Aith Pier HU 347 560	1	North east facing views up/ across Aith Voe	Medium	Front on and oblique views partially screened by buildings in the foreground	2km	1 - 37	High	High	Moderate/ Substantial	Moderate/ Substantial
Vp3	B9075 near Weisdale Mill HU 395 531	1	North and south facing views up and down the valley	High	Front on views towards the proposed development, including tracks	1.5km	1 - 37	High	High	Substantial	Substantial
Vp4	Noss Head, cliff top footpath HU 552 399	1	360 degree elevated panoramic views (focus is north and south along the sea cliffs)	Medium	Distant and oblique to main views, front on in north west facing views	19km	113 - 150	Low	Low	Slight	Slight
Vp5	Ronas Hill HU 306 834	1	360 degree elevated panoramic views over the Shetland Isles	Medium	Front on and distant in south east facing views, the proposals will appear as a small element in the wider view	14.5km	113 - 150	Low	Low	Slight	Slight
Vp6	Lunna House – 2 storey stone house with designed landscape HU 487 692	1	South west facing views along main axis of designed vista	High	Front on and oblique views within a wide panorama. No turbines will be visible within the main axis	6km	38 - 112	Medium	Medium	Moderate/ Substantial	Moderate/ Substantial

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp7	Ting Holm car park HU 417 434	1	East facing views to Law Ting Holm, with existing wind turbines on the hill above	Low	Side on views predominantly screened by interim landform	9.5km	1 – 37	Negligible	Negligible	Negligible	Negligible
Vp8	Knab Road HU 478 407	1	North facing views typically filtered by surrounding buildings	Low	Front on distant views partially screened by surrounding buildings	15km	76 - 112	Low	Low	Slight	Slight
Vp9	North Ness Business Park, Lerwick HU 475 420	1	Low level north west to east facing panoramic views along/ across Bressay Sound	Medium/ Low	Front on and distant in north facing views, with industrial buildings in the foreground	14km	38 -75	Low	Low	Negligible/ Slight	Negligible/ Slight
Vp10	Scord of Scalloway Viewpoint HU 411 397	1	South east facing elevated, panoramic views over Scalloway, Trondra etc	Low	Side on views up Ting Holm Valley with a quarry and gravel works in the foreground	12.5km	1 - 75	Negligible	Negligible	Negligible	Negligible
Vp11	Laxfirth HU 474 597	1	North east and south west facing views, up and down the valley	Medium	Front on in south west facing views; including tracks	2km	76 - 112	High	High	Moderate/ Substantial	Moderate/ Substantial
Vp12	Benston HU 470 542	1	North west facing low level views	High	Front on views towards the proposals; including track and borrowpit	2.5km	38 - 75	High	High	Substantial	Substantial
Vp13	A971 between Bixter and Walls HU 287 529	1	East facing slightly elevated views over Hulma Water	High	Front on views towards the proposed development	7.5km	38 - 75	Medium	Medium	Moderate/ Substantial	Moderate/ Substantial

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp14	A970/ B9071 junction at Loch of Voe HU 413 624	1	360 degree relatively enclosed views of Petta Dale	Medium	Front on views to north, east and south, including tracks and borrowpit. North facing views partially screened by interim landform	1km	38 - 75	High	High	Moderate/ Substantial	Moderate/ Substantial
Vp15	Vidlin (east) HU 487 661	1	West and north west elevated views over Vidlin Voe	High	Front on and oblique within a wide panorama. Proposals are likely to be seen in the majority of this panorama	5km	113 - 150	Medium	Medium	Moderate/ Substantial	Moderate/ Substantial
Vp16	Papa Stour Pier HU 181 609	1	East facing low level panoramic views towards Vementry, Muckle Roe etc	Low/ Medium	Front on distant views towards the proposed development	19km	76 – 112	Low/ Medium	Low/ Medium	Slight/ Moderate	Slight/ Moderate
Vp17	Symbister, Whalsay HU 543 615	1	South west facing elevated panoramic views towards the mainland	High	Front on to side on views. Proposals would be visible in large proportion of view	8.5km	113 - 150	High	High	Substantial	Substantial
Vp18	Mossbank HU 448 749	1	East facing elevated views over Yell Sound	Low	Side on views screened by landform and buildings	4km	1 - 37	Negligible	Negligible	Negligible	Negligible
Vp19	Burravoe Pier, Yell HU 519 793	1	South east coastal views over Burra Voe	Medium	Side on views partially screened by local topography. Only distant parts of the proposals would be visible	12km	76 - 112	Low	Low	Slight	Slight

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp20	Uyeasound Peir, Unst HP 592 010	1	South facing low level panoramic views	Low	Front on very distant views towards the proposals	33km	1 - 37	Negligible	Negligible	Negligible	Negligible
Vp21	Hamnavoe – Burra Public Hall HU 369 362	1	North facing wide panoramic views over sea towards Whiteness, Weisdale, Walls etc	Medium/ High	Front on, distant views towards the proposals which form a small element of the overall view	16.5km	38 - 75	Low	Low	Slight/ Moderate	Slight/ Moderate
Vp22	Brae (town centre) HU 355 681	1	South facing low level views down Busta Voe	Medium	Rear oblique, side on and front on views towards the proposed development including turbines, track, Borrowpit, met mast and compound.	2.5km	38 - 75	Medium	Medium	Moderate	Moderate
Vp23	Hillswick HU 283 771	1	Slightly elevated/ south east facing view across Ura Firth	Medium	Front on, distant views towards the proposals	11.5km	1 - 37	Medium	Medium	Moderate	Moderate
Vp24	Gardins, Yell HU 450 874	1	South south west views down Southladie Voe	Medium	Front on distant views of the proposals	16km	38 - 75	Low	Low	Slight	Slight
Vp25	Ollaberry HU 369 806	1	South east facing views over Gluss Voe to oil terminal	Medium/ High	Front on or oblique views towards the proposed with Sullom Voe oil terminal in the foreground	9km	1 - 75	High	High	Substantial	Substantial

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp26	Out Skerries HU 681 718	1	South east facing views towards Skerries Bridge	Low	Oblique distant views towards the proposed development	25.5km	113 - 150	Negligible	Negligible	Negligible	Negligible
Vp27	A970 north of Leebotten HU 430 263	1	North - east – south facing elevated panoramic views along coast and to Bressay	Low	Very distant and front on in north facing views	25km	1 – 37	Negligible	Negligible	Negligible	Negligible
Vp28	A970, Petta Dale HU 415 600	1	South facing slightly elevated views down Petta Dale	High	The proposals will dominate views in all directions; compounds and borrowpits to north	0.5km	113 - 150	High	High	Substantial	Substantial
Vp29	B9076, Scatsta Viewpoint HU 398 729	1	North west, low level views towards the Sullom Voe Oil Terminal from roadside lay-by	Low	Rear and rear oblique, with an access track and site compound proposed adjacent to this location	1km	1 - 37	High	Medium	Moderate	Slight
Vp30	Northlink Ferry (off Mousa) HU 490 230	1	360 degree views from the upper passenger deck	Low	Front on and distant in north facing views	29km	38 - 75	Low	Low	Negligible	Negligible
Vp31	Kirkabister Lighthouse, Bressay HU 490 376	1	West facing slightly elevated panoramic views over Bressay Sound to the mainland	Low	Oblique, distant views towards the proposals with Lerwick in the foreground	18.5km	76 - 112	Negligible/ Low	Negligible/ Low	Negligible/ Slight	Negligible/ Slight
Vp32	Broch of Mousa, Mousa HU 457 236	1	East facing views over Mousa Sound to the mainland	Low	Side on distant views predominantly screened by interim landform	27km	n/a	No View	No View	No View	No View

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp33	Wormadale Hill Viewpoint HU 403 463	1	South facing elevated wide panoramic views down the coast	Medium	Oblique views predominantly screened by interim landform	6.5km	1 - 37	Low	Low	Slight	Slight
Vp34	Mavis Grind: tourist location - narrow causeway between the Atlantic & N Sea HU 340 684	1	East and West views to water on either side	Medium	Front on and oblique in views to the east, some screening by local topography	5km	1 – 75	High	High	Moderate/ Substantial	Moderate/ Substantial
Vp35 (FP2)	Fethaland Track HU 376 926	1	360 degree panoramic views (main focus is north and east)	Low/ Medium	Front on and distant in south facing views, partially screened by interim landform	19.5km	1 - 37	Low	Low	Slight	Slight
Vp36	Esha Ness, B9078 HU 221 783	1	South east facing elevated panoramic views over dramatic coastline	Medium/ High	Front on distant views towards the proposed development	17.5km	113 - 150	Medium	Medium	Moderate	Moderate
Vp37	Brough Lodge, Fetlar HU 580 927	1	West facing slightly elevated panoramic views across Colgrave Sound towards Hascosay and Yell	Low	Side on distant views within a wide panorama	26.5km	76 - 112	Negligible	Negligible	Negligible	Negligible
Vp38	Belmont House, Unst HP 565 010	1	South facing views across Wick of Belmont and ferry pier	Low	Front on very distant views towards the proposed development	31.5km	1 - 37	Negligible	Negligible	Negligible	Negligible
Vp39	B970 junction with road to Busta/ Muckle Roe HU 348 675	1	South east facing elevated views over Busta Voe and Brae	High	Front on/ oblique views towards the proposals including turbines, track, borrowpit, met mast and compound.	3km	76 - 112	High	High	Substantial	Substantial

Ref	Name /Location / Type/ Context	Number of receptors (approx)	Nature of Main View	Sensitivity of the receptor	Angle and Nature of Change	Distance	Potential no. of turbines visible	Magnitude		Impact	
								Construction	Operational	Construction	Operational
Vp40	Mulla, Voe HU 404 641	1	Elevated south east facing views across the valley	High	Front on and oblique views towards the proposals	2km	38 - 75	High	High	Substantial	Substantial
Vp41	Laxo HU 444 636	1	Main focus of view east down Laxo Voe and Dury Voe towards Whalsay	Medium/ High	Side on and rear views towards the proposals, including tracks.	1.5km	38 - 75	High	High	Moderate/ Substantial	Moderate/ Substantial
Vp42	Gardie House, Bressay HU 487 422	1	South west facing views over Bressay Sound towards Lerwick	High	Distant side on views predominantly screened by interim landform	14km	n/a	No View	No View	No View	No View
Vp43	A971, above Heglibister HU 385 512	1	North and south facing views, up Weisdale Valley or down Weisdale Voe	High	Front on in north facing views up the valley	1.5km	1 - 37	Medium	Medium	Moderate/ Substantial	Moderate/ Substantial

APPENDIX 4.7.4: 2009 ES TECHNICAL APPENDIX 9.2

1. VIEWPOINT SELECTION CRITERIA

1.1 BACKGROUND

In 2006 ASH design + assessment (ASH) undertook preliminary reconnaissance of the study area in order to build up a picture of the existing landscape character, topographical features and historical associations. The site familiarisation exercise also identified, in broad terms, potential visual receptors. Initial consultation with SNH was undertaken and they provided details of eight initial viewpoints. Following continued consultation a further list of potential viewpoints was put forward by ASH and SNH and this final list was agreed with both SNH and Shetland Islands Council in Autumn 2007.

1.2 METHODOLOGY

The visual impact assessment of the development was carried out broadly based on the Guidelines for Landscape and Visual Assessment (2nd edition, 2002) and guidelines on current best practice, including: 'Guidelines on the Environmental Impacts of Windfarms & Small Scale Hydroelectric Schemes' (SNH February 2001); 'Visual Representation of Windfarms, Good Practice Guidance' SNH 2006; Landscape Character Assessment (The Countryside Agency and SNH 2002); and Visual Assessment of Windfarms: Best Practice (conducted by University of Newcastle for SNH, 2002).

A Zone of Theoretical Visibility (ZTV) programme was run for the area in order to ascertain the visual envelope, to guide the field assessment of the impact of the proposals on properties, outdoor spaces and routeways within the envelope. A wide-ranging comprehensive visual assessment was then carried out of all receptors with the potential to receive an impact within the study area, supplemented by visualisations from a subset of points (those considered key viewpoints) as part of this wider assessment.

Field assessment was carried out for impacts during construction and for impacts during the operational years after completion. The LVIA survey area for the proposed wind farm extended to 35km from the development periphery, in accordance with current best practice. A further site visit by ASH took place once the final layout was agreed, at which time the impacts identified previously were modified as necessary.

1.3 VIEWPOINTS

A viewpoint is defined in 'Visual Representation of Windfarms, Good Practice Guidance' (The Guidance) as "...a place from where a view is gained and represents specific conditions or viewers (visual receptors)." The Guidance further suggests that "...over-provision of viewpoints can be as unhelpful as under-provision…"

All viewpoints should, therefore:

- Fall within the ZTV;
- have main/ most important views looking towards development;

- " ..likely to be significantly affected by the development" (PAN 58, para. 65);and
- be a key viewpoint, e.g. visitor attraction, settlement, tourist route, recreation site, popular vantage point, or an Historic /Designed Landscape.

In addition, viewpoints selected should ideally;

- represent a variety of distances, aspects and elevations;
- demonstrate a variety of visible extent, e.g. full, hub, tips only;
- be representative of a range of views and viewer types that will experience the development; and
- be representative of a range of landscape character types.

The finalised and agreed list of viewpoints and their reasons for inclusion are shown in Table 1 below.

Table 1: Finalised List of Viewpoints

Viewpoint Number	Location	Grid Reference	Description/ Reasons for Selection
1	The Burn of Lunklet	HU 367 576	Outdoor Recreation Area (footpath) and Tourist Destination
2	Aith Pier	HU 347 560	Settlement
3	Kergord Valley (Weisdale Mill)	HU 395 531	Outdoor Site/ Tourist Destination
4	Noup of Noss	HU 552 399	Outdoor Site, National Nature Reserve, SPA, SSSI
5	Ronas Hill	HU 306 834	Peak/Outdoor Recreation Area/Viewpoint (highest point in Shetland)
6	Lunna House	HU 487 692	Designed Landscape/Historic site/ Tourist Destination
7	Loch of Tingwall	HU 417 434	Historic Site/ Tourist Destination
8	Knab/ Knab Road, Lerwick	HU 478 407	Settlement
9	North Ness, Lerwick	HU 475 420	Settlement
10	Scord of Scalloway	HU 411 397	Vantage Point, identified on OS maps
11	North Nesting (Laxfirth)	HU 474 597	Settlement
12	South Nesting (Benston)	HU 470 542	Settlement
13	Viewpoint from A971 between Bixter and Walls	HU 287 529	Main road between two settlements
14	Voe (Car Park at Laxo road junction)	HU 413 624	Viewpoint
15	Vidlin	HU 487 661	Settlement
16	Papa Stour	HU 181 609	Settlement
17	Whalsay (Clate)	HU 543 615	Settlement
18	Firth/Mossbank	HU 448 749	Settlement
19	Burravoe (Yell)	HU 519 793	Settlement
20	Uyeasound (Unst)	HP 592 010	Settlement
21	Hamnavoe (Burra)	HU 369 362	Settlement
22	Brae	HU 355 681	Settlement
23	Hillswick	HU 282 770	Settlement
24	West Sandwick (Yell)	HU 450 874	Settlement
25	Ollaberry	HU 369 806	Settlement

Viewpoint Number	Location	Grid Reference	Description/ Reasons for Selection
26	Out Skerries	HU 681 718	Settlement
27	A970 south of Cunningsburgh,	HU 430 263	Road Route; first view from southern mainland heading north
28	A970 Kames	HU 415 600	Road Route
29	B9076 near Scatsta (Airport Viewpoint)	HU 398 729	Viewpoint, identified on OS maps
30	Northlink Ferry (off Mousa)	HU 490 230	Ferry Route; one of main means of access to Shetland
31	Bressay Light House	HU 490 376	Historic Building; visitor viewpoint
32	Mousa	HU 457 236	Outdoor Location, Tourist Destination, Designated Area – SPA & SSSI
33	Wormadale Hill (A971)	HU 403 463	Viewpoint, identified on OS maps
34	Mavis Grind	HU 340 684	Outdoor Location/ Tourist stop
35	Fethaland track	HU 376 926	Outdoor Recreation Location, Designated Area - NSA
36	Esha Ness	HU 221 783	Designated Area - NSA / Tourist stop
37	Brough Lodge (Fetlar)	HU 580 927	Historic Building/ Designed Landscape
38	Belmont House (Unst)	HP 565 010	Historic Building/ Designed Landscape
39	Busta Junction, Brae	HU 348 675	Settlement/ Important elevated pausing point on way to popular hotel
40	Mulla, Voe	HU 404 641	Settlement with elevated south-facing views
41	Laxo	HU 444 636	Settlement
42	Gardie House,Bressay	HU 487 422	Historic Building/ Designed Landscape
43	Heglister (A971)	HU 385 512	Road Route

APPENDIX 4.7.5: 2009 ES FIGURE 9.2.1

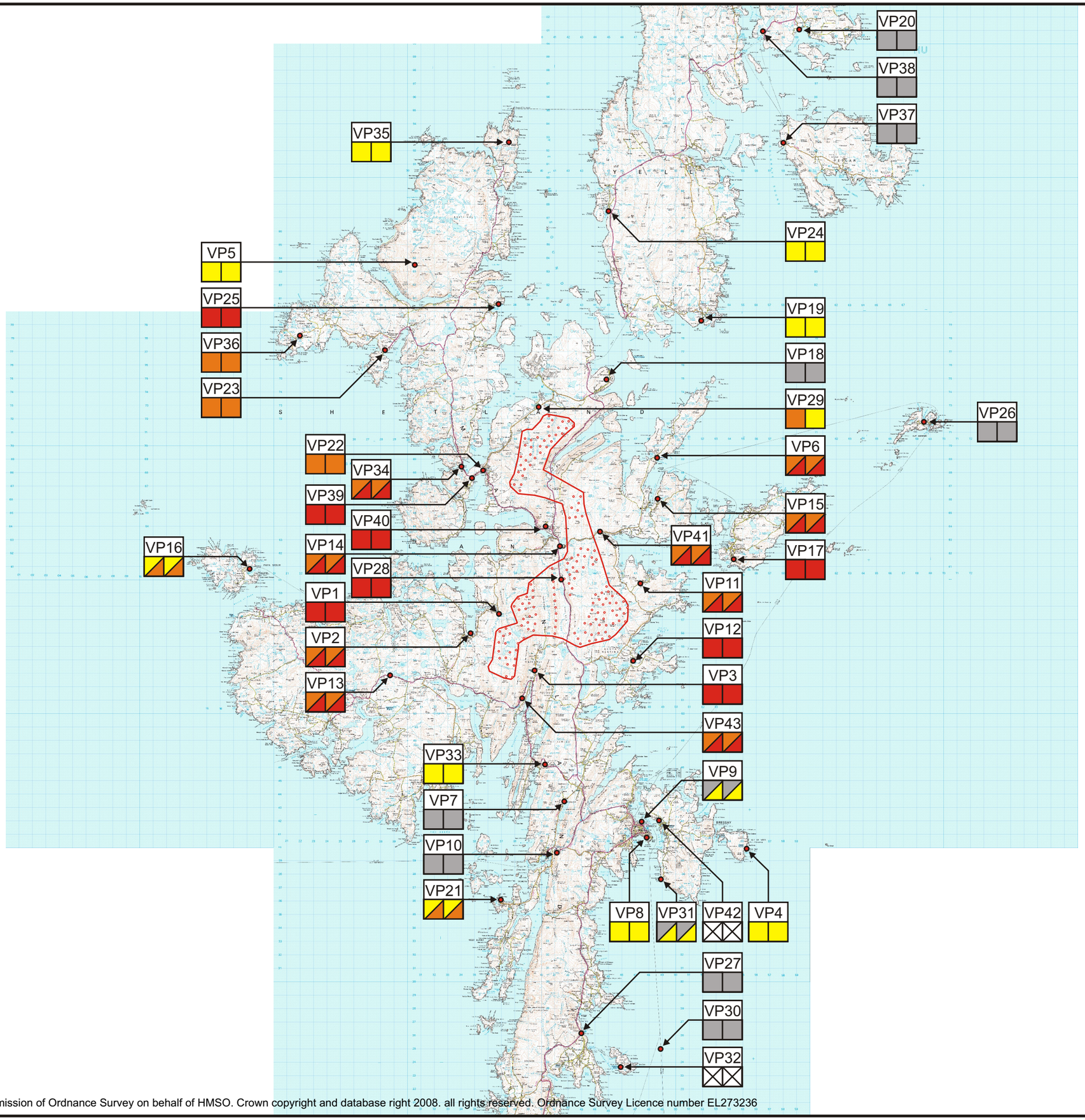

Figure 9.2.1

Key

- Development Periphery
- Turbines
- Viewpoint Receptors
- A = Receptor no.
  B = Visual Impact During Construction
  C = Visual Impact Upon Completion
- Substantial
- Moderate
- Slight
- Negligible
- No View

Client:	viking energy Harnessing Shetland's natural resources
Project:	**Viking Wind Farm**
Title:	**Visual Receptors (Sheet 1 of 11)**
Scale:	As shown
Date:	Nov 2008

ash
design + assessment