Landscape and Visual Assessment
For the proposed
45m high Wind Turbine Development
at
Ringstone Hill Farm,
Brierley, South Yorkshire.

Holman:Davies Design Ltd
37 Southlands
High Heaton
Newcastle upon Tyne
NE7 7YJ

Executive Summary

This report has been prepared to accompany the planning application for a single wind turbine 45m to hub, 67m to blade tip at Ringstone Hill Farm, Common Road, Brierley, Barnsley, South Yorkshire S72 9HF. The report sets out the findings of the Landscape and Visual Appraisal carried out by Holman:Davies Design Ltd following the pre-application advice and screening opinion given by Barnsley BC.

The Landscape and Visual Impact Assessment (LVIA) It considers the potential effects of the single turbine for a period of 25 years upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

The site lies within the Nottingham, Derbyshire and Yorkshire Coalfields NCLA which is approximately 100km long and 25km wide, the single turbine would effect a very small section of this character area the impact would be **Slight** and therefore **Not Significant.** Within the 5km radius study area there are two Regional Landscape Character Areas, 30 Southern Magnisian Limestone and 38 Nottingham, Derbyshire and Yorkshire Coalfields. The Southern Magnesian Limestone NLCA is approximately 5km from the site and the ZTVs indicated limited visibility therefore little potential for Significant impacts to occur.

The sensitivity and capacity of the site is to development is **Medium**, the Magnitude of Change on Landscape Features is considered to be **Low**, and therefore the Significance of the Impact is **Moderate/Slight** and therefore **Not Significant.**

Of the six viewpoints and sixteen receptor groups assessed the visual impact on only two receptors, (walkers on the Barnsley Boundary Walk) have been assessed as having Significant impacts, as they cannot be mitigated due to their location, however these impacts are limited to a short section of the overall walk within the study area.

The size of the proposed single turbine (45m to hub, 67 to blade tip) within a landscape with numerous comparable size industrial features, e.g. chimneys, over head electricity lines and large industrial buildings, together with the limited size of the visual envelope and further fragmentation of the view within the area, results in a proposed scheme without many Significant Visual Impacts. The proposed mitigation for those which have been assessed would reduce the already low levels of significance down to even more acceptable levels.

The proposed Ringstone Hill Farm turbine would theoretically be seen cumulatively in combination with the Marr Turbine 10km to the south-east however in reality the landscape and visual cumulative assessment indicates that there would be no significant impacts following the inclusion the Ferguson turbine to the existing baseline landscape. Where views are potentially available as illustrated on the ZTVs many are either screened or filtered by existing local landform, buildings or vegetation further reducing the impact of the proposed development.

The above assessment of the landscape and visual impacts and cumulative landscape and visual impacts indicate a general residual range from Moderate to Slight and therefore Not Significant.

Having given careful consideration to the potential landscape and visual impacts/effects throughout the study area, it is considered on balance that the proposed Ringstone Hill Wind Turbine Development is acceptable.

CONTENTS

1.0 Introduction 1
2.0 Outline of the Consultation Undertaken 3
3.0 Outline of the Methodology Adopted for the Assessment 5
4.0 Description of the Baseline Conditions 9
5.0 Summary of the Assessment of Effects on Landscape Features 21
6.0 Summary of the Assessment of Effects on Landscape Character and Landscape Designations 23
7.0 Outline of the Assessment of Effects on Visual Amenity 27
8.0 Summary of the Assessment of Cumulative Effects 39
9.0 Summary and Conclusions 45
Appendix 1: Landscape and Visual Impact Assessment Methodology 49
Appendix 2: Preliminary Review of Landscape Character Types and Landscape Designations within 5km of Ringstone Hill Farm, Brierley 61
Appendix 3: Preliminary Review of Principal Visual Receptors within 5km of Ringstone Hill Farm, Brierley 64
Appendix 4 Glossary 67

FIGURE No.	FIGURE TITLE
1	Study Area 5km radius
2	Site Layout
3	National Character Areas
4	Regional Landscape Character Types/Areas
5	Designated Landscapes
6	Zone of Theoretical Visibility (ZTV) 45m to hub
7	Zone of Theoretical Visibility 67m to blade tip
8	Cumulative Zone of Theoretical visibility 67m to blade tip & Marr Wind turbine
9	ZTV 67m to blade tip showing National and Regional Landscape Character Areas/Types
10	Viewpoint 1 Burntwood Hall Care Centre
11	Wireline and photomontage, Burntwood Hall Care Centre
12	Viewpoint 2 Burntwood Hotel, Common Road
13	Wireline Burntwood Hall Care Centre
14	Photomontage Burntwood Hall Care Centre
15	Viewpoint 3 Manor Farm, Pudding Hill, Common Road
16	Wireline and photomontage, Manor Farm, Pudding Hill, Common Road
17	Viiewpoint 4 Hillside Crescent/Brierley Road
18	Wireline and photomontage, Hillside Crescent/Brierley Road
19	Viewpoint 5 Burntwood Road, Grimethorpe
20	Wireline and photomontage, Burntwood Road, Grimethorpe
21	Viewpoint 6 A628/B6422 Hague Lane Roundabout
22	Wireline and photomontage, A628/B6422 Hague Lane Roundabout

LANDSCAPE AND VISUAL ASSESSMENT

1.0 Introduction

1.1 This Landscape and Visual Impact Assessment (LVIA) has been prepared by Chartered Members of the Landscape Institute, from Holman:Davies Design Ltd., of the proposed single wind turbine development at Ringstone Hill Farm, Common Road, Brierley, Barnsley, South Yorkshire S72 9HF.

1.2 *The LVIA considers the potential effects of a single turbine 45m to nacelle, 67m to blade tip at Ringstone* Hill Farm for a period of 25 years upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

1.3 The report is structured as follows:

- 2 0 Summary of the Consultation undertaken;
- 3.0 Summary of the methodology adopted for the assessment;
- 4.0 Description of the baseline conditions;
- 5.0 Summary of the assessment of effects on landscape features;
- 6.0 Summary of the assessment of effects on landscape character and landscape designations;
- 7.0 Summary of the assessment of effects on visual amenity;
- 8.0 Summary of the Assessment of Cumulative Effects;
- 9.0 Summary and conclusions.

1.4 All figures referenced in this chapter are included in Volume 2 of the Report.

1.5 There are a number of technical appendices to this chapter which are included in at the back of the Report:

Appendix 1: Landscape and Visual Impact Assessment Methodology, sets out the detailed methodology used for the assessment.

Appendix 2: Preliminary Review of Landscape Character Types and Landscape Designations within 5km of Ringstone Hill Farm. This contains, in tabulated form a preliminary review of all the landscape character types identified from relevant character assessments as well as all designated landscapes within the defined study area. The landscape character types and designated landscapes which were found to have potential to undergo a significant effect are assessed in full in Section 6.0 of this report.

Appendix 3: Preliminary Review of Principal Visual Receptors within 5km of Ringstone Hill Farm. This contains, in tabulated form a preliminary review of all the potential principal visual receptors of the proposed development. The principal receptors which were found to have potential to undergo a significant effect are assessed in full in Section 7.0 of this report.

Appendix 4: Glossary of terms used throughout the Landscape and Visual Assessment

2.0 Outline of the Consultation Undertaken

2.1 Consultation regarding the Ringstone Hill Farm has been undertaken with Barnsley Borough Council. Following a meeting held 1st December 2011 the following extract is taken from the minutes from the meeting which were issued by Barnsley BC:

Landscape and Visual Impact – a comprehensive landscape and visual impact assessment in required. The proposed viewpoints and photomontages are broadly acceptable. However, additional viewpoints are required from Manor Farm (which is a listed building) and the eastern edge of Brierley Conservation Area. In addition, a viewpoint is required from Hallsteads Moated Site which is a Scheduled Ancient Monument (SAM). Where this is not achievable, a photomontage should be obtained from the end of Burntwood Road which looks over towards the SAM site.

A Zone of Theoretical Visibility (ZTV) should be prepared.

The landscape and visual assessment should fully reference and consider the Barnsley Landscape Character Assessment.

There are cumulative impacts to consider in respect of Marr Wind Farm which lies in Doncaster.

Both Doncaster and Wakefield Council's should be consulted on the Landscape and Visual Assessment and, in particular, the proposed viewpoints as the site lies close to both local authority boundaries.

An email was issued by Barnsley BC 18th January 2012 with the following comment regarding the proposed LVIA:

'The viewpoints look fine to me and I trust the LVIA will be carried out as specified and include a cumulative assessment. Could an additional ZTV be prepared at 7.5km or 10km?'

3.0 Outline of the Methodology Adopted for the Assessment

3.1 The following is a summary of the methodology for the LVIA, presented in Appendix 1.

Guidance Documents

3.2 Guidance documents used in the assessment are set out in Appendix 1. The LVIA has been undertaken in accordance with best practice, as outlined in:

- The Guidelines for Landscape and Visual Impact Assessment, 2nd Edition (2002) Landscape Institute and the Institute for Environmental Management and Assessment;

Distinction between Landscape and Visual Effects

3.3 In accordance with published guidance, landscape and visual impacts are assessed separately:

- Landscape impacts relate to the effects of the proposals on the physical and other characteristics of the landscape and its resulting character and quality.
- Visual impacts relate to the effects on views experienced by visual receptors (e.g. residents, footpath users, tourists etc) and on the visual amenity experienced by those people.

Types of Impact Considered in the LVIA

3.4 The LVIA assesses both the long term effects relating to the operational lifetime of the wind turbine development and also the short-term effects associated with its construction. Where appropriate, the LVIA also considers any residual effects following the wind turbines decommission and removal.

3.5 The LVIA not only assesses the impacts associated with the turbine but also any related impacts resulting from the control building, underground cabling, site tracks and access roads.

3.6 Consideration has been given to seasonal variations in the visibility of the wind farm. The LVIA has been carried out between November 2011 and January 2012 and therefore represents the worst case scenario as deciduous trees were without leaves.

3.7 There are no other wind farms within or immediately adjacent to the study area, therefore there is no cumulative assessment.

Study Area

3.8 The study area for the assessment of visual impacts ha s been agreed with Barnsley Borough Council as being 5km radius from the site.

3.9 Initially all landscape character areas/types within 5km of the site were considered in a filtering exercise set out and described in Appendix 2. The filtering exercise presented in Appendix 2 which was informed by initial baseline studies and site visits which indicated that there was little potential in the surrounding landscape (beyond approximately 5km) from the site for a single turbine to have significant indirect effects on landscape character areas/types or a receptor's experience of that landscape character. Therefore a study area of approximately 5km from the site was used for a detailed assessment of effects on landscape character. The visual envelope consists of the area between the southern edge of Brierley and Hemsworth to the north, Cudworth to the west, Grimethorpe, Burnt Wood Hall and Howell Wood Country Park to the South and South Kirby to the east.

Landscape Assessment Methodology

3. 10 The LVIA assesses how the proposed development would impact directly on any landscape features and resources (e.g. removal of trees, hedgerows).

3. 11 It considers the impacts on landscape character at two levels.

- consideration is given to how the immediate landscape character surrounding the site (within approximately 1km of the turbine) is directly affected by the removal or alteration of existing features and the introduction of new features.

- the indirect impacts of the development on the wider landscape are discussed with reference to National Landscape Character Areas and Regional Landscape Character Types identified within relevant landscape character assessments and wind farm sensitivity studies.

3.12 The significance of effects on landscape features and character is determined by cross-referencing the sensitivity of the feature or landscape character with the magnitude of change using the methodology and criteria established in Appendix 1.

Visual Assessment Methodology

3. 13 Potential visual receptors of the scheme were initially identified by interpretation of digitally generated Zones of Theoretical Visibility (ZTVs) (see Appendix 1 for an explanation of ZTVs their production and limitations).

3.14 The assessment of visual effects was undertaken on the basis of viewpoint analysis as recommended by best practice guidelines. A selection of viewpoints was agreed with NCC to represent the range of views likely to be experienced of the development. All photography and survey work of the viewpoints etc was undertaken only from publicly accessible road and footpaths.

3.15 The viewpoints were selected to represent a range of views and viewer types. The viewpoints cover a variety of different character types, are in different directions from the site and are at varying elevations. The viewpoints are located at a range of distances from the development to illustrate the varying magnitude of visual impacts with distance from the site.

3.16 For each of the viewpoints, a wireframe model was generated to help identify the scale, arrangement and visibility of the turbine (see Appendix 1 for a description of how the wireframe models were produced). The images were reviewed on site to assess how natural and built screening would affect visibility of the site.

3.17 A number of viewpoints within approximately 5km of the site were developed further into photomontages to help illustrate the predicted impact of the development (see Appendix 1 for a description of how the photomontages were generated and their limitations).

3.18 The viewpoints were used as the basis for determining the effects on visual receptors within the entire study area.

3.19 In parallel to the viewpoint analysis the ZTVs were used to identify potential visual receptors (eg residents, users of public rights of way, visitors to tourist attractions etc) of the proposed development. A filtering process was undertaken to identify which of the visual receptors within the study area had the potential to experience significant visual effects. This filtering exercise is set out in Appendix 3.

3.20 The significance of effects on visual receptors is determined by cross referencing the sensitivity of the receptor with the magnitude of impact using the criteria established in the Appendix 1.

Impact Significance

3.21 The ultimate purpose of the LVIA is to evaluate the significance of potential effects on the landscape and visual amenity surrounding the site.

3.22 The significance of the landscape and visual effects is determined by cross-referencing the sensitivity of the landscape or view with the magnitude of change. In determining the significance of residual effects all mitigation measures are taken into account.

3.23 Table 1.2 in Appendix 1 demonstrates the general relationship between sensitivity and magnitude based on the specific criteria given in Appendix 1. The significance of effects is described as Substantial, Substantial/Moderate, Moderate or Moderate/Slight, Slight, Slight/No Effect or No Effect.

3.24 Those effects identified as Substantial, Substantial/Moderate and in some cases Moderate significance may be regarded as 'Significant' effects when discussed in terms of the Town and Country Planning (England and Wales) (Environmental Impact Assessment) Regulations 1999, are discussed further in this report. All other 'Non Significant' effects have been screened out and are discussed within the Appendix 2 & 3.

Residual Effects

3.25 Best practice in Environmental Impact Assessment (EIA) requires that the significance of potential effects be assessed, mitigation proposals identified and the residual effect (with mitigation in place) then re-assessed to demonstrate the effectiveness of the mitigation proposed. There are four general types of potential mitigation;

- avoidance;
- reduction;
- remediation; and
- compensation.

Nature of Effects

3.26 There is a range of public opinion on whether the landscape and visual impacts of a wind farm proposal are positive (beneficial) or negative (adverse). Publications such as 'Public Attitudes to Windfarms' Scottish Executive 2003 and other surveys demonstrate that wind farm developments generate a spectrum of public responses ranging from strongly adverse to strongly positive. This range of opinion from positive to negative is often referred to as the concept of "valency", which has been discussed and debated at numerous wind farm public inquiries.

3.27 Our approach is that the judgement should be reached through the process set out in the GLVIA, and should be based on the objective professional assessment of the baseline landscape, it's landscape character and visual resource of the relevant area together with the sensitivity of the landscape and visual receptors 'receiving' or experiencing the development. However, once an assessment has been made for all of the identified receptors, there is a requirement to consider what mitigation measures can be proposed to reduce or minimise the environmental or social impacts / effects on the identified receptors, as recommended in PPS22.

4.0 Description of the Baseline Conditions

4.1 This section of the report establishes the landscape and visual baseline conditions of the site and the surrounding area.

4.2 The baseline conditions are presented in four sections:

- A site specific landscape appraisal of the landscape characteristics of the site and immediately surrounding area including a description of the landscape features within the site boundary;
- A description of landscape character drawing upon a review of published landscape character assessments;
- A review of landscape designations; and
- A description of potential visual receptors.

Site Specific Landscape Appraisal

4.3 This section provides an objective and factual site specific description of the landscape features and characteristics of the landscape within and immediately surrounding the assessment boundary. The landscape context within approximately 5km of the site is illustrated in Figure 01. Study Area 5km radius.

The Site

4.4 The Ringstone Hill farm wind turbine site falls within the Nottinghamshire, Derbyshire and Yorkshire Coalfield, Grid Reference 442535, 410375. It lies between the towns of Brierley, South Kirby, and Grimethorpe.

4.5 The site is bounded to the north and east by a 1.5m well maintained, mixed thorn hedge row along Common Road and the B6273 South Moor Road, to the west by a 1.5m mixed thorn hedge and in part a low dry stone wall. To the south the boundary is created by the agricultural and residential buildings of Ringstone Hill Farm. The site is currently under arable cultivation. The landscape of the site is illustrated on Figure 02. Site Layout.

4.6 There are three Public Right of Ways across the site, a bridle path (road used as a footpath) which follows the western boundary From Ringstone Hill Farm in the south to Common Road in the north. A footpath which follow the bridle path from the farm to approximately half way across the field before heading north to meet Common Road approximately 200m from the junction of South Moor Road. A third path crosses the field east to west parallel to the Ringstone Hill Farm access road.

Landform and Topography

4.7 The area lies approximately 110m Above Ordnance Datum (AOD), with the 110m contour crossing the centre of the site from east to west. The site relatively flat, falling to the north near Common Road/Pudding Hill.

4.8 Immediately to the west of the site the land falls towards Grimethorpe approximately 95m AOD within 1km then further towards Cudworth at approximately 50m AOD at 4km from the site. The landform is the eastern valley side which is part of the broader landscape structure of the River Dearne valley.

4.9 To the east the landform is part of the Southern Magnesian Limestone Plateau a gently rolling open agricultural landscape with few topographical features of note. The landform within the 5km study area is illustrated in, Figure 01, Study Area 5km radius.

Watercourses and Drainage

4.10 There are no watercourses within the site, however there are a number of springs along the escarpment to the west which drain into the series of ponds near Grimethorpe before flowing out towards the Dearne Valley near Cudworth.

4.11 To the east of the site there are a limited number of small streams, Langthwaite Beck, Howell Beck etc., which flow to the east and forms part of the River Went Valley system.

Vegetation

4.12 The proposed development is located within a field of arable crops enclosed with 1.5m high mixed thorn hedgerows and a dry stone wall to the west.
To the east of the site the limestone plateau is a fertile, intensively-farmed arable landscape with large fields bounded by low-cut thorn hedges creating a generally large-scale, open landscape, intermixed with areas of parkland with estate woodlands and plantations breaking up the long views.

4.13 The landscape to the west is characterised by substantial areas of intact agricultural land in both arable and pastoral use depending on the underlying topography. Between the settlements there small, fragmented remnants of pre-industrial landscape and semi-natural grassland, scrub and woodland vegetation.

Buildings and Infrastructure

4.14 Ringstone Hill Farm is a mix of vernacular farmhouse and modern agricultural buildings/barns etc. The farm house is a double fronted two storey stone building with a slate roof. The barns are a mix of materials including profile sheeting, timber, etc.

4.15 The surrounding towns and villages of Brierley Hemsworth, South Kirby and Grimethorpe are generally a mix of an old village centre encompassed with a modern housing development which dates back to start of the industrial revolution and the advent of coal mining. The edges of the towns are generally a mix of red brick and rendered two storey housing. There are a number of large industrial estates which have been developed adjacent to the towns.

4.16 The landscape is crossed by numerous roads linking towns and villages; to the east of the site is the B6273 connecting Hemsworth with Great Houghton, along the northern boundary is Common Road connecting Brierley to South Kirby.

4.17 To the north of Brierley is the modern A628 connecting Cudworth to Hemsworth bypassing Brierley. The A6195 Engine Lane, is located within the valley bottom connecting Shafton to Darfield bypassing the towns of Brierley, Cudworth, Grimethorpe, Great Houghton, along which a number of industrial sites are being developed.

4.18 The Barnsley Boundary Walk (long distant footpath) crosses Brierley Road, Brierley and is routed along the valley floor south towards Grimethorpe before climbing out of the valley to the south of Burntwood Hall. The path is within 1km of the site.

Historical Landscape Interpretation

4.19 Maps from 1850s show that the area of the proposed site is known as Brierley Common, howeverCommon Road has not been established. South Moor Road and the roads to the east of Brierley Gap connecting to South Kirby are present. Ringstone Hill Farm and Brierley Manor are both developed. The town of Brierley exists however and Grimethorpe is not apparent except for the manor house. Carr Plantation to the west of the site is established.

4.20 By 1900 Common Road is established crossing Brierley Common together with the track/footpath along the western site boundary. Brierley is expanding with properties becoming established along Pudding Hill. Grimethorpe is a small hamlet/village by 1906 a number of terrace streets have been developed to the west of the hamlet.

Weather

4.21 The weather is an important factor affecting visual impact assessment. The Met Office[1] publish average statistics for weather patterns for the region, monthly and annual, for maximum and minimum temperatures, days of air frost, hours of sunshine, amount of rainfall - both generally and the number of days when rainfall is above 1mm. Rainfall above 1mm per day, which limits visibility, occurs on an average of 131 days in the year. There are on average 33 days when air frost occurs, with potentially hazy conditions for visibility. This is a relatively sunny part of the United Kingdom, with an average of 1380 hours of sunshine per annum and an average of 824mm rainfall per annum. There are on average potentially 164 days (45%) where visibility conditions are limited by atmospheric conditions.

Landscape Character

Published Landscape Character Descriptions

4.22 The following landscape character assessments and landscape capacity studies have been reviewed:

- Character Assessment of England, Volume 4 East Midlands, 1996, Countryside Agency;
- Barnsley Borough Landscape Character assessment, LUC, 2002
- Landscape Character Assessment of Wakefield District, 2004
- Doncaster Landscape Character and Capacity Study, 2007.

4.23 Landscape Character Areas and Landscape Character Types can be drawn at national, regional, district or even smaller local scales.

- Landscape Character Areas are discrete geographical areas of a particular landscape character type and can only occur at a single location.
- Landscape Character Types are tracts of landscape which have a generic unity of character due to the particular combinations of landform, land cover, pattern and elements. The same landscape character type can occur at several different locations throughout a study area. "Guidelines for Landscape Character Assessment" (Countryside Agency and SNH, 2002).

National Landscape Character Areas

4.24 At a national level, the (former) Countryside Commission and English Nature has classified England into broadly homogenous landscape character areas referred to as National Character Areas (NCAs). The NCAs within the study area are illustrated in Figure 3 National Landscape Character Areas.

4.25 Within the 5km study area there are two NCAs listed below:

- 30 Southern Magnesian Limestone
- 38 Nottinghamshire, Derbyshire and Yorkshire Coalfields

4.26 Analysing the ZTVs and from site visits within the study area it is identified that the impact of the single turbine 67m high to blade tip on the Ringstone Hill Farm site could only give potential significant impacts within 5km of the site which restricts potential significant impacts to primarily within the Nottinghamshire, Derbyshire and Yorkshire Coalfields within which character area the site lies. The ZTVs indicate that there could be views from the Southern Magnesian Limestone 4km or more to the east of the site however these

[1] The data quoted is for the weather station at Sheffield and were obtained from The Met Office website: http://www.metoffice.gov.uk/climate/uk/averages/.

would not be significant due to distance from the site and the effect of intervening settlements, infrastructure, landform and woodland within the view.

4.27 The key characteristics of the 30 Southern Magnesian Limestone are:

- Elevated ridge with smoothly rolling landform dissected by dry valleys.
- Predominantly Magnesian Limestone geology which influences soils and ecological character.
- Long views over surrounding lowland.
- Fertile, intensively-farmed arable land.
- Large fields bounded by low-cut thorn hedges creating a generally large-scale, open landscape.
- Large number of country houses and estates with parkland, estate woodlands, plantations and game coverts.
- Woodlands combining with open arable land to create a wooded farmland landscape in some parts.
- Unifying influence of creamy white Magnesian Limestone as a building material often combined with red clay pantile roofing.
- River valleys and gorges cutting through the ridge exposing the underlying rock.
- Industrial influences, especially in the Aire and Don Valleys and other central valleys and along the Coal Measures fringe, with mines, shale tips, transport routes, power lines and industrial settlements.
- Main transport corridor of the A1 which is often apparent in areas of otherwise undisturbed rural landscape.
- Archaeological remains reflecting the long-standing importance of the area for settlement and transport.

4.28 The key characteristics of the 38 Nottinghamshire, Derbyshire and Yorkshire Coalfields are: Southern Magnesian Limestone are:

- Widespread evidence of industrial activity including mine buildings, former spoil tips and iron and steel plants.
- Complex mix of built-up areas, industrial land, dereliction and farmed open country.
- Many areas affected by urban fringe pressures creating fragmented and downgraded landscapes.
- Substantial areas of intact agricultural land in both arable and pastoral use.
- Small, fragmented remnants of pre-industrial landscape and semi-natural vegetation, including many areas of woodland, river valley habitats, subsidence flashes and other relict habitats.
- Ever-present urban influences from major cities, smaller industrial towns and mining villages.
- Widespread influence of transport routes, including canal, road (M1, M62) and rail, with ribbon developments emphasising the urban influence in the landscape.
- Rolling landforms with hills, escarpments and broad valleys.
- Local variation in landscape character reflecting variations in underlying geology.
- Strong cultural identity arising from history of coal mining and other heavy industry.

Regional Landscape Character Types

4.29 Within the 5km study area there are 9 Landscape Character Types, designated within The Barnsley Metropolitan Borough Council's: The Barnsley Borough Landscape Character Assessment, Doncaster Metropolitan Borough Council's: Doncaster Landscape Character Assessment and Capacity Study and the Wakefield Metropolitan Borough Council's: Landscape Character Assessment of Wakefield District which are listed below and are illustrated in Figure 4 Regional Landscape Character Areas.

Barnsley Borough Council

- Lowland River Floor – C2 Lower Dearne
- Settled Arable Slopes – D1 Northeast Barnsley, D2 East Dearne, D3 West Dearne
- Settled Wooded Farmland - E3 Grimethorpe.

Doncaster Metropolitan Borough Council

- Coalfield Farmland - A3 Bamborough to Hooton Pagett.

Wakefield Metropolitan Borough Council

- South East Coalfield
- South West Coalfield
- Went River Basin.

The Barnsley Borough Landscape Character Assessment

LOWLAND RIVER FLOOR

C2: LOWER DEARNE LOWLAND RIVER FLOOR

Key Characteristics are:

- Flat valley floor of varying width and degrees of enclosure, framed by sloping valley sides outside the character area.
- Diverse range of land use including agriculture, recreation, residential, industry, commercial, communication, landscape renewal and nature conservation.
- Substantial areas of agricultural land both in arable and pastoral use, intermixed and surrounded by other land uses and linear features.
- Large areas without built development or without a dense covering of trees, giving a sense of openness in much of the character area.
- Small areas of scrub and trees scattered throughout the character area, often associated with reclaimed or abandoned land, dismantled railway lines, watercourses and newly landscaped areas.
- Disused and active linear transport/communication routes running along and across the valley floor including dismantled railways, pylons, the River Dearne and the newly constructed A6195 road.
- Immature, newly created landscapes in the form of open grass areas and young tree planting, associated with reclaimed industrial areas and the A6195.
- Localised clusters of new warehouse style buildings bringing large scale buildings into the relatively open landscape.
- Open water in the form of the River Dearne, streams, dikes, flashes and manmade lakes.

SETTLED ARABLE SLOPES

D1: NORTH EAST BARNSLEY SETTLED ARABLE SLOPES

Key characteristics are:

- Sloping/undulating landform with small valleys and ridges providing localised variation in terms of views and sense of enclosure.
- Arable farmland comprising medium to large field units with no obvious pattern.
- Large areas of residential and industrial development creating a strong urban influence.
- Distant views to Barnsley - industrial development and residential settlement outside the character area, bringing an additional urban influence to the overall character of the landscape.
- Irregular, degraded and declining field boundaries of varied materials.
- Lack of tree cover providing little in terms of enclosure or interest on the vertical plane.

- Pylons and power lines are visually striking elements across open farmland.
- Disused industrial quarries, tips and spoil heaps provide strong visual cues to industrial heritage and present day regeneration initiatives.
- Significant number of primary and secondary vehicular routes gives an active pace to the landscape.
- Disused railway lines are strong linear features of ecological significance.
- Scrubby margins, unmanaged field boundaries and compartmentalised field units on urban edges give a degraded quality to the landscape.
- Abrupt transitions between urban and rural land.

D2: EAST DEARNE SETTLED ARABLE SLOPES
Key Characteristics are:

- Topographically varied landscape ranging from sinuous undulations at the higher elevation to subtle slopes on lower ground.
- Network of large open, predominantly arable farmland, of medium to large field units of no consistent or obvious pattern.
- Remnant hedgerow field boundaries occurring sporadically and in generally poor condition.
- Plethora of dikes running across the arable land.
- Traditional mining settlements - Thurnscoe, Bolton upon Dearne and Goldthorpe.
- Evidence of past and present industrial activity due to presence of disused tips and spoil heaps, and working warehouse units on settlement edges and within the rural landscape.
- Sense of urbanisation with skyline views of settlement roofscapes.
- Proliferation of scrubby, compartmentalised field units adjacent to settlements at the urban interface.
- Lack of vertical elements in the rural landscape with little to break up the horizontal plane.
- Far reaching views providing a sense of openness and exposure.

D3: WEST DEARNE SETTLED ARABLE SLOPES
Key Characteristics are:

- Rolling landform consisting of broad rounded ridge that gently slopes towards the Rivers Dove and Dearne.
- Land use mainly agriculture and residential but with some commercial, industrial, communication and landscape renewal.
- Tracts of arable farmland with some short term ley and horse grazing.
- Degraded hedgerow field boundaries and some post and wire fencing.
- Scattered stone farmsteads, some with modern outbuildings.
- Untidy areas adjacent to farmsteads with scrap machinery, farm waste and horse grazing.
- Traditional mining settlements within to the character area – Ardsley, Darfield.
- Intact farmland up to urban edge in many locations.
- Stone walls and infrequently managed hedgerows form boundaries between roads and farmland.
- Small infrequent blocks of deciduous trees on valley slopes, but few mature trees on the more exposed higher ground.
- Views beyond character area boundaries to settlements, reclaimed tips, working warehouse units and upland part of the Borough.

SETTLED WOODED FARMLAND
E3:GRIMETHORPE SETTLED WOODED FARMLAND
Key characteristics are:

- Ridge top plateau leading to a rolling valley side with frequently steeper land relating to the water-courses that flow towards the valley floor.
- Mixed land use with agriculture, woodland, and residential areas with associated recreational green spaces.
- Arable farmland relating to rolling land and permanent pasture on steeper slopes.
- Hedgerows with some gaps containing occasional mature trees bound fields.
- Narrow strips of woodland along watercourses.
- Irregularly shaped woodland blocks are linked to form a larger area of woodland.
- Urban settlements on lower valley side.
- Recreational green space on urban edges merges with open farmland.
- Isolated lodges, halls and individual dwellings, many constructed in sandstone, are scattered across the open countryside and within settlements.

Doncaster Metropolitan Borough Council
COALFIELD FARMLANDS
A3 – BARNBOROUGH TO HOOTON PAGNELL COALFIELD FARMLANDS
Key Characteristics are:

- Underlain by coal measures.
- Complex undulating topography cut by many small streams arising from springs.
- Landform rises up as an escarpment to the limestone plateau immediately to the east.
- Irregular patchwork of arable fields and pasture.
- Small to medium fields bounded by mature hedgerows and trees.
- Compact historic stone built settlements.
- Scattered farmsteads.
- Historic estates with associated halls, woodland, ponds and pasture.
- Small and medium mixed woodland including ancient woodland scattered across the area.
- Some woodland on limestone escarpment in the east.
- Many public rights of way and farm tracks.
- Network of minor roads.
- Occasional major transport corridors including railway and main roads.
- Some views to urban areas to the east and west outside the LCA.

Wakefield Metropolitan Borough Council
SOUTH EAST COALFIELD
Key characteristics are:
The landscape has been extensively remodelled by coal extraction and restoration to intensive agricultural use. There are few hedgerows and hedgerow trees, and very little woodland. Many villages developed in to small towns as a result of coal mining in the C20th. The subsequent collapse of the industry has led to derelict sites and social deprivation, although reclamation is ongoing. As a result of these factors the landscape has lost most of its ancient elements and has a fragmentary, over exploited character.

South Kirby, South Emsall and North Emsall
The area forms a natural bowl through which flow Frickley Beck, Langthwaite Beck and Hague Hall beck. The landscape is dominated by the former mining towns and derelict collieries at South Kirby, Ferrymoor

Riddings and South Emsall Frickley. There is a high ridge to the west at Dunsley, and around Dale Lane, South Emsall towards Upton. These ridges were settled in the Iron Age and Romano British periods, earthworks of an enclosure survive at South Kirby, together with extensive cropmarks of settlements, field systems and tracks.
A few plantations survive (Ball Park Wood, Cobb Carr Plantation, Hague Plantation) with some hedgerows, although intensive agriculture has resulted in the removal of most of the woodland and hedges in the area. Around the Beck bottoms and the collieries a number of wetlands and wild degraded areas survive. Part of South Kirby colliery is now restored and consists of a young country park landscape with woodland plantations, open water and grassland with orchids. There is an important network of footpaths, cycle routes and bridle ways forming the SESKU ringway.

SOUTH WEST COALFIELD
Key characteristics are:
The south western part of the District is the fringe is a zone of transition between Pennine foothills and lowland river valley. This area is characterised by village settlements on high ridges. A significant amount of ancient woodland survives and a reasonable amount of hedgerows, although many have been cleared. Dry stone walls of local sandstone also form some boundaries, which are unique to the south western side of the district. Numerous becks flow in to the River Calder, their valleys tend to be steep sided and wooded. The area has been mined for coal and iron since the medieval period; however few traces remain following restoration. The area retains its rural character, and has escaped the urbanisation of the South Eastern Coalfield. Villages have expanded for residential rather than industrial reasons. Villages such as Crigglestone, Durkar and Sandal have been absorbed into the wider urban area of Wakefield, and much of the surrounding rural landscape has been lost as a result of this suburbanisation.

WENT RIVER BASIN
Key characteristics are:
The area is defined by the River Went and its tributaries, Little Went, Went Beck, Hessle Beck, and Barr's Drain. The basin is essentially flat and low lying, rising to the west around High Ackworth, and to the south around Badsworth and Thorpe Audin. The area is intensively farmed with few areas of trees and decreasing cover of hedgerows and hedgerow trees. The largely arable landscape consists of large open fields. It is well drained and intensively used, so there are few wet lands or areas of open water.

Sensitivity of Landscape Character to Wind Farm Development

4.30 The Barnsley Borough Landscape Character Assessment provides information on the sensitivity and capacity of each character area to development although not specifically to wind energy development. It adopts a methodology where landscape sensitivity is a judgement about the degree to which a landscape character area can accommodate change without adverse effects on its character. Landscape capacity is a related judgement about the amount of development that can be accommodated.

4.31 The D1 North East Barnsley Settled Arable Slopes states that: landform plays a significant role in terms of its influence upon this landscape's capacity to accommodate development. D1 North East Barnsley Settled Arable Slopes has a more enclosing landform than character areas D2 East Dearne Settled Arable Slopes and D3 West Dearne Settled Arable Slopes, reducing the degree of intervisibility from both within and outside of the character area. There are, however, a number of undeveloped slopes on more open ground, visible from other adjacent character areas, that would be highly sensitive to change. The areas of highest elevation tend to be those already developed with ridgetop settlement a characteristic feature of the landscape (such as the continuous settlement between Shafton Two Gates and Cudworth Common). As such, the higher, flatter ground is considered less sensitive than the slopes when viewed in the context of existing settlement location and form.

4.32 There is little in terms of screening vegetation. This considered, in the context of large areas of gently sloping land of little enclosure, many areas of the landscape can be seen as vulnerable to development. There are, however, significant tracts of already degraded urban fringe land, which offer scope for development. In light of the above, landscape sensitivity to and capacity for, development are both judged to be **Medium**

4.33 The E3 Grimethorpe Settled Wooded Farmland character area is partially enclosed by landform and woodland blocks. There are, however, extensive views into the area from character areas D3 West Dearne Settled Arable Slopes and C2 Lower Dearne Lowland River Floor. The upper slopes are much more visible than the lower slopes. Large tracts of open intact countryside, with arable fields and woodlands, and isolated farms and houses, cover much of the area. The character of these rural areas would be sensitive to development. Some lower slopes, that are enclosed by landform and built form, would be less sensitive to development.

4.34 In view of the above, landscape sensitivity to further built development is judged to be high and landscape capacity is considered to be **Low**.

4.35 Coalfield Farmlands Landscape character type, A3 – Barnborough to Hooton Pagnell Coalfield Farmlands. Broad Landscape Capacity for Windpower: Windpower is a new type of development in this area which may disrupt a high quality and value landscape which is strongly rural and relatively undisturbed. The development wouldn't fit with the scale of the small to medium fields found in this landscape. The simple form of wind turbines may fit with the simple landscape, but the movement may induce a further loss of tranquillity. The turbines are likely to be visible for some distance particularly if located on the more elevated and open areas of the LCA.

4.36 The potential for mitigation is considered low and in addition to the development guidance detailed in part 3 of the document it could be achieved by the following:

- Avoid locating near or fragmenting historic elements and conservation areas.
- Locate away from settlements.
- Locate in hollows in the landform and possibly use existing woodland to screen lower parts.
- Use existing landscape elements such as the landform to guide layout of turbines.
- Use smaller scale turbines to fit better with the scale of the landscape and to reduce visual impacts.
- Avoid constructing roads or upgrading existing minor roads for installation and management access.

4.37 The landscape capacity for Windpower turbines in A3 – Barnburgh to Hooton Pagnell Coalfield Farmlands is judged to be **Low to None**.

4.38 In this LVIA, the sensitivity of the immediate landscape character and the sensitivity of the landscape character types/areas surrounding the site have been identified. It should be noted that no wind turbines have been approved within the study area or immediate surrounding landscape.

4.39 Each of the landscape character types/areas identified in Paragraph 4.29 above has been considered below in relation to its sensitivity to wind energy development and summarised in Table 4.1.

Table 4.1 Sensitivity of Regional Landscape Character Areas to Development/Wind Energy Development

Reference Code	Regional Character Type	Approximate distance to Site	Sensitivity to Development/Wind Energy
C2	Lowland River Floor – Lower Dearne	3km	High
D1	Northeast Barnsley Settled Arable Slopes	Site lies within LCA	Medium
D2	East Dearne Settled Arable Slopes	2.5km	Medium
D3	West Dearne Settled Arable Slopes	4km	Medium
E3	Grimethorpe Settled Wooded Farmland	20m	High
A3	Barnborough to Hooton Pagnell Coalfield Farmlands	100m	High
	South East Coalfield	200m	High
	South West Coalfield	4.8km	High
	Went River Basin	4.8km	High

Landscape Designations

4.40 All landscape and other relevant designations are illustrated in Figure 05 Designated Landscapes.

4.41 There are no national or regional designations covering the site. The site is part of the Greenbelt as designated by BMBC which extends across the local authority boundaries into WMBC and DMBC
Those National, Regional or Local Landscape designations covering the 5km radius study area are identified below.

- National Parks – None.
- World Heritage Sites – None.
- Areas of Outstanding Natural Beauty – None.
- Greenbelt – The Greenbelt extends across the entire 5km radius study area and has been adopted by the three LPAs of BMDC, DMDC and WMDC, however the ZTV indicate very limited potential for views from within the Greenbelt and in reality intervening vegetation etc would screen most views, therefore the proposal is unlikely to give rise to any significant impacts.
- Registered Parks and Gardens – None.
- Conservation Areas – within the 5km there are 2 Conservation Areas at Breirley (BMBC) and Clayton (DMBC). There would be some views from Brierley adjacent to the site, these would be seen in the context of other urban features, buildings, lighting columns etc. From Clayton views are screened by landform and vegetation (Howell Wood Country Park). Where possible, available views would be seen through the overhead electricity line and pylons. The nature of Clayton means that views are internal with only the property to the north of the village having the potential for views out to the site. Due to the distance of these from the site, intervening screening views towards the site are extremely limited and unlikely to give rise the significant impacts.
- Country Parks – Howell Wood Country Park is an area of mixed woodland from which there are views from the northern boundary but not from within the wood itself. Fitzwilliam Country Park the ZTVs indicate that there would be visibility of the turbine from the park however in reality the intervening screening from local landform, buildings and vegetation would screen most views and

where views are available at approximately 5m from the site would not have a significant impact on the site.

Visual Receptors

4.42 Due to the height of the turbines (45m to nacelle and 67m to tip of blade) and the variations in topography in the surrounding area, there is the potential for the development to be visible from an area extending beyond the 5km radius study area. However, following initial site visits and assessments, it was determined that there was little potential for the development to result in any significant visual effects at distances over 5km from the site. Areas with potential visibility of the proposed turbine are illustrated in Figure 6 Zone of Theoretical Visibility (ZTV) 45m to hub height Figure 07 and Zone of Theoretical Visibility (ZTV) 67m to blade tip Figure 8 Cumulative Zone of Theoretical visibility 67m to blade tip & Marr Wind turbine and Figure 9 ZTV 67m to blade tip showing National and Regional Landscape Character Areas/Types.

Residential Receptors / Properties near to the site

4.43 Residential Amenity Surveys are used to determine the significance of the visual impact to receptors at individual properties, the and whether the potential impact would be assessed as being 'overbearing' or 'overwhelming' on that property.

4.44 A turbine of the height of the one being proposed for the Ridge Farm site (45m to Nacelle, 67m to tip of blade) are unlikely to give rise to an 'overbearing' or 'overwhelming' effect at distances of more than 335m, (greater than 5x the height of the turbines) unless the turbine were located on ground considerably elevated above the receptor.

4.45 The nearest property with a view of the proposed development is on Common Road (400m from the proposed turbine) however intervening vegetation screens most of the views towards the site. Viewpoint 3 Manor Farm, Pudding Hill illustrates the view from the properties on the edge of the village. Properties along Brierley Road, Brierley have views up to the site and have been assessed in Viewpoint 4 Hill Crescent/Brierley Road. The majority of residential properties are in excess of 1km from the proposed turbine and would not experience significant impacts from the development.

Settlements

4.46 The settlement s of Brierley, Grimethorpe and Hemsworth have been identified as having the potential to experience significant visual effects by virtue of their relative proximity to the site and also the fact the ZTV indicate some visibility of the proposed turbine.

4.47 The ZTVs indicated that within Brierley located to the north-west of the proposed turbine there is the potential for views towards the site. The potential of views however are limited to those properties and areas located on the south and east edge of the town. Although the ZTVs indicate views along the entire edge of the town in reality many views are screened or filtered by buildings, walls and vegetation. Viewpoint 4 Hill Crescent/Brierley Road illustrates the views from this area.

4.48 The ZTVs indicate that there would be the potential for views from within Grimethorpe. As the proposed turbine is located on the ridge of the eastern valley side there will be the potential for views from within the linear settlement along the valley bottom, however the impact on the view would not be Significant due to the impact of surrounding property, lighting columns etc. Viewpoint 5 Burntwood Road, Grimethorpe illustrates the views from this area.

4.49 Hemsworth lies to the north of the site, at a slightly lower elevation within the limestone plateau. There is the potential for views of the turbine from the southern edge of the town, however in reality these views are generally screened by intervening vegetation, etc and at distances in excess of 1.5km it has been

assessed that there would be No Significant impact on the town. Viewpoint 6 A628/B6422 Hague Lane Roundabout illustrates the views from this area.

Recreational Long Distance walking/Cycling Routes:

4.50 There are no national long distance footpaths or cycle routes which pass through the 5km study area.

4.51 The Barnsley Boundary Walk passes with 1km of the proposed site as it emerges from Brierley at Brierley Road before turning south towards Grimethorpe. The footpath passes through and adjacent to numerous settlements, and various landscape types including industrial estates, etc. It has been assessed that the turbine would have No Significant impact on the route. Viewpoint 4 Hill Crescent/Brierley Road and Viewpoint 5 Burntwood Road, Grimethorpe illustrates the potential views from this path.

Public Rights of Way (PROW)

4.52 Within the 5km study area there are numerous PROWs (footpaths and bridleways) three of which pass through the proposed development site. Views from footpaths within the study area towards the proposed turbine are dependent on the direction of path/walkers, intervening landform, hedgerows, woodlands, trees, buildings etc. It has been assessed that from footpaths with a clear uninterrupted view of the proposed turbine which are within 335m would experience a dominating impact from the turbine. This involves the footpaths within the site boundary. The turbine would have a defining influence along footpaths between 335m and 1.35km including a small section of the Barnsley Boundary Walk. On footpaths up to 3.35km the turbine would form an important but not defining element within the view however this would not necessarily be Significant.

Assessment Viewpoints

4.53 The desk studies, site visits and interpretation of ZTVs together with discussions with representatives of NCC enabled an agreed number of representative viewpoints to be jointly identified. These views were chosen as representative views and are not intended to cover every single view possible but are intended to be representative of a range of receptor types (e.g. residents, walkers, road users etc) and also distances from the propose turbines.

4.54 Table 4.2 identifies the 6 viewpoints that were chosen and indicates which of them are illustrated with wireline or photomontages. The locations of the viewpoints are illustrated in Figure 1 Study Area 5km Radius.

Table 4.2 Assessment Viewpoints

Viewpoint number	Location	OS Map Reference	Wireline Produced	Photomontage produced
1	Burntwood Hall Care Centre	442867 409347	Yes	Yes
2	Burntwood Hotel & Spa, Common Road	442346 410692	Yes	Yes
3	Manor Farm, Pudding Hill, Common Road	441845 410988	Yes	Yes
4	Hill Crescent, Brierley Road	441127 410687	Yes	Yes
5	Burntwood Road, Grimethorpe	441966 401955	Yes	Yes
6	A628/B6422 Hague Lane Roundabout	443624 412118	Yes	Yes

5.0 Summary of the Assessment of Effects on Landscape Features

5.1 A description of the main effects of landscape features is given below followed by a comment on the significance of the effect. All of the effects are direct in that specifically affect a particular feature with the *Ringstone Hill Farm site.*

Construction Phase

5.2 The site utilises the existing access into the Ringstone Hill Farm to the south of the site, from the B6327 South Moor Road. At the end of the farm access road the access to the turbine turns to the north through the farm yard and utilises the existing track along the western field boundary. The track will be upgraded from the farm yard to the proposed turbine, including a temporary turning bay and an area of hard standing for a crane. The construction of the site access track will require the removal of the arable field and soils. The compound and access tracks would require the loss of a small section of the arable field, there would be a very low magnitude of change to its extent within the character area.

5.3 There would be **No Significant Effect** on any landscape features during the construction phase.

Operational Phase

5.4 The turbine and access track are proposed within an open agricultural field, the new structures would not interfere with any existing features or require the loss of vegetation other than described above. There would be a very low magnitude of change in the overall coverage of arable land within the character area

5.5 There will be No **Additional Effect** on any landscape features within the site over and above those described above under Construction Phase.

De-commissioning Phase

5.6 There would be **No Additional Effects** on landscape features during the decommissioning phase.

5.7 The sensitivity and capacity of the site is to development is **Medium**, the Magnitude of Change on Landscape Features is considered to be **Low**, and therefore the Significance of the Impact is **Moderate/Slight** and therefore **Not Significant.**

Conclusion

5.8 There would be **No Significant** impacts on landscape features within or adjacent to the proposed site during construction, operation or decommissioning of the proposed turbine and associated works.

6.0 Summary of the Assessment of Effects on Landscape Character and Landscape Designations

Construction Phase Effects on Immediate Landscape Character (within approximately 1km of the turbines)
6.1 There would be some temporary effects during construction in addition to those assessed as permanent effects described below. The additional effects are relatively minor in the context of the operational life of the wind turbine.

6.2 During the construction period, there would be earth movements associated with the construction of the access track, turbine foundation and underground cable routes. The impact would result in excavation of soils, stockpiling and construction vehicle movement. These activities are not uncommon within this *landscape with its mix of agriculture and industry.*

6.3 The security fenced construction compound would result in a low magnitude of change and a temporary impact in the immediate landscape. There would be a crane required to construct the turbine which would be on site for a relatively short period of time and have a minimal impact.

6.4 The temporary impacts during the construction phase are considered to be **Low** magnitude and a **Slight Additional Effect** over and above those described below for the Operational Phase.

Operational Phase Effects on Immediate Landscape Character (within approximately 1km of the turbines)
6.5 Viewpoint 1 Burntwood Hall Care Centre & Viewpoint 4 Hillside Crescent/Brierley Road lie within 2km of the turbine and illustrate the likely effects on landscape character within this area.

6.6 As discussed above, there would be no significant effects of the proposed development on any landscape features; therefore any effects would be perceptual rather than physical.

6.7 The access track utilises an existing farm entrance, is a similar width to other tracks in the area, parallel to the field boundary and would appear as part of the exiting track. It would therefore have a minimal impact on the landscape pattern.

6.8 The substation is a small structure which would be located adjacent to the turbine and have minimal impact on the surrounding landscape.

6.9 The wind turbine would appear as a manmade structure in a landscape where there is considerable evidence of other large manmade industrial structures of similar and larger scale.

6.10 The wind turbine would appear as a tall structure in a landscape which contains numerous precedent tall structures (Industrial buildings, pylons, masts, chimneys etc,). The movement of the turbine blades would be evident within a landscape which contains considerable movement along the adjacent road system.

6.11 The sensitivity of the area is to wind energy development is **Medium - Low**, the Magnitude of Change on the Immediate Landscape Character is considered to be **Medium**, and therefore the Significance of the Impact is **Moderate/Slight** to **Slight** and therefore **Not Significant.**

Decommissioning Phase Effects on Immediate Landscape Character (within approximately 1km of the turbines)
6.12 None of the decommissioning works at ground level would be visible beyond the immediate surroundings of the application site boundary. The only additional effect would arise during a short period when a crane would dismantle the turbine, and would be barely perceptible.

6.13 Therefore, there would be **No Additional Effect** on landscape character in the immediate landscape during the decommissioning phase.

Construction Phase Effects on Wider Landscape Character (5km)

6.14 None of the construction works at ground level would be visible beyond the immediate site boundary. Therefore the only additional effect would arise for a limited period when a crane is erecting the turbine. This would only be evident for a few days and in the context of the works would be barely perceptible.

6.15 Therefore, there would be **No Additional Effect** on landscape character in the wider landscape during the construction phase.

Operational Phase Effects on Wider Landscape Character (5km)

6.16 The effects on the wider landscape character are assessed with reference to the regional landscape character areas and types identified in Paragraphs 4.26 and 4.29. The effects on each character type/area are described below.

6.17 The magnitude of change to the landscape character in each regional character area as a result of the proposed Ringstone Hill Farm turbine has been determined using professional judgement based on the following factors:

- The percentage of the overall character area from where the Ringstone Hill Farm turbine would be theoretically visible;
- The distance between the character area and the Ringstone Hill Farm turbine;
- The likely prominence of the turbine in the view; and
- The extent to which the perceptual sense of scale, remoteness, visual composition and pattern would be affected by views of the turbine in the distance.

Natural England, Volume 4 East Midlands
Character Area 38 Nottinghamshire, Derbyshire and Yorkshire Coalfields

6.18 The character area is in excess of 100km long and up to 25km wide in parts has a **Low** sensitivity to wind energy development.

6.19 The ZTVs indicate that there is patchy visibility in the open landscape between the towns and villages scattered around the proposed site. In reality much of this theoretical visibility will be restricted by localised landform, vegetation and buildings limiting the extent of visibility and therefore the potential impact of the proposed turbine.

6.20 The sensitivity of the area is to wind energy development is **Low**, the Magnitude of Change on the Landscape Character is considered to be **Low**, and therefore the Significance of the Impact is **Slight** and therefore **Not Significant.**

The Barnsley Borough Landscape Character Assessment
Settled Arable Slopes – D1 Northeast Barnsley,

6.21 The landscape sensitivity to and capacity for, development are both judged to be **Medium**.

6.22 The proposed site lies within this character type. The ZTVs indicate that there is patchy visibility within the area landscape around the towns of Brierley, Cudworth and Shafton.

6.23 The sensitivity of the area is to wind energy development is **Medium**, the Magnitude of Change on the Landscape Character is considered to be **Low**, and therefore the Significance of the Impact is **Moderate/Slight** and therefore **Not Significant.**

Settled Wooded Farmland - E3 Grimethorpe

6.24 The landscape sensitivity to further built development is judged to be **High** and landscape capacity is considered to be **low.**

6.25 The proposed site lies adjacent to this character area and the ZTVs indicate that within 1.5km there would be wide spread visibility up to the proposed turbine, limited by localised landform and vegetation. Viewpoint 4 Hillside Crescent/Brierley Road and Viewpoint 5 Burntwood Road Grimethorpe are indicative of views within this character type.

6.26 The sensitivity of the area is to wind energy development is **High,** the Magnitude of Change on the Landscape Character is considered to be **Medium**, and therefore the Significance of the Impact is **Moderate** and therefore **Not Significant.**

Doncaster Landscape Character Assessment and Capacity Study
Coalfield Farmland - A3 Bamborough to Hooton Pagett

6.27 The landscape capacity for Windpower turbines is judged to be **Low to None,** the sensitivity therefore is assessed as **High**.

6.28 The proposed site lies adjacent to this character area and the ZTVs indicate that at distances in excess of 2.5km there would be visibility of the proposed turbine, limited by localised landform and vegetation.

6.29 The sensitivity of the area is to wind energy development is **High,** the Magnitude of Change on the Landscape Character is considered to be **Low**, and therefore the Significance of the Impact is **Moderate/Slight** and therefore **Not Significant.**

Wakefield Metropolitan Borough Council
South East Coalfield

6.30 The landscape sensitivity to and capacity for, development have been assessed to be **Medium**.

6.31 The ZTVs indicate that there would be wide spread visibility of the turbine within this character area between the towns of South Hiendley, Hemsworth and South Kirby, however in reality the screening effect of the local landform, vegetation and buildings etc considerably reduce the visibility of the turbine.

6.32 Viewpoint 6 A628/B6422 Hague Lane Roundabout lies within this character area and represents the limited likely effects within this character area.

6.33 Beyond 2km from the site there are limited views towards the turbine. Those areas from which views can be obtained the turbine appears as a small feature in a wider landscape containing numerous overhead transmission lines, pylons, industrial buildings and structures.

6.34 The Magnitude of Change on the Wider Landscape Character is considered to be **Low**. The Significance of the Landscape Effect is therefore considered to be **Moderate/Slight** and therefore **Not Significant.**

Decommissioning Phase Effects on Wider Landscape Character

6.35 Therefore, there would be **No Additional Effect** on landscape character in the wider landscape during the decommissioning phase.

Effects on Landscape Designations - Construction Phase

6.36 The initial studies indicate that there are no landscapes designations, (World Heritage Sites, Areas of Outstanding Natural Beauty, Heritage Coast, Listed Parks and Gardens) within or adjacent to the site.

Conservation Areas

6.37 There are two Conservation Areas within the 5km radius study area Brierley and Clayton at 1.2kmto the north-west and 3.5km to the south-east from the proposed turbine respectively. The ZTVs indicate that there would be visibility of the turbine (and therefore the crane used for construction) from both areas, however in reality whilst some views would be obtained most would be screened by intervening landform, vegetation, trees and hedgerows and individual buildings.

6.38 The site cannot be seen from either area therefore all earthworks etc would not be visible. Construction traffic would not use routes through either Conservation Area.

6.39 The sensitivity of the conservation areas is assessed as being **Very High**, The Magnitude of Change is considered to be **Low**. The Significance of the Impact on the Conservation Areas is assessed as **Moderate**, and therefore there would be **No Significant Effect** on the above as they are sufficiently separated from the site and screened by intervening vegetation and buildings.

Greenbelt

6.39 The entire 5km radius study lies within the area designated as the Barnsley, Doncaster and Wakefield Greenbelts, however the ZTVs indicate limited potential for views from within the Greenbelt and in reality intervening vegetation etc would screen most views and impact on their openness, therefore the proposal is unlikely to give rise to any significant impacts.

Effects on Landscape Designations – Operational Phase

6.41 There would be **No Additional Effect** on Landscape Designations during the Operational phase.

Effects on Landscape Designations – Decommissioning Phase

6.42 There would be **No Additional Effect** on landscape character in the wider landscape during the decommissioning phase.

Conclusion

6.43 There would be **No Significant** impacts on the landscape character of the site or immediate area, or within Character areas or Types or within any designated landscape as a result of the construction, operation and decommissioning of the proposed turbine and associated works.

7.0 Outline of the Assessment of Effects on Visual Amenity

Effects on Assessment Viewpoints

7.1 For each of the representative viewpoints a short description is give of the baseline view followed by a description of the features of the development, which would be visible from that view point. This includes a description of the visibility of the turbine hub and blades. For each viewpoint there is a comment on how vegetation, buildings or topography would affect the actual visibility of the turbine. A comment on the significance of visual impacts is given for each view point. Any potential cumulative effects are also discussed for each viewpoint.

7.2 A summary of the sensitivity of the view point, magnitude of change in the view and significance of effect prior to and following potential proposed mitigation measures is given in Table 7.1. Where a view point represents more than one receptor group (e.g. residents and factory workers) the significance rating for both receptor group is carried forward to the table.

General guidance in relation to the use of the submitted photomontages

7.3 It is acknowledged that while the computer generated photomontages have been prepared by the Waterman Group in accordance with the guidelines for best practice recommended by Scottish Natural Heritage and are as accurate as possible within the capabilities of the ReSoft software used, the images are perhaps best used in conjunction with a site inspection from the representative viewpoints.

Representative Viewpoint I. Burntwood Hall Care Centre, some 1.1km to the south of the proposed wind turbine at an elevation of approximately 105m AOD. This view is representative of the nearest residential properties and the longest available road user view to the south of the development. Burntwood Hall Care Centre is enclosed with a 2-3m high stone wall and mature trees within its grounds limiting views to the north towards Ringstone Hill Farm.
See Figure 10 Viewpoint 1 Burntwood Hall Care Centre and Figure 11 Wireline and photomontage, Burntwood Hall Care Centre

Existing view.
The view is across gently undulating farmland under arable production, the land generally slopes up to Ringstone Hill Farm where the farm buildings surrounded with mature trees sit upon the horizon with the angular landform of the reservoir to the west of the farm. The B6273 South Moor Road curves across the fore and middle ground to the horizon. In the foreground the road is open without hedgerows but with raised verges. Hedgerows appear in the middle distance enclosing the road. Either side of the road there are rectangular arable fields with well maintained hedgerow boundariesup to 1.5m high.

On the horizon to the east of the road is Brierly Gap, The Robin Hood Hotel, currently unoccupied, a residential property and a telecommunications mast surrounded with mature trees and shrubs, beyond which in the far distance can be seen a power station with columns of steam and overhead electricity lines.

To the west there are long distance views across the valley over the towns of Grimethorpe and Cudworth towards Barnsley and the hills in the far distance. Holmfirth mast is visible on the far horizon, there are also chimneys and towers visible within the various settlements including those at the industrial works at Cudworth.

Predicted view with operational wind turbine
The turbine is clearly visible located between the farmhouse and the large barn to the east, rising above the horizon and the mature trees which partially screen the farm buildings. The turbine appears as part of the farm steading.

Cumulatively no other wind turbines are visible in the view.
Type and sensitivity of visual receptor
High – residents with a view of the proposed turbine
Medium – users of minor roads

Magnitude of change to baseline view.
Medium

Assessed significance of visual impact
Moderate – Residents
Moderate – Minor road users

Mitigation
Not considered appropriate from this view point.

Representative Viewpoint 2 Burntwood Hotel & Spa, Common Road some 0.35km to the north of the proposed wind turbine at an elevation of approximately 105m AOD. This view is representative of the short distance views from the residents, footpath users and road users in the area.
See Figure 12 Viewpoint 2 Burntwood Hotel, Common Road, Figure 13 Wireline Burntwood Hall Care Centre and Figure 14 Photomontage Burntwood Hall Care Centre.

Existing view.
The view is looking south from the entrance to the Burntwood Hotel and Spa across Common Road towards the sites northern boundary a 1.5m high well maintained and complete mixed hawthorn/blackthorn hedgerow. Views to the landscape beyond the immediate site are screened by the hedgerow. Within the road corridor there are grass verges on both sides and street lighting columns above the hedgerow horizon.

To the east of the junction of Common Road and the B6273South Moor Road is Brierly Gap, The Robin Hood Hotel, currently unoccupied, a residential property and a telecommunications mast all surrounded with mature trees and shrubs.

Predicted view with operational wind turbine
The proposed turbine is clearly visible rising above the hedge and the street lighting in the foreground.

Cumulatively no other wind turbines are visible in the view.

Type and sensitivity of visual receptor
Medium – Hotel users
High – footpath users
Medium – users of minor roads

Magnitude of change to baseline view.
High

Assessed significance of visual impact
Hotel users - **Moderate**
Footpath users - **Substantial**
Users of minor roads – **Moderate**

Mitigation
Mitigation measures such as maintaining the hedge at 2m or more would assist in screening the turbine from road and footpath users, and the incorporation of trees along the hedgerow would assist in further screening the proposed turbine.

Representative Viewpoint 3 Manor Farm, Pudding Hill/Common Road some 1.0km to the north-west of the proposed wind turbine at an elevation of approximately 100m AOD. This view is representative of the near distance views from residents of Brierley, Manor Farm and the eastern edge of Brierley Conservation Area, walkers and minor road users within the area.
See Figure 15 Viewpoint 3 Manor Farm, Pudding Hill, Common Road and Figure 16 Wireline and photomontage, Manor Farm, Pudding Hill, Common Road.

Existing view.
The view is looking south from the farm access across gently rolling and rising pastures with gappy, poorly maintained hedgerow and post and wire boundaries towards the site. The street lighting columns along Pudding Hill/Common Road can be seen rising up the hill towards the Burntwood Hotel and the B6273 South Moor Road. To the east of the road the Sports Centre/Spa of the Burntwood Hotel which screens views towards. There are a number of trees along the field boundaries which are generally overgrown hedgerow species.
Across the middle distance in an east to west direction is located an overhead electricity line on timber poles.

The large modern agricultural building at Ringstone Farm and the stock piles of wood chips can be seen on the distant horizon through a gap within the middle distance trees.

Predicted view with operational wind turbine
The proposed turbine is visible above the hedgerow, road signage, street lighting columns and overhead line on timber poles in the fore/middle ground. Although larger than the other vertical features in the view the turbine is not incongruous.

Cumulatively no other wind turbines are visible in the view.

Type and sensitivity of visual receptor
High – Residents
High - Footpath users
Medium - Users of minor roads

Magnitude of change to baseline view.
Medium

Assessed significance of visual impact
Residents - **Moderate**
Footpath users - **Moderate**
Users of minor roads - **Moderate**

Mitigation
Not considered appropriate from this view point.

Representative Viewpoint 4, Hillside Crescent/Brierley Road some 1,4km to the west of the proposed wind turbine at an elevation of approximately 90m AOD. This view is representative of the near/medium distance views from residents of Brierley, road users and walkers using the area.
See Figure 17 Viiewpoint 4 Hillside Crescent/Brierley Road and Figure Wireline and photomontage, Hillside Crescent/Brierley Road.

Existing view.
The view is looking east across Brierley Road, fields of pasture towards the steeper valley side rising to form the medium distance horizon. The overall landscape is that of a bowl at the head of a valley with Brieley located on the higher ground to the north. The road corridor is defined by a well maintained grass verge and mixed thorn hedgerow up to 1.5m high. Beyond the hedge there are irregular shaped fields, predominantly under pasture, defined by hedgerows with occasional trees and broken with small copses and blocks of woodland. On the steeper slopes areas of rough grazing/scrub are visible.

Along the horizon/ridge line Ringstone Hill Farm and reservoir can be seen, partially screened by mature trees. To the south of Ringstone Hill Farm lies Brierley Manor which is located on the hillside, again surrounded by mature trees which partially screen it from the surrounding landscape. Blocks of woodland and individual trees regularly break above the horizon.

Across the middle distance, from the ridge to the north down the valley in the south, are overhead electricity lines on steel lattice towers and smaller ones on timber poles.

Predicted view with operational wind turbine
The proposed turbine is visible on the ridge line between the residential property at Holm Lea to the north and Ringstone Hill Farm to the south. It is located above the woodland on the steeper hillside slope.

Cumulatively no other wind turbines are visible in the view.

Type and sensitivity of visual receptor
Very High – Residents.
Very high – Footpath users.
Medium – Road users.

Magnitude of change to baseline view.
Medium

Assessed significance of visual impact
Substantial/Moderate – Residents.
Substantial/Moderate – Footpath users.
Moderate/slight – Road users.

Mitigation
Maintain the road side hedgerow up to 2m plus and plant hedgerow trees to screen/break up the view beyond.

Representative Viewpoint 5, Burntwood Road, Grimethorpe, some 1,5km to the south-west of the proposed wind turbine at an elevation of approximately 65m AOD. This view is representative of the medium distance views from residents of Grimethorpe and walkers using the area.
See Figure 19 Viewpoint 5 Burntwood Road, Grimethorpe and Figure 20 Wireline and photomontage, Burntwood Road, Grimethorpe.

Existing view.
The view is looking north-east across undulating valley floor consisting primarily of arable fields towards the steeper south facing valley side of pasture rising up to the medium distance horizon. Along the ridge line to the south of Ringstone Hill Farm is the geometric shaped earthwork, control building and fencing of the reservoir which are prominent. Brierley Manor is partially visible screened by the mature trees within its grounds. Within the valley bottom there are mature trees which follow the meandering route water course; reed beds are visible in the low ground at the bottom of the slope. The view is fragmented by the mature trees, overgrown hedgerows and maintained hedgerow field boundaries The arable fields change to pasture on the steeper slopes of the valley side. Within the bottom of the valley in the foreground is the Hallsteads Moated site.

Predicted view with operational wind turbine
The wind turbine is visible rising above the ridge line to the north of the reservoir. The lower section of the turbine are screened by the landform and the hedgerow.

Cumulatively no other wind turbines are visible in the view.

Type and sensitivity of visual receptor
High – Residents.
Very high – Footpath users.
Medium – Road users

Magnitude of change to baseline view.
Medium

Assessed significance of visual impact
Moderate – Residents.
Substantial/Moderate – Footpath users.
Moderate – Road users

Mitigation
Not considered appropriate from this view point.

Representative Viewpoint 6, A628/B6422 Hague Lane Roundabout, Hemsworth some 2.0km to the north-east of the proposed wind turbine at an elevation of approximately 65m AOD. This view is representative of the medium distance views from residents along the southern edge of Hemsworth and road users in the area.
See Figure 21 Viewpoint 6 A628/B6422 Hague Lane Roundabout and Figure 22 Wireline and photomontage, A628/B6422 Hague Lane Roundabout.

Existing view.
The view is looking south-west across the roundabout on the A628 towards the gently rising land towards the ridge along which lies Ringstone Hill Farm. The road corridor, footpath and grass verge is bounded by timber post and rail fencing hedgerows and young trees, which are beginning to rise above the horizon and screen the views beyond. Street lighting columns are the dominant vertical feature in the view rising above nearby trees and distant horizon.
Beyond the roadside vegetation there are filter views of an undulating landscape of arable fields divided by hedgerows and blocks of mature trees.

Predicted view with operational wind turbine
The proposed turbine is barely visible/distinguishable on the distant horizon above and partially screened by the roadside vegetation in the foreground.

Cumulatively no other wind turbines are visible in the view.

Type and sensitivity of visual receptor
High – Residents.
Low - Road users

Magnitude of change to baseline view.
Low

Assessed significance of visual impact
Moderate/Slight – Residents.
Slight - Road users

Mitigation
Not considered appropriate from this view point.

Effects on Visual Receptor Groups

7.4 From site surveys and the analysis of the assessment viewpoints it is possible to draw some conclusions about the significance of effects on different receptor groups at different distances from the proposed development

Visual Effects on Settlements within 5km of the Turbines

7.5 The screening effect of intervening landform and vegetation prevents or restricted most views from the surrounding settlements, Brierley, Cudworth, Hemsworth, South Kirby etc. Within the surrounding settlements there is very limited potential for views out towards the proposed turbine with views generally restricted to those properties on the edge of the settlements nearest the proposed turbine from which views are further restricted by garden fences, buildings and vegetation.

Settlements

7.6 The settlement s of Brierley, Grimethorpe and Hemsworth have been identified as having the potential to experience significant visual effects by virtue of their relative proximity to the site and also the fact the ZTV indicate some visibility of the proposed turbine.

7.7 The ZTVs indicated that within Brierley located to the north-west of the proposed turbine there is the potential for views towards the site. The potential of views however are limited to those properties and areas located on the south and east edge of the town. Although the ZTVs indicate views along the entire edge of the town in reality many views are screened or filtered by buildings, walls and vegetation. Viewpoint 4 Hill Crescent/Brierley Road illustrates the views from this area.

7.8 The ZTVs indicate that there would be the potential for views from within Grimethorpe. As the proposed turbine is located on the ridge of the eastern valley side there will be the potential for views from within the linear settlement along the valley bottom, however the impact on the view would not be Significant due to the impact of surrounding property, lighting columns etc. Viewpoint 5 Burntwood Road, Grimethorpe illustrates the views from this area.

7.9 Hemsworth lies to the north of the site, at a slightly lower elevation within the limestone plateau. There is the potential for views of the turbine from the southern edge of the town, however in reality these views are generally screened by intervening vegetation, etc and at distances in excess of 1.5km it has been assessed that there would be No Significant impact on the town. Viewpoint 6 A628/B6422 Hague Lane Roundabout illustrates the views from this area.

Visual Effects on Residential Receptors

7.10 Due to the screening effects of intervening landform, woodland planting, hedgerows and specimen trees, buildings and settlements No Significant Impacts on residential receptors have been recorded.

Recreational Long Distance Walking/Cycling Routes:

7.11 There are no national long distance footpaths or cycle routes which pass through the 5km study area.

7.12 The Barnsley Boundary Walk passes with 1km of the proposed site as it emerges from Brierley at Brierley Road before turning south towards Grimethorpe. The footpath passes through and adjacent to numerous settlements, and various landscape types including industrial estates, etc. It has been assessed that the turbine would have No Significant impact on the route. Viewpoint 4 Hill Crescent/Brierley Road and Viewpoint 5 Burntwood Road, Grimethorpe illustrates the potential views from this path.

Public Rights of Way (PROW)

7.13 Within the 5km study area there are numerous PROWs (footpaths and bridleways) three of which pass through the proposed development site. Views from footpaths within the study area towards the proposed turbine are dependent on the direction of path/walkers, intervening landform, hedgerows, woodlands, trees, buildings etc. It has been assessed that from footpaths with a clear uninterrupted view of the proposed turbine which are within 335m would experience a dominating impact from the turbine. This includes the footpaths within the site boundary. The turbine would have a defining influence along footpaths between 335m and 1.35km including a small section of the Barnsley Boundary Walk. On footpaths up to 3.35km the turbine would form an important but not defining element within the view however this would not necessarily be Significant.

Visual Effects on Major Roads /Railways

7.14 There are No Significant impacts on the A6195 Shafton Two Gates to Middlecliffe and A628 Barnsley Road, Brierley to North Elmsall although the ZTVs indicate that would be visibility between the roads and the proposed turbine.

7.15 The ZTVs indicate that there is limited visibility along the route of the B6273 between Burntwood Manor to Great Houghton and a greater degree of visibility as the section of B6273 Burntwood Manor to Hemsworth passes the site. However the impact has been assessed as Moderate and Not Significant.

7.16 The ZTVs indicate that there would be limited visibility between South Kirby and Thurnscoe and between South Kirby and Fitzwilliam railway cuttings, localised landform and vegetation would further reduce visibility and that there would be No Significant impacts along the railway lines.

Conclusion

7.17 The size of the proposed single turbine (45m to hub, 67 to blade tip) within a landscape with a limited size of the visual envelope and further fragmentation of the view within the area with numerous screening elements, hedges, woodland, individual trees, settlements and individual buildings, results in a proposed scheme without many Significant Visual Impacts. In the wider landscape there are a number of comparable size industrial features, e.g. chimneys, over head electricity lines and large industrial buildings which also reduce the significance of the proposed turbine from adjacent viewpoints. The proposed mitigation for those which have been assessed would generally assist in reducing the significance down to acceptable levels

Table 7.1 Visual Receptors viewpoints, Sensitivity, Magnitude of Change, Impact, Mitigation, Residual Impact and Significance

Viewpoint		Sensitivity of Receptors	Magnitude of Change	Visual Impact/Effect	Mitigation	Residual Effect	Significance
1	Burntwood Hall Care Centre	Residents – High Road users – Medium	Medium	Residents – Moderate Minor road users - Moderate	N/A	Residents – Moderate Minor road users - Moderate	Not significant Not significant
2	Burntwood Hotel & Spa, Common Road	Hotel users – Medium Footpath users – High Road users - Medium	High	Hotel users – Moderate Footpath users – Substantial Road users - Moderate	Maintain the hedgerow at 2m plus and plant hedgerow trees	Hotel users – Moderate Footpath users – Moderate Road users - Moderate	Not significant Not significant Not significant
3	Manor Farm, Pudding Hill/Common Road	Residents – High Footpath users - High Road users - Medium	Medium	Residents – Moderate Footpath users - Moderate Road users - Moderate	N/A	Residents – Moderate Footpath users - Moderate Road users - Moderate	Not Significant Not significant Not significant
4	Hillside Crescent/Brierley Road	Residents – Very High Footpath users- Very High Road users - Medium	Medium	Residents – Substantial/Moderate Footpath users- Substantial/Moderate Road users - Moderate	Maintain the hedgerow at 2m plus and plant hedgerow trees	Residents – Moderate Footpath users- Substantial/Moderate Road users – Moderate/slight	Not Significant **Significant** Not Significant
5	Burntwood Road, Grimethorpe	Residents – High Footpath users – Very high Road users - Medium	Medium	Residents – Moderate Footpath users- Substantial/Moderate Road users - Moderate	N/A	Residents – Moderate Footpath users- Substantial/Moderate Road users - Moderate	Not Significant **Significant** Not significant
6	A628/B6422 Hague Lane Roundabout	Residents - High Road users - Low	Low	Residents – Moderate/slight Road users - Slight	N/A	Residents – Moderate/slight Road users - Slight	Not significant Not significant

Table 7.2 Receptors, Sensitivity, Magnitude of Change, Impact, Mitigation, Residual Impact and Significance

Receptor	Sensitivity of Receptors	Magnitude of Change	Visual Impact/Effect	Mitigation	Residual Effect	Significance
Settlements						
Brierley	High	Low	Moderate/Slight	N/A	-	Not Significant
Grimethorpe	High	Low	Moderate/Slight	N/A	-	Not Significant
Hemsworth	High	Low	Moderate/Slight	N/A	-	Not Significant
Major Roads						
A628 Barnsley Road Brierley to North Elmsall	Low	Low	Slight	N/A	-	Not Significant
A6195 Engine Lane- Shafton Two Gate - / Middlecliffe	Low	Low	Slight	N/A	-	Not Significant
B6273 Burntwood Manor to Great Houghton	Medium	Medium	Moderate	N/A	-	Not Significant
B6273 Burntwood Manor to Hemsworth	Medium	Medium	Moderate	N/A	-	Not Significant
Railways						
South Kirby / Thurscoe Railway	Medium	Low	Slight	N/A	-	Not Significant
South Kirby / Fitzwilliam Railway	Medium	Low	Slight	N/A	-	Not Significant

8.0 Summary of the Assessment of Cumulative Effects

8.1 The LVIA assesses the cumulative effects (simultaneous, successive, sequential and perceptual) caused by the development of the site in conjunction with other operational, approved or submitted sites within the planning system.

8.2 Within 5km of the Ringstone Hill Farm site there are currently no other wind farms in operation, approved or submitted sites within the planning system.

8.3 Following consultation with Barnsley MBC it was requested that the cumulative impacts of the Marr Wind Farm were assessed. The Marr Wind Farm is located within Doncaster, 10km to the south-east of the Ringstone Hill Farm site, it consists of four turbines, 80m to hub and 125m to blade tip. The zones of theoretical visibility for both sites are illustrated on Figure 08 Cumulative ZTV – 67m to blade tip & Marr Wind Farm.

Table 8.1 Wind Farm Sites within a 10km Radius from the Proposal

	Site	Distance and direction from Earth Balance	Developer	Number of Turbines	Max Output (MW)	Turbine Tip Height (m)
Operational Wind Farms						
1	Marr	10.0 km south-east	Banks	4	12	125

8.4 The ZTVs and cumulative ZTVs for the Ringstone Hill Farm turbine indicate the potential visibility is limited primarily to within the Nottingham, Derbyshire and Yorkshire Coalfield character area, in reality the screening effect of localised landform, buildings and vegetation would further significantly reduce the potential area of visibility.

8.5 Initial baseline studies and site visits indicated that there was little potential in the surrounding landscape (beyond approximately 5km) from the site for a single turbine to have significant indirect effects on a landscape character areas/types or a receptor's experience of landscape character. Similarly previous studies suggest that a small wind farm with turbines up to 127m would not potentially give rise to significant impacts beyond 10km. This would limit the area which could be Significantly impacted up on to be located between the two sites. Figure 8 Cumulative ZTV – 67m to blade tip & Marr Wind Farm Turbines, indicates the ZTV for Ringstone at 10km and for Marr at 20km.

Cumulative Effects on Landscape Character

8.6 It is accepted that where more than one wind farm is visible at any given location in the landscape, there will be a greater cumulative effect on the landscape character than if only one were present. The following section determines whether any combination of wind farms within 10km of the Ringstone Hill Farm site would result in any greater significance of effect on the National Landscape Character Areas and Local character Types than has been already identified in the main assessment.

NCA 38 Nottingham, Derbyshire and Yorkshire Coalfields	
Landscape Sensitivity	**Medium**
Operational Sites/Baseline	
Theoretical visibility of operational site plus Ringstone Hill Farm Wind Turbine	No simultaneous long distant views of Ringstone with Marr from open landscape from the part of the character area to the south of Ringstone. To the north of Ringstone the Marr site is in excess of 10km away and views towards it are very limited screened by landform, building and vegetation. Very limited visibility elsewhere within the NCA.
Magnitude of cumulative change to the baseline	**Very Low**
Magnitude and Significance of cumulative effect	Marr: **Slight – Not Significant**

NCA 30 Southern Magnesian Limestone	
Landscape Sensitivity	**High**
Operational Sites/Baseline	
Theoretical visibility of operational site plus Ringstone Hill Farm Wind Turbine	No simultaneous long distant views of Ringstone with Marr from open landscape from the part of the character area to the south-east of Ringstone. To the north-east of Ringstone the Marr site is in excess of 10km away and views towards it are very limited screened by landform, building and vegetation. Very limited visibility elsewhere within the NCA.
Magnitude of cumulative change to the baseline	**Low**
Magnitude and Significance of cumulative effect	Marr: **Moderate/ Slight– Not Significant**

LCA South East Coalfield	
Landscape Sensitivity	**Assessed as High**
Operational Sites/Baseline	
Theoretical visibility of operational Marr site plus Ringstone Hill Farm Wind Turbine	Potential for simultaneous long distant views of Ringstone with Marr from open landscape from the parts of the character area to the north and east of Ringstone. The Marr site is in excess of 10km away and views towards it are very limited screened by landform, building and vegetation. Very limited visibility elsewhere within the LCA.
Magnitude of cumulative change to the baseline	**Low**
Magnitude and Significance of cumulative effect	Marr: **Moderate/ Slight– Not Significant**

LCA A3 Bamborough to Hooton Pagnell Coalfield Farmlands	
Landscape Sensitivity	**High**
Operational Sites/Baseline	
Theoretical visibility of operational Marr site plus Ringstone Hill Farm Wind Turbine	No/very limit simultaneous views of Ringstone with Marr from the landscape character area to the south-east of Ringstone. The character area lies between the two sites, however there is very limited potential for successive views to either the Ringstone or Marr developments.
Magnitude of cumulative change to the baseline	**Low**
Magnitude and Significance of cumulative effect	Marr: **Moderate/ Slight– Not Significant**

LCA D1 Northeast Barnsley Settled Arable Slopes	
Landscape Sensitivity	**Medium**
Operational Sites/Baseline	
Theoretical visibility of operational Marr site plus Ringstone Hill Farm Wind Turbine	There is some potential for simultaneous long distant views of Ringstone with Marr from open landscape from the part of the character area to the north of Ringstone. However, the distance between the two developments at 10km is such that the potential for significant impacts is limited.
Magnitude of cumulative change to the baseline	**Low**
Magnitude and Significance of cumulative effect	Marr: **Moderate/ Slight– Not Significant**

LCA Settled Wooded Farmland	
Landscape Sensitivity	**High**
Operational Sites/Baseline	
Theoretical visibility of operational Marr site plus Ringstone Hill Farm Wind Turbine	Very limited potential simultaneous long distant views of Ringstone with Marr from open landscape from the part of the character area to the south-east of Ringstone. Also limited potential of successive views between the two site.
Magnitude of cumulative change to the baseline	**Low**
Magnitude and Significance of cumulative effect	Marr: **Moderate/ Slight– Not Significant**

8.7 The above assessment identifies the potential landscape effects for the proposed turbine at Ringstone Hill Farm in relation to the existing Marr wind farm. The principle effects are summarised below.

8.8 The proposed wind turbine at Ringstone Hill Farm is located on the eastern edge of the central sector of the Nottingham, Derbyshire and Yorkshire Coalfields NLCA. The Marr Wind Farm is within the Southern Magnesian Limestone NLCA, 10km to the south-east.

8.9 The assessment indicates that there would be little Significance to the cumulative impact on the either National Landscape Character Areas from an individual turbine at Ringstone Hill Farm being added to a landscape with the four turbines at Marr 10km away.

8.10 There would be limited opportunities to see both developments simultaneously within the same view and where this is feasible the significance of the developments on the landscape character would be **Slight** and **Not Significant.**

8.11 The cumulative visual effects have been assessed from each of the selected viewpoints which represent cumulative effects on multiple receptors, residential settlements, transport routes, recreational routes and designated areas of landscape near to each viewpoint, in order to present a fair and reasonable appraisal.

8.12 The assessments involved predictions relating as to the, successive and sequential views.

Viewpoint	Type and Assessment of View
1 Burntwood Hall Care Centre	**Simultaneous:** There are no simultaneous views available. Predicted magnitude of change to baseline view Medium magnitude (of change of view) visual impact of turbine. **Type and sensitivity of visual receptor(s)** Residents - **Medium** sensitivity. Road users – **Medium** sensitivity **Assessed significance of visual impact** Residents – **Moderate** and due to distance, intervening vegetation and other industrial elements **Not Significant.** Road users - **Moderate** and therefore **Not Significant.**
	Successive: None due to screening from woodland.
	Sequential: N/A
2 Burntwood Hotel & Spa, Common Road	**Simultaneous:** There are no simultaneous views available. **Predicted magnitude of change to baseline view** **High** magnitude (of change of view) visual impact of turbine. **Type and sensitivity of visual receptor(s)** Hotel users – **Medium** sensitivity Footpath users - **High** sensitivity. Road users – **Medium** sensitivity. **Assessed significance of visual impact** Hotel users - **Moderate** and therefore **Not Significant** Footpath users –**Substantial** and therefore **Significant** Road users - **Moderate** and therefore **Not Significant.**
	Successive: N/A.
	Sequential: N/A
3 Manor Farm, Pudding Hill/Common Road	**Simultaneous:** There are no simultaneous views available. **Predicted magnitude of change to baseline view.** **Medium**. magnitude (of change of view) visual impact of turbine **Type and sensitivity of visual receptor(s)** Residential – **High** sensitivity. Footpath users – **High** sensitivity Road users – **Medium** sensitivity. **Assessed significance of visual impact** Residential - **Moderate** – and therefore **Not Significant** Footpath users – **Moderate** - and therefore **Not Significant** Road users – **Moderate** – and therefore **Not Significant**
	Successive: N/A
	Sequential: N/A

4 Hillside Crescent /Brierley Road	**Simultaneous:** There are no simultaneous views available. **Predicted magnitude of change to baseline view.** **Medium.** magnitude (of change of view) visual impact of turbine **Type and sensitivity of visual receptor(s)** Residential – **High** sensitivity. Footpath users – **Very High** sensitivity Road users – **Medium** sensitivity. **Assessed significance of visual impact** Residential – **Moderate** – and therefore **Significant** Footpath users - **Substantial/Moderate** – and therefore **Significant** Road users – **Moderate** – and therefore **Not Significant**
	Successive: N/A due to localised screening
	Sequential: N/A
5 Burntwood Road, Grimethorpe	**Simultaneous:** There are no simultaneous views available. **Predicted magnitude of change to baseline view.** **Medium.** magnitude (of change of view) visual impact of turbine **Type and sensitivity of visual receptor(s)** Residential – **High** sensitivity. Footpath users – **Very High** sensitivity Road users – **Medium** sensitivity. **Assessed significance of visual impact** Residential – **Moderate** – and therefore **Significant** Footpath users - **Substantial/Moderate** – and therefore **Significant** Road users – **Moderate** – and therefore **Not Significant**
	Successive: N/A
	Sequential: N/A
6 A628/B6422 Hague Lane Roundabout	**Simultaneous:** There are no simultaneous views available. **Predicted magnitude of change to baseline view.** **Low.** magnitude (of change of view) visual impact of turbine **Type and sensitivity of visual receptor(s)** Residential – **High** sensitivity. Road users – **Low** sensitivity. **Assessed significance of visual impact** Residential – **Moderate/Slight** – and therefore **Not Significant** Road users – **Slight** – and therefore **Not Significant**
	Successive: N/A
	Sequential: N/A

8.13 Of the six visual receptor viewpoints studied for the landscape and visual appraisal of the single turbine proposal the assessment indicates that the potential of Ringstone Hill turbine when added to a base line containing the Marr Wind Farm would not give rise to any Significant cumulative impacts.

Conclusion

8.14 The proposed Ringstone Hill turbine would rarely be seen cumulatively in combination with the existing Marr turbine, however the landscape and visual cumulative assessment indicates that there would be no significant impacts from including the Ringstone turbine to the existing or proposed baseline landscape.

Table 8.2 Cumulative views together with the proposed Ferguson Wind Turbine

Reference	Viewpoint Location	Marr
1	Burntwood Hall Care Centre	N/A
2	Burntwood Hotel & Spa, Common Road	N/A
3	Manor Farm, Pudding Hill/Common Road	N/A
4	Hillside Crescent/Brierley Road	N/A
5	Burntwood Road, Grimethorpe	N/A
6	A628/B6422 Hague Lane Roundabout	N/A

Simultaneous – Sim, Succussive – Suc, N/A – No views..

The ZTVs may indicate theoretical cumulative views from some of the viewpoints however the above table is based on site assessments and represents a more realistic viewpoint assessment.

9.0 Summary and Conclusions

9.1 The Landscape and Visual Impact Assessment (LVIA) has been prepared for the proposed single wind turbine, 45m to nacelle, 67m to blade tip, development at Ringstone Hill Farm, Brierley South Yorkshire. It considers the potential effects of the single turbine for a period of 25 years upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

9.3 The site lies within the Nottingham, Derbyshire and Yorkshire Coalfields NCLA which is approximately 100km long and 25km wide, the single turbine would effect a very small section of this character area the impact would be **Slight** and therefore **Not Significant**. Within the 5km radius study area there are two Regional Landscape Character Areas, 30 Southern Magnisian Limestone and 38 Nottingham, Derbyshire and Yorkshire Coalfields. The Southern Magnesian Limestone NLCA is approximately 5km from the site and the ZTVs indicated limited visibility therefore little potential for Significant impacts to occur.

9.4 The sensitivity and capacity of the site is to development is **Medium**, the Magnitude of Change on Landscape Features is considered to be **Low**, and therefore the Significance of the Impact is **Moderate/Slight** and therefore **Not Significant.**

9.5 Of the six viewpoints and sixteen receptor groups assessed the visual impact on only two receptors, (walkers on the Barnsley Boundary Walk) have been assessed as having Significant impacts, as they cannot be mitigated due to their location, however these impacts are limited to a short section of the overall walk within the study area.

9.6 The size of the proposed single turbine (45m to hub, 67 to blade tip) within a landscape with numerous comparable size industrial features, e.g. chimneys, over head electricity lines and large industrial buildings, together with the limited size of the visual envelope and further fragmentation of the view within the area, results in a proposed scheme without many Significant Visual Impacts. The proposed mitigation for those which have been assessed would reduce the already low levels of significance down to even more acceptable levels.

9.7 The proposed Ringstone Hill Farm turbine would theoretically be seen cumulatively in combination with the Marr Turbine 10km to the south-east however in reality the landscape and visual cumulative assessment indicates that there would be no significant impacts following the inclusion the Ferguson turbine to the existing baseline landscape. Where views are potentially available as illustrated on the ZTVs many are either screened or filtered by existing local landform, buildings or vegetation further reducing the impact of the proposed development.

9.9 The above assessment of the landscape and visual impacts and cumulative landscape and visual impacts indicate a general residual range from Moderate to Slight and therefore Not Significant. Having given careful consideration to the potential landscape and visual impacts/effects throughout the study area, it is considered on balance that the proposed Ringstone Hill Wind Turbine Development is acceptable.

APPENDICES

Appendix 1:Landscape and Visual Impact Assessment Methodology
Appendix 2: Preliminary Review of Landscape Character Type and Landscape Designations within 5km of Ringstone Hill Farm
Appendix 3: Preliminary Review of Principal Visual Receptors within 5km of Ringstone Hill Farm.
Appendix 4: Glossary

Appendix 1: Landscape and Visual Impact Assessment Methodology

1.0 Introduction

1.1 This Appendix describes in detail the methodology that has been used to undertake the Landscape and Visual Impact Assessment (LVIA) presented in the Report.

1.2 The structure of the appendix is as follows:

- Section 2 identifies the published guidance documents used in the assessment;
- Section 3 explains the difference between landscape and visual effects;
- Section 4 describes the different types of effect considered in the assessment;
- Section 5 defines the study area used in the assessment;
- Section 6 describes the methodology used for the assessment of effects on landscape features and landscape character;
- Section 7 describes the methodology used for the assessment of effects on visual receptors;
- Section 8 states the criteria that have been used for determining the sensitivity of landscape and visual receptors and the magnitude of change on those receptors;
- Section 9 explains how levels of significance have been derived using the combination of sensitivity and magnitude; and
- Section 10 explains the nature of effects on landscape and visual resources.

2.0 Published Guidance Documents

2.1 The LVIA has been undertaken in accordance with best practice, as outlined in published guidance:

- The Guidelines for Landscape and Visual Impact Assessment (GLVIA);, 2nd Edition (2002) Landscape Institute and the Institute for Environmental Management and Assessment
- Guidelines for Landscape Character Assessment, (2002) Countryside Agency and Scottish Natural Heritage (SNH);
- The Guidelines for Environmental Impact Assessment (2004) Institute for Environmental Management and Assessment.

2.2 Consideration has also been given to the following documents:

- Visual Representation of Windfarms – Good Practice Guidance, (March 2006), SNH commissioned report no. FO3 AA 308/2.
- Guidelines on the Environmental Impacts of Wind farms and Small Scale Hydroelectric Schemes, (2001) Scottish Natural Heritage;
- Guidance for the Assessment of Cumulative Landscape and Visual Impacts Arising from Windfarm Developments (3rd Draft), (2004) SNH;
- Planning for Renewable Energy: A Companion Guide to PPS 22, (2004) Office of the Deputy Prime Minister
- Character Assessment of England, Volume 4 East Midlands, 1996, Countryside Agency
- Planning for Renewable Energy Targets in Yorkshire and Humberside Volumes 1-3; Government Office for Yorkshire and Humberside.
- Barnsley Borough Landscape Character Assessment; Barnsley MBC
- Doncaster Landscape Character Assessment; Doncaster MBC
- The Landscape Character of Wakefield; Wakefield MBC

3 0 Distinction Between Landscape and Visual Effects

3.1 In accordance with published guidance, landscape and visual impacts are assessed separately although the procedure for assessing each is similar. A clear distinction has been drawn between landscape and visual impacts as described below:

- Landscape impacts relate to the effects of the proposals on the physical and other characteristics of the landscape and its resulting character and quality.
- Visual impacts relate to the effects on views experienced by visual receptors (e.g. residents, footpath users) and on the visual amenity experienced by those people.

4.0 Types of Impact Considered in the LVIA

4.1 The LVIA assesses the long term effects relating to the operational life of the wind turbine development and also the short-term effects associated with its construction and decommission. Where appropriate, the LVIA also considers any residual effects once the wind turbine development has been removed.

4.2 The LVIA assesses both the impacts associated with the turbine and any related impacts resulting from the ancillary equipment, sub station, underground cabling, site tracks and access roads, etc.

4.3 Consideration has been given to seasonal variations in the visibility of the wind turbines.

4.4 The LVIA assesses the cumulative effects (simultaneous, successive, sequential and perceptual) caused by the development of the site in conjunction with other constructed or proposed sites within the planning system within the 5km radius of the study area.

5.0 Study Area

5.1 The study area for the visual assessment was taken to be a 5km radius from the site. SNH Guidance[2] which recommends a 20km radius study area for turbines between 45m to 67m to blade tip. Having undertaken independent site visits as part of this assessment, Holman:Davies conclude that a 5km study area was adequate for the proposed development was adequate as Significant landscape and visual effects beyond this distance were unlikely.

5.2 The initial study area used for the consideration of effects on landscape character was taken as 5km radius from the site. All landscape character area/types within 5km of the site were initially considered in a filtering exercise set out and described in Appendix 2. At any given location within a landscape a visual receptor's response to landscape character is influenced by the physical and perceptual characteristics of their surroundings. These landscape components in the immediate surroundings of any given location have a much stronger influence on the sense of landscape character than distant features. Baseline studies and site visits indicated that there was little potential in the surrounding landscape (beyond approximately 5km) from the site for a distant turbine to have indirect significant effects on a receptor's experience of landscape character. Therefore a study area of 5km from the site was used for a detailed assessment of effects on landscape character.

6.0 Overview of Methodology for Assessment of Effects on Landscape Features and Landscape Character

6.1 A baseline landscape assessment was carried out to determine the current features and character of the landscape within and surrounding the site.

6.2 The baseline landscape assessment involved firstly a review of desk material including:

- Ordnance Survey maps at 1:50 000, 1:25 000 and 1:10 000 scales;
- Aerial photographs of the site and surrounding area;
- Ecological survey plans;

[2] Guidance for the Assessment of Cumulative Landscape and Visual Impacts Arising from Windfarm Developments (3rd Draft), (2004)

- Cultural heritage survey plans;
- Relevant planning policy;
- National and regional scale landscape character assessments;

6.3 Field visits were conducted in a variety of weather conditions during September/December 2011. At the time of the site visits vegetation was not in full leaf and should be regarded as the worst case scenario.

6.4 The baseline assessment identified the existing landscape features on the site, and in the immediate vicinity, and how these elements combine to give the area a sense of landscape character.

6.5 Plans, sections and construction details of the proposed scheme were used to determine the impacts of the scheme on landscape features and character.

6.6 The LVIA firstly assesses how the proposed development would impact directly on any landscape features and resources (e.g. removal of trees).

6.7 The LVIA then considers impacts on landscape character on two levels.

- consideration is given to how the immediate landscape character surrounding the site (within approximately 1km of the turbine) is directly affected due to the removal or alteration of existing features and the introduction of new features.

- the indirect impacts of the development on the wider landscape are discussed with reference to regional landscape character areas or types identified within relevant landscape character assessments and wind farm capacity studies.

6.8 The significance of effects on landscape features and character is determined by cross referencing the sensitivity of the feature or landscape character with the magnitude of impact using the criteria established in the following sections of this appendix.

7 Overview of Methodology for Assessment of Effects on Visual Receptors

7.1 Potential visual receptors of the scheme were initially identified by site visits and interpretation of digitally generated Zones of Theoretical Visibility (ZTVs) (see 7.12-7.17 for an explanation of ZTVs and how they were produced).

7.2 The assessment of visual effects was undertaken on the basis of viewpoint analysis as recommended by best practice guidelines[3]. A selection of viewpoints was agreed with the LPA to represent the range of views likely to be experienced of the development.

7.3 The viewpoints were selected to represent a range of views and viewer types. The viewpoints cover a variety of different character types, are in different directions from the site and are at varying elevations. The viewpoints are located at a range of distances from the development to illustrate the varying magnitude of visual impacts with distance from the site.

7.4 All of the representative viewpoints were photographed at 1.5m above ground level. However, where relevant, assumed views from upper floors of buildings were considered in the assessment.

[3] Visual Representation of Windfarms – Good Practice Guidance, (March 2006), SNH commissioned report no. FO3 AA 308/2

7.5 For each of the viewpoints, a wireframe model was generated to help identify the scale, arrangement and visibility of the turbines (see 7.18 – 7.24 for a description of how the wireframe models were produced). The images were reviewed on site to assess how natural and built screening would affect visibility of the site.

7.6 Viewpoints within 5km of the site were developed further into photomontages to help illustrate the predicted impact of the development (see 7.25-7.32 for a description of how the photomontages were generated and their limitations).

7.7 Each of the representative viewpoints was visited on a number of occasions to appreciate the sensitivity of views, and the entire extent of the study area was visited to appreciate visibility of the development as receptors move through the landscape.

7.8 The viewpoints were used as the basis for determining the effects on visual receptors within the entire study area.

7.9 In parallel to the viewpoint analysis the ZTVs were analysed to identify potential visual receptors (e.g. residents, users of public rights of way, etc) of the proposed development. A filtering process was undertaken to identify which of the visual receptors within the study area had the potential to experience significant visual effects. This filtering exercise is set out in Appendix 3.

7.10 The significance of effects on visual receptors is determined by cross referencing the sensitivity of the receptor with the magnitude of impact using the criteria established in the following sections of this appendix.

Zones of Theoretical Visibility (ZTVs)

7.12 Zone of Theoretical Visibility (ZTV) illustrates the geographical extents over which a feature or features (a wind turbine) would theoretically be visible within a defined study area.

7.13 It should be noted that the ZTVs have been generated assuming a 'bare ground' terrain model. This means that it is generated from topographical landform data only and does not take any account of vegetation or the built environment, which may screen views of the development. It is, as such, a 'worst case' Zone of Visual Influence and overemphasises the actual visibility of the scheme. In reality trees, hedgerows and buildings may restrict views of the development from many of the areas rendered as lying within the ZTV.

7.14 An assumption of the ZTVs is that climatic visibility is 100% (i.e. visibility is not impeded by moisture or atmospheric pollution in the air). In reality, such atmospheric conditions are relatively rare. Mist, fog, rain and snow are all common weather occurrences, which would regularly reduce visibility of the development with increasing distance from the site.

7.15 The ZTVs were generated using Resoft Wind Farm release 4.1. The programme used digital 3D height data (OS Landform Panorama) to generate a terrain model. The programme then renders the model using a square grid to illustrate whether the turbine would be visible in each 50m x 50m square on the grid for a specified distance in every direction from the site. Digital ZTVs have been prepared to illustrate the theoretical visibility of the turbine for a radius of 20km plus around the site.

7.16 Two sets of ZTVs have been produced, one shows visibility of the turbine at hub height overlaid on 1:250,000 scale OS map at A3 size, the second shows visibility of the turbine to blade tip when one blade is at its highest possible position, again overlaid on 1:250,000 scale OS map at A3 size.

7.17 It should be noted that the ZTVs simply illustrate theoretical visibility and do not imply or assign any level of significance to those areas identified as being within the ZTV. The ZTVs are a tool to assist the Landscape Architect to identify where the site would potentially be visible from. Professional judgement has been used to evaluate the significance of effects.
For a discussion of the limitations of ZTVs please refer to Visual Representation of Wind farms – Good Practice Guidance (SNH commissioned report FO3 AA 308/2).

Wireframe Visualisations
7.18 A wireframe (or wireline) visualisation is a computer generated 3D outline of a particular structure (a wind turbine) placed on top of a 3D ground terrain model, also represented by a wireframe. No rendering is given to any of the surfaces. The actual dimensions of the proposed turbine were used to build a model of the structure and this was placed in position over a ground terrain model generated from Ordnance Survey Landform Profile height data.

7.19 The coordinates of the viewpoints were taken using a Global Positioning System (GPS) in the field. These coordinates were used to set up viewpoints in the model from which to view the turbines. The wireframes were generated using Resoft Wind Farm Release 4.1.

7.20 The wireframe images are generated on a bare ground model and therefore do not take account of any vegetation or the built environment between the viewpoint and the development and as such represent a worst case view.

7.21 The wireframes are presented to scale above a baseline photograph to illustrate the actual view from each viewpoint. The wireframe images only illustrate the predicted scale and location of the turbines. It should be noted that no wireframe image can claim to be 100% accurate as there are a number of technical limitations to the process and model.

7.22 The wirelines are a tool to assist the Landscape Architect in their assessment of effects. The assessment of visual effects in this chapter does not rely on the accuracy of the wireframe images but professional judgement to evaluate the significance of effects.

7.23 Each of the wireframes and corresponding photographs should be viewed from a distance of approximately 300 – 433mm to gain an accurate impression of what the development will look like.

7.24 For a detailed discussion regarding the limitations of wirelines, please refer to Visual Representation of Wind farms – Good Practice Guidance (SNH commissioned report FO3 AA 308/2).

Photomontages
7.25 A photomontage is the superimposition of a rendered, photorealistic, computer generated model of a structure or structures (a wind turbine) on to a baseline photograph.

7.26 Photographs were taken using a Nikon D90 digital SLR camera using a high quality Nikon DX lens accurately calibrated to provide the equivalent of a 50mm lens on a traditional SLR camera. All pictures were taken using a levelled tripod and using a high quality setting of 8.2 megapixel resolution. Each of the viewpoints presented in the ES is made up of 3 photographs which have been stitched together using Adobe Photoshop software and cropped to give the equivalent of a 90 degree angle of view in the horizontal field. During the stitching process none of the photographs were distorted in terms of scaling.

7.27 At the time the photographs were taken, co-ordinates of the viewpoints were recorded using a GPS. Photographs were taken at 1.5m above ground level (approx eye level).

7.28 A 3D wireframe model was generated of the turbine. Resoft Wind farm release 4.1 software was used to generate the 3D model of the turbines. The model of the structures was rendered and lighting was set appropriate to the date, time and orientation on which the photograph was taken. A digital ground terrain model was generated in Resoft Wind farm release 4.1 and the development was overlaid on top of it. Using world coordinates in the computer modelling programme the photographic viewpoints were replicated such that a view was set up looking at the structures from exactly the same location as where the baseline photograph was taken from.

7.29 The view from the model was then superimposed over the original photograph and edited as necessary in Adobe Photoshop to give a final photomontage. Several known landmarks in the far distance of the baseline photographs were recorded on site using a GPS and used to check that the positioning and scale of the structures was correct.

7.30 The photomontages have been produced according to best practice and whilst every effort has been made to ensure the accuracy of the photomontages, no photomontage could ever claim to be 100% accurate as there are a number of technical limitations in the model relating to the accuracy of information available from Ordnance Survey and from the GPS, as detailed in Visual Representation of Wind farms – Good Practice Guidance (SNH report FO3 AA 308/2).

7.31 The photomontages are a tool to assist the Landscape Architect in their assessment of effects. The *assessment of visual effects in this chapter does not rely on the accuracy of the photomontages.* Professional judgement has been used to evaluate the significance of effects.

7.32 Each of the photomontages should be viewed from a distance of approximately 300-433mm to give an accurate representation of what the development will look like.

8 Assessment Criteria

8.1 The ultimate purpose of the LVIA is to evaluate the likely significance of landscape and visual effects within the study area to assist the determining authority in considering the acceptability of the scheme.

8.2 The significance of effects is ascertained by cross referencing the sensitivity of the baseline landscape or visual receptor and the magnitude of change as a result of the development, in accordance with the GLVIA.

Sensitivity of Landscape Features

8.3 The sensitivity of an individual landscape feature reflects factors such as its quality, value, contribution to landscape character and the degree to which the particular element can be replaced.

8.4 'Quality' refers to a landscape feature's (hedge, woodland, footpath etc) condition in terms of its general level of intactness.

8.5 'Value' refers to any specific cultural or historic associations (village green, structure, specific tree etc). Often highly valued landscape features are designated (eg Tree Preservation Orders, historic hedgerows, listed structures).

8.6 Landscape features which contribute to a landscape with a strong sense of character are generally regarded to be of a higher sensitivity.

8.7 A landscape feature which can be replaced easily or can be mitigated for generally has a lower sensitivity than a feature which cannot be replaced.

8.8 Taking the above factors into account it should therefore be noted that a particular feature may be more sensitive in one location than in another. Where individual landscape features are affected, professional judgement has been used as far as possible to give an objective evaluation of its sensitivity. Justification is given for this evaluation where necessary.

8.9 The sensitivity of landscape features is described as very high, high, medium, low or very low.

Sensitivity of Landscape Character

8.10 The sensitivity of landscape character is an expression of a landscape's ability to accommodate change, in this case the development of a wind turbine. It varies depending on the existing land use, pattern and scale of the landscape, the degree of openness, scope for mitigation in keeping with the existing landscape character, condition, value placed on the landscape and any designations that may apply.

8.11 Landscape character is considered at two levels.
Firstly impacts on landscape character are considered at the local level based on a site specific analysis of the character immediately surrounding the site (within approximately 1km of the site).

8.12 Secondly impacts on landscape character are considered at the wider landscape level by reference to the regional landscape character areas within 5km of the site. Based on early analysis of the landscape character within the study area (as presented in Appendix 2), it was concluded that there would be no significant effects on landscape character beyond this distance. At any point beyond this distance, it is considered that the visual influence of a single turbine would be experienced in the context of any number of prominent man made features and therefore the impact of the turbine would in no instance result in any greater than a slight effect on landscape character.

8.13 For the immediate landscape character, a site-specific appraisal has been undertaken of the landscape within and immediately surrounding the site and an evaluation is made in the baseline section of the LVIA regarding its sensitivity to wind energy development.

Sensitivity of Visual Receptors

8.17 The sensitivity of a visual receptor to a wind farm depends on a number of factors such as the occupation of the viewer, their viewing expectations, duration of view and the angle or direction in which they would see the site. The following criteria are provided for guidance only:

Sensitivity of Visual Receptors	Criteria
Very High	Residents with views of the site, people at recognised vantage points, people at tourist attractions with a specific focus on the view, visitors to historic features/estates where the setting is important to an appreciation and understanding of the property/history.
High	Residents, users of long distance trails (e.g. Pennine Way) and public rights of way, caravan parks and campsites, tourist attractions with opportunities for views of the landscape (but not specifically requiring an appreciation of the landscape), slow paced recreational activities which derive part of their pleasure from an appreciation of setting (e.g. golf).
Medium	Users of minor road users and commercial railways travelling through or past the affected landscape, recreational activities not specifically focused on the landscape (e.g. football), hotel users.
Low	People at their place of work (e.g. offices), shoppers, users of trunk/major roads.
Very Low	Industrial and commercial activities, military facilities.

8.18 It should be noted that the selected viewpoints are inherently more sensitive than the average visual receptor in the study area. When selecting representative viewpoints, there was a strong bias towards identifying the most sensitive visual receptors as the focus of the study is primarily where impacts were likely to be most significant.

Magnitude of Impacts on Landscape Features

8.19 Professional judgement has been used to determine the magnitude of direct physical impacts on individual existing landscape features using the following criteria as guidance only:

Magnitude of Change on Landscape Features	Criteria
Very High	Total loss or alteration to an existing landscape feature.
High	Major loss or major alteration to an existing landscape feature.
Medium	Some loss or some alteration to part of an existing landscape feature.
Low	Minor loss or alteration to part of an existing landscape feature.
Very Low	No loss or negligible alteration to existing landscape features.

Magnitude of Impacts on the Immediate Landscape Character

8.20 The magnitude of impacts on immediate landscape character is influenced by a number of factors including: the extent to which existing landscape features are lost or altered, the introduction of new features and the resulting alteration to the scale, landform, land cover and pattern of the landscape. Professional judgement has been used to determine the magnitude using the following criteria as guidance only:

Magnitude of Change on the Immediate Landscape Character	**Criteria**
Very High	Total loss or alteration to existing landscape features; Introduction of dominant new features into the landscape which prevents and appreciation of the underlying landform, land cover and pattern of the landscape.
High	A major loss or alteration to existing landscape features; Introduction of major new features into the landscape; or A major change to the scale, landform, land cover and pattern of the landscape.
Medium	Some notable loss or alteration to existing landscape features; Introduction of some notable new features into the landscape; or Some notable change to the scale, landform, land cover and pattern of the landscape.
Low	Minor loss or alteration to existing landscape features; Introduction of minor new features into the landscape; or Minor alteration to the scale, landform, land cover and pattern of the landscape.
Very Low	No notable loss or alteration to existing landscape features; No notable introduction of new features into the landscape; and Negligible change to the scale, landform, land cover and pattern of the landscape.

Magnitude of Impacts on the Wider Landscape Character

8.21 The magnitude of impacts on the wider landscape is discussed using the landscape character areas/types taken from the relevant landscape character assessment and identified in the baseline section of the assessment. The magnitude of the impacts reflects the extent to which aspects of the development are visible within the landscape character area and how this affects the overall appreciation of scale, remoteness, visual composition, pattern and landform. The extent to which distant turbines would affect appreciation of these factors depends on how prominent they would appear from the character area.

8.22 Professional judgement has been used to determine the magnitude using the following criteria as guidance only:

Magnitude of Change on the Landscape Character	Criteria
Very High	Presence of the site prevents any appreciation of the baseline landscape.
High	Presence of the site fundamentally alters the appreciation of scale, remoteness, visual composition, pattern or landform.
Medium	Presence of the site notably alters the appreciation of scale, remoteness, visual composition, pattern or landform slightly.
Low	Presence of the site marginally alters the appreciation of scale, remoteness, visual composition, pattern or landform.
Very Low	Site not visible or barely visible from the landscape character area.

Magnitude of Visual Impacts

8.23 Visual impacts are caused by the introduction of new elements into the views of a landscape or the removal of elements in the existing view.

8.24 Clearly justified professional judgement has been used to determine the magnitude of impacts using the following criteria as guidance only:

Magnitude of Visual Impacts	Criteria
Very High	A change in the view that has a dominating or overbearing influence on the overall view. Within 5 x the 'tip of blade' height of proposed turbine (in this case, within 335m).
High	A major change in the view that has a defining influence on the overall view. Between 5 x and 20 x the height of proposed turbine (in this case, between 335m and 1.34km).
Medium	Some change in the view that is clearly visible in the view and forms an important but not defining element in the view. Between 20 x and 50 x height of proposed turbine (in this case, between 1.34km and 3.35km).
Low	Some change in the view that is not prominent but visible to some visual receptors. Between 50 x and 100 x height of proposed turbine (in this case, between 3.35km to 6.7km).
Very Low	No change or negligible change in views. From more than 6.7km of the proposed turbine.

8.25 Using these criteria, determining levels of magnitude clearly depends on how prominent the development would be in the landscape. For clarification, the term 'prominent' relates to how noticeable the features of the development would be. This is affected by proximity of the viewpoint to the development and other modifying factors including: the focus of the view, visual screening and the nature and scale of other landscape features within the view. Rather than specifying distances at which the turbines will be dominant, prominent or incidental to the view etc, the relative prominence of the turbines in each view is described in detail for each viewpoint taking all the variables into consideration. This approach is supported by best practice guidelines[4].

9 Impact Significance

9.1 *The ultimate purpose of the LVIA is to evaluate the significance of the residual effects on the landscape* and visual amenity surrounding the site.

9.2 The significance of the landscape and visual effects is determined by cross-referencing the sensitivity of the landscape or view with the magnitude of change. In determining the significance of residual effects all mitigation measures are taken into account.

9.3 Table A1.4 demonstrates the general relationship between sensitivity and magnitude based on the specific criteria given above but is given for illustrative purposes only. Professional judgement is used at all

[4] University of Newcastle (2002) Visual Assessment of Wind farms Best Practice. Scottish Natural Heritage Commissioned Report F01AA303A.

times to determine the overall significance of effects. The significance of effects is described as Substantial, Substantial/Moderate, Moderate or Moderate/Slight, Slight, Slight/No Effect or No Effect.

9.4 Those effects identified as Substantial, Substantial/Moderate and in some cases Moderate significance may be regarded as significant effects when discussed in terms of the Town and Country Planning (England and Wales) (Environmental Impact Assessment) Regulations 1999.

Table 1.2: Significance of Landscape and Visual Effects

		Magnitude of Change				
		Very High	**High**	**Medium**	**Low**	**Very Low**
Landscape and Visual Sensitivity	**Very High**	Substantial	Substantial	Substantial/ Moderate	Moderate	Moderate/ Slight
	High	Substantial	Substantial	Moderate	Moderate/ Slight	Slight
	Medium	Substantial/ Moderate	Moderate	Moderate	Moderate/ Slight	Slight
	Low	Moderate	Moderate/ Slight	Moderate/ Slight	Slight	Slight/ No Effect
	Very Low	Moderate/ Slight	Slight	Slight	Slight/ No Effect	No Effect

	Significant
	Potentially Significant
	Not Significant

10 Nature of Effects

10.1 There is a range of public opinion on whether the landscape and visual impacts of wind turbine proposals are positive (beneficial) or negative (adverse). Publications such as 'Public Attitudes to Windfarms' Scottish Executive 2003 and other surveys demonstrate that wind farm developments generate a spectrum of public responses ranging from strongly adverse to strongly positive. This range of opinion is often referred to as the concept of "valency", which has been discussed and debated at numerous wind farm public inquiries.

10.2 Whilst no individual's attitudes and reactions towards wind farms should be simply dismissed, a more dispassionate judgement must be made by landscape architects in the preparation of a LVIA. The judgement should be reached through the process set out in the GLVIA, and should be based on the objective professional assessment of the baseline landscape, it's landscape character and visual resource of the relevant area together with the sensitivity of the landscape and visual receptors 'receiving' or experiencing the development. However, once an assessment has been made for all of the identified receptors, there is a requirement to consider what mitigation measures can be proposed to reduce or minimise the impacts / effects on the identified receptors. If the impact has been reduced or minimised by the proposed mitigation measures, it is stated in the report. If it cannot be reduced, it is the responsibility of the determining authority to determine that the level of impact /effect is acceptable or not.

10.3 The assessment provided within this report therefore follows the approach recommended in GLVIA, which is important within the iterative project design process in order to locate, scale, design the layout

and mitigate the effects of the development proposal, as well as to demonstrate how environmental and social impacts have been minimised, as recommended in PPS22.

Appendix 2: Preliminary Review of Landscape Character Types and Landscape Designations within 5km of Ringstone Hill Farm, Brierley.

1 Introduction

1.1 This Appendix provides a preliminary review of all landscape character types and landscape designations within 5km of the proposed Ringstone Hill Farm wind turbine development.

1.2 The purpose of this preliminary review is to identify which of the landscape character types and designated landscapes within 5km of the site have the potential to experience significant landscape effects (either directly or indirectly) as a result of the proposed development. It is as such a filtering exercise to identify which character types and designated landscapes warrant detailed discussion in the assessment.

1.3 The landscape character types within the study area are illustrated in Figure3 and 4, and are also listed in Table 2.1 below. Those which warrant further discussion in the assessment are shaded grey.

1.4 The designated landscapes within the study area are illustrated in Figure 5, and are also listed in Table 2.2. Again those which warrant further discussion in the assessment are shaded grey.

1.5 In order to assist with the filtering process the landscape character types have been overlaid on top of the ZTV to blade tip in Figure 9, .

Table 2.1: Preliminary Review of Effects on Landscape Character Types

Landscape Character Type	Comments	Further assessment required?
National Landscape Character Areas (Natural England, Volume 4 East Midlands)		
30 Southern Magnesian Limestone	ZTV indicates very limited visibility within a small area within the study area	No
38 Nottinghamshire, Derbyshire and Yorkshire Coalfields	The ZTV indicates areas visibility across the 5km study area	Yes
Regional Landscape Character Types/Areas (The Barnsley Borough Landscape Character Assessment)		
Lowland River Floor – C2 Lower Dearne	The ZTV indicates limited visibility within the area.	No
Settled Arable Slopes – D1 Northeast Barnsley,	The ZTV indicates visibility across the area within which the site lies.	Yes
D2 East Dearne,	The ZTV indicates very limited visibility within the area between 4-5km.	No
D3 West Dearne	The ZTV indicates visibility across the area at 4-5km from the site, however the area forms a small part of the overall character area and the presence of intervening settlements.	No
Settled Wooded Farmland - E3 Grimethorpe	The ZTV indicates visibility across the area.	Yes
Regional Landscape Character Types/Areas (Doncaster Landscape Character Assessment and Capacity Study)		
Coalfield Farmland - A3 Bamborough to Hooton Pagett	The ZTV indicates visibility across the area.	Yes
Regional Landscape Character Types/Areas Wakefield Metropolitan Borough Council		
South East Coalfield	The ZTV indicates visibility across the area, between settlements.	Yes
South West Coalfield	The ZTV indicates visibility across the area.	No
Went River Basin	The ZTV indicates visibility across the area.	No

Table 2.2: Preliminary Review of Effects on Designated Landscapes within 5km of the proposed turbine.

Designated area	Comments	Further assessment required?
National Landscape Designations		
National Park	None	No
Conservation Areas		
Brierley	At 1.4km from the proposed site, limited potential for views to the site.	Yes, see assessment for viewpoint 3
Clayton	Approximately 4km from the site, the site is screened by woodland and individual trees. There are limited views to the site from the villages	Yes
Registered Parks and Gardens		
None		No
Country Parks		
Fitzwilliam Country Park	5km from the proposed site, screened by intervening vegetation, landform and settlements.	Yes
Howell Wood Country Park	Site lies within 500m	Yes
Green Belt		
Barnsley	Site lies within Greenbelt	Yes
Wakefield	Site within 1km of Greenbelt	Yes
Doncaster	Site within 500m of Greenbelt	Yes

N.B. Impacts on the setting of Registered Parks and Gardens, Conservation Areas, Listed Buildings and Scheduled Ancient Monuments are also discussed in the Cultural Heritage.

Appendix 3: Preliminary Review of Principal Visual Receptors within 5km of Ringstone Hill Farm, Brierley.

1 Introduction

1.1 The purpose of this preliminary review is to identify which of the visual receptors within 5km of the site have the potential to experience significant visual effects as a result of the proposed Ringstone Farm wind turbine development.

1.2 The filtering exercise is used to identify which visual receptors warrant detailed discussion in the assessment has been undertaken by desk top study and site visits

1.3 The principal visual receptors within the study area are illustrated in Figure 1 Study Area 5km radius and are also listed in Table 3.1 below. Those which warrant further discussion in the assessment are shaded grey.

Table 3.1: Preliminary Review of Principal Visual Receptors

Visual receptor	Comments	Further assessment required?
Principal Settlements		
Brierley	The ZTV indicates there is limited visibility of the turbine from the southern and eastern edge of the town.	Yes, see assessment from viewpoint 3
Clayton	The ZTV indicates there is visibility of the turbine, in reality the village is inward facing with limited views from the northern edge.	No due to distance and screening from other property and woodland and impact of the intervening overhead electric line.
Cudworth	The ZTV indicates there is limited visibility of the turbine from the eastern edge of the town.	No, due to distance, screening of buildings and influence of other settlements.
Great Houghton	The ZTV indicates there is no/limited visibility of the turbine from the town.	No, due to screening.
Grimethorpe	The ZTV indicates there is limited visibility of the turbine from the north-eastern edge of the town.	Yes, see assessment from viewpoint 5.
Hemsworth	The ZTV indicates there is limited visibility of the turbine from the south-western edge of the town.	Yes, see assessment from viewpoint 6.
Kinsley	The ZTV indicates there is very limited/no visibility of the turbine from the town.	No, due to screening.

South Elmsall	The ZTV indicates there is very limited visibility of the turbine restricted to the western edge of the town.	No, due to screening.
South Hiendley	The ZTV indicates there is very limited visibility of the turbine from the southern edge of the town.	No, due to screening and intervening influence of settlements, overhead lines etc.
South Kirby	The ZTV indicates there is very limited visibility of the turbine restricted to the western edge of the town.	No, due to intervening screening from buildings etc.
Thurnscoe	The ZTV indicates there is very limited/no visibility of the turbine from the town.	No, due to distance and screening.
Principal Roads		
A6195 Shafton Two Gates to Middlecliffe	The ZTV indicates there is intermittent visibility of the turbine.	Yes, due to proximity and visibility
A628 Barnsley Road, Brierley to North Elmsall	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility
Local Minor Roads		
B6273 Burntwood Manor to Great Houghton	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility
B6273 Burntwood Manor to Hemsworth	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility
Railway Lines		
South Kirby / Thurnscoe	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility
South Kirby/Fitzwilliam	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility
Principal Long Distance Trails/Cycleways		
Barnsley Boundary Walk Brierley to Grimethorpe	The ZTV indicates there is visibility of the turbine.	Yes, due to proximity and visibility.
Tourist Attractions		
None		
Important Vantage Points		
None		

Appendix 4 Glossary

1.0 (Mainly derived from LVIA Guidance 2002)

Aesthetic Factors	The key aspects of the landscape which contribute to its composition such as: scale enclosure diversity texture form line colour balance movement pattern
Analysis (Landscape)	The process of breaking the landscape down into its component parts to understand how it is made up.
Assessment (Landscape)	The umbrella term for description, analysis and classification of landscape
Baseline	The landscape character and visual amenity of the study area as it exists at the commencement of the assessment process – i.e. prior to any development proposal.
Biodiversity	The concept of variety in all species of plants and animals through which nature finds its balance.
Classification	A process of sorting the landscape into different types using selected criteria but without attaching relative values to the different kinds of landscape
Compensation	The measures taken to offset or compensate for residual adverse effects that cannot be mitigated, or for which mitigation cannot entirely eliminate adverse effects.
Constraints Map	Map showing the location of important resources and receptors that may form constraints to development.
Countryside	The rural environment and its associated communities (including the coast).
Cultural and Social Factors	The elements of the landscape which are the result of human activity – e.g..: land use and management; character of settlements and buildings; and pattern and type of fields and enclosure;
Landscape	Human perception of the land conditioned by knowledge and identity with a place.

Landscape Dynamics	The forces of change which are inherent within the landscape due to prevailing cultural and social factors, such as: existing management regimes; existing planning policy/development plan considerations; local, regional or national trends for change.
Landscape Capacity	The degree to which a particular landscape character type or area is able to accommodate change without fundamentally altering its character. Capacity is likely to vary according to the type and nature of change being proposed.
Landscape Character	The distinct recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of landscape.
Landscape Character Type	A landscape type will have broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and filed pattern discernible in maps and field survey records.
Landscape Effects	The consequences of change in the elements, characteristics, qualities and overall character of the landscape as a result of development. These effects can be positive, neutral or negative.
Landscape Evaluation	The process of attaching value (non-monetary) to a particular landscape, usually by the previously agreed criteria, including consultation, for a particular purpose (for example, designation or in the context of assessment).
Landscape Fabric	Combination of aesthetic, cultural, social and natural characteristics.
Landscape Feature	A prominent eye-catching element, for example, wooded hilltop or church spire.
Landscape Quality(or condition)	An evaluation based on judgements about the physical state of the landscape, and its intactness, from visual, functional, and ecological perspectives. It also reflects the state or repair of individual features and elements which make up the character in any one place.
Preference	The liking by people for one particular landscape element, characteristic or feature over another.

Quality	See Landscape quality
Receptor	Physical landscape resource, special interest or viewer group that will experience an effect.
Regulatory Authority	The planning or other authority responsible for planning consents or project authorisation (synonymous with determining authority or competent authority).
Screening	The formal process of ascertaining from the regulatory authority whether a given proposal requires an Environmental Impact Assessment in accordance with Government Regulations.
Scoping	The process of identifying the likely significant effects of a development on the environment.
Sense of Place (genius loci)	The essential character and spirit of an area: genius loci literally means 'spirit of the place'.
Sensitive/sensitivity	See Landscape sensitivity
Sieve Mapping.	Technique for mapping environmental constraints, working from a series of overlays, sieving out less important factors
Significant	An effect on landscape character or visual amenity which is considered to be significant in terms of the prevailing EIA Regulations.
Sustainability	The principle that the environment should be protected in such a condition and to such a degree that ensures new development meets the needs of the present without compromising the ability of future generations to meet their own needs.
Threshold	A specified level of grading effects, for example, of magnitude, sensitivity or significance.
Viewpoint	A location chosen through application of a robust set of criteria to provide a representative view of a proposed development for one or more types of receptor (e.g. a landscape character type; residential settlement; recreational