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LANDSCAPE AND VISUAL APPRAISAL REPORT

**HAVERIGG II WIND FARM LIFE EXTENSION
NORTH LANE, HAVERIGG, CUMBRIA**

THRIVE RENEWABLES (HAVERIGG II) LTD

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EXECUTIVE SUMMARY

This report presents a Landscape and Visual Appraisal (LVA) undertaken to accompany a Section 73 application to extend the operational phase for the Haverigg II Wind Farm, Cumbria (hereafter referred to as “the Development”).

The LVA includes:

- A methodology section, which sets out the study area and information used to inform the appraisal;
- A baseline section, which sets out the existing baseline;
- An appraisal of landscape effects;
- An appraisal of visual effects;
- An appraisal of cumulative effects;
- Consideration of mitigation measures; and
- Conclusions.

Summary of Landscape Effects

The Development is located within the context of grazing land and a motocross track on a former airfield adjacent to the Haverigg III wind turbines. The sensitivity of the landscape is considered to be Moderate/Low due to the presence of the adjacent Landscape of County Importance and prison, another large-scale feature of the area. The Site itself is characteristic of the national (2014) and regional landscape (2011) character assessments and wind farms are an acknowledged feature of the landscape and there is likelihood for continued renewable energy development within the character area as capacity has been identified in the Cumbria Wind Energy Supplementary Planning Document. The Development is for an extension of time resulting in the continued presence of the Haverigg II wind turbines for a further 10 years. It is considered that the landscape, due to the wind farms’ established presence and modest scale of the turbines does have the capacity to absorb the continued presence of the wind turbines. Any landscape effects are medium-term, but reversible.

Summary of Visual Effects

The visual appraisal indicates that the most sensitive views of the Site, from the surrounding areas would be residents at the Bank Head Estate, properties in and around Haverigg and Kirksanton, transient views from PRowS including the beach and road users and views from the motocross track. In the majority of the views the prison also forms a prominent feature. Any adverse visual impacts associated with the turbines is medium-term, but reversible.

Views from the A5093 are filtered and partly limited due to the height of intervening hedgerows. The coastal path is no longer endorsed by Cumbria County Council although access still exists along the beach and the area is well used by walkers and horse riders. The Site itself is a local resource used informally for walking with a stile from the Site into the sand dunes. The motocross track is a recent addition to the visual baseline and is located under one of the Haverigg II turbines and under two of the Haverigg III turbines.

There are elevated open views from the A595 within the National Park but these are set within the wider context of the coastal landscape with other vertical features such as pylons with taller trees partially limiting views. Other views from the National Park are limited to the slopes of Black Combe and isolated distant patches from coastal areas to the north west and patches south of the Old Man of Coniston. Although distance, intervening vegetation and buildings restrict potential views.

Close distance views are available from the Landscapes of County Importance which lies immediately south of the site and longer distance views from the north. Views are partially restricted by intervening buildings, landform and vegetation. The turbines are modest in scale

and form a noticeable vertical feature but are not uncharacteristic of the landscape and are set within the context of other large-scale man-made features such as HMP Haverigg.

No mitigation is proposed and no cumulative effects are predicted.

Summary of conclusions

The proposals are for an extension of the operational phase of the Haverigg II wind farm. The Site is located within the context of the adjacent Haverigg III wind farm and the prison within grazing land and a motocross track on a former airfield adjacent to the sand dunes and coastline of the Irish Sea.

The Lake District National Park lies 850 m to the north west with visibility of the wind turbines limited to long distance isolated patches along the north west coastline and to the south of the Old Man of Coniston and closer distance views from coastal villages such as Silecroft and the southern slopes of Black Combe and A595. Otherwise views from the LDNP are extremely limited by intervening landform and vegetation. A Landscape of County Importance is located immediately to the south and close distance views are available of the wind turbines. The landscape capacity assessment undertaken as part of the Cumbria Wind Energy Supplementary Planning Document considers the area has capacity for additional small to large wind farm infrastructure (up to 9 turbines) taking into consideration the presence of the existing wind farms (Haverigg II and III wind farms consist of a total of 8 wind turbines). The updated National Character Area profile and Cumbria Landscape Character Guidance (Sub type 2d: Coastal Urban Fringe) acknowledges that wind farms are a familiar feature of the area. It is considered that the landscape, due to the wind farms' established presence, modest scale of the turbines and in accordance with the SPD does have the capacity to absorb the continued presence of the wind turbines. Any landscape effects are medium-term, but reversible.

Landscape guidance recommends enhancement of landscape features such as woodland, scrub and hedgerow planting together with grassland enhancement. However, no mitigation measures are suggested due to the site's location and use.

Changes to the Landscape and Visual baseline since the 1995 permission are listed below:

- Motocross track on the Site allowing increased public access;
- LCI immediately south of the Site;
- Cumbria Coastal Way no longer endorsed by the Council but access still available to the beach and sand dunes;
- An increase in wind farm sites in the wider area (10km and beyond);
- Taller hedgerow vegetation reducing views from the A5093;
- New guidance such as the Cumulative Impacts of Vertical Infrastructure and the Cumbria Wind Energy Supplementary Planning Document;
- Updated landscape character profiles; and
- Updated planning policy.

The visual baseline does not appear to have changed significantly with the most sensitive visual receptors located at the Bank Head Estate and other local properties at Haverigg, Kirksanton and individual farms. Transient close distance views are available from nearby PRoWs, informal routes across the site, users of the beach and the motocross track. Views from roads are similar except for the height of hedgerows which appear to be higher along sections of the A5093. Elevated, open views are available from the A595 and the southern tip of the Lake District National Park but these are set within the wider context of the coastal landscape with other vertical features such as pylons and HMP Haverigg. Middle distance views (2-5 km) are also available from locations on the western edge of Millom. In the majority of the views the prison also forms a prominent feature. The turbines are modest in scale and although they form a noticeable vertical feature, they are

not uncharacteristic of the landscape. Any adverse visual impacts associated with the turbines are medium-term, but reversible.

Taking into account the existing character and quality of the landscape, the visual amenity of receptors, SPD guidance and the sites value at a community level, it is considered that the landscape is able to continue accommodating the wind farm without undue adverse landscape or visual effects. In addition, no adverse cumulative landscape or visual impacts are predicted.

1 INTRODUCTION

This report presents the findings of a Landscape and Visual Appraisal (LVA) undertaken to accompany a Section 73 application to extend the operational phase for the Haverigg II Wind Farm, Cumbria (hereafter referred to as "the Development"). The Development comprises four Wind World W4200 wind turbines with a blade tip height of 62.5 m and supporting infrastructure (access tracks, switchgear) and it was constructed in 1998. The Development site (the "Site") is located approximately 2 kilometres (km) west of Haverigg and 3 km west of Millom.

This LVA report provides a comparison of the baseline used to assess the original application in 1995 to the current baseline, identifying any changes and potential landscape and visual effects and considers the continued operation of the turbines for a further 10 years to 2032.

The LVA has been undertaken by a Chartered Landscape Architect, following a methodology in accordance with good practice guidance summarised in Section 2 with further detail provided in Appendix 2.

This report is accompanied by the following Figures in Appendix 1:

- Figure 1: Landscape and Visual Baseline;
- Figure 2: Visual Receptors;
- Figure 3: Comparative Wind Farm ZTV; and
- Figure 4: Cumulative Wind Farm ZTV.

1.1 The Site

The Site is located approximately 1 km west of Haverigg, Cumbria. It comprises four operational onshore wind turbines. It is sited west of HMP Haverigg (a prison), immediately to the east of the four-turbine Haverigg III Wind Farm. Both wind farm developments are located within a single landownership area. The Site boundary and turbine locations are shown on Figure 2.

Three of the turbines are located within intensively grazed grassland. The northern part of the Site with one turbine is located within a motocross track. The Site consists of the following elements:

- The Haverigg II Wind Farm - four wind turbines with a blade tip height of 62.5 m. Planning permission was granted in 1995 (planning ref: 4/95/0553/0) and it was constructed in 1998; and
- Associated infrastructure such as access roads, hard standings, wind monitoring mast and a switchgear building.

2 METHODOLOGY

The methodology for the LVA is included in Appendix 2 and is based on current best practice guidance, namely:

- 'Guidelines for Landscape and Visual Impact Assessment', (GLVIA) produced by the Landscape Institute with the Institute of Environmental Management and Assessment (Third Edition, 2013);
- The Landscape Institute (2013), GLVIA3 Statement of Clarification 1/13¹;

¹ The Landscape Institute (2015) GLVIA3 – Statements of Clarification [Online] Available at: <https://www.landscapeinstitute.org/technical-resource/glvia3-clarifications/> (Accessed August 2019)

- SNH and The Countryside Agency (2002) Landscape Character Assessment Guidance for Scotland and England²; and
- Cumbria Wind Energy Supplementary Planning Document part 2.

A Zone of Theoretical Visibility (ZTV) radius of 20 km was chosen for Haverigg II based on SNH guidance³ (turbine height 62.5 m). The cumulative ZTV was calculated using a 30 km radius in line with the guidance within Cumbria Wind Energy Supplementary Planning Document Part 2⁴.

2.1 The Study Area

The study area for the landscape and visual appraisal was set as a 10 km offset from the Site boundary and encompasses the small town of Millom, the southern edge of the Lake District National Park and surrounding countryside and coast including the Duddon Estuary. Following analysis of the ZTV and fieldwork, it is considered that any potential significant effects are likely to be experienced from less than 10 km given the nature of the surrounding landform, vegetation, distribution of the landscape and visual receptors and scale of the wind turbines.

2.2 Desk-Based Study

Information for the landscape and visual appraisal was gathered from the following sources:

- Copeland Local Plan (2013-2028);
- Cumbria Wind Energy SPD (2008);
- Cumbria Landscape Character Guidance (2011);
- National Character Area Profiles 7 (2014); and
- Ordnance Survey digital raster map.

2.3 Field Study

A field survey was undertaken on the date 22nd August 2019 to review:

- The landscape characteristics;
- Views of the Site from the surrounding areas;
- The location and sensitivity of visual receptors; and
- The landscape and visual effects arising from the continued presence of the wind farm.

The survey was undertaken from roads and publicly accessible viewpoints within 10 km of the Site. Six viewpoints were chosen and photographed as being representative of the main receptors and to aid in the understanding of the current baseline.

3 LANDSCAPE APPRAISAL

3.1 Landscape Planning Context

In landscape and visual terms policies of relevance to the Site that have been updated since the original application includes:

² SNH and The Countryside Agency (2002). Landscape Character Assessment Guidance for Scotland and England. (Accessed August 2019)

³ <https://www.nature.scot/sites/default/files/2017-06/Publication%202017%20-%20Visual%20representation%20of%20wind%20farms%20-%20Version%202.2%20A2203860.pdf>

⁴ <https://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/3943512467.pdf>

- Copeland Local Plan 2013-2028 Core Strategy and Development Management DPD (“the Local Plan”); and
- Copeland Local Plan 2013-2028 Proposals Map and Copeland Local Plan 2001-2016 ‘Saved’ Policies (“the Core Strategy”).

Policy ER3 – The Support Infrastructure for the Energy Coast: This policy indicates that the Council will support energy development which meets a number of criteria, including:

- Minimising the impact on the landscape and natural environment and on the health and amenity of residents and visitors;
- Supporting the implementation of Britain’s Energy Coast: A Masterplan for West Cumbria;
- Selecting sites which are consistent with the Core Strategy and minimise undesirable impacts; and
- Mitigating or compensating for negative impacts on the locality.

Policy ENV2 – Coastal Management: This policy aims to reinforce the Coastal Zones assets and opportunities for leisure, culture, tourism, outdoor recreation, biodiversity and energy generation while preventing coastal erosion and flooding. The policy states that energy generating developments that require a coastal location along the undeveloped coast will be supported provided that the potential impacts on biodiversity, landscape and heritage assets are assessed against the benefits and that any negative impacts are mitigated and compensated for.

Policy ENV4 – Heritage Assets: This policy seeks to maximise the value of the Borough’s heritage assets. It states that listed buildings, conservation areas and other townscape and rural features of value will be protected. The policy is supported by **Policy DM27**.

Policy ENV5 - Protecting and Enhancing the Borough’s Landscapes: This policy states that the Borough’s landscapes will be protected and enhanced by:

- protecting landscapes from inappropriate change;
- ensuring that any impacts on the landscape are minimised through adequate mitigation, preferably on-site; and
- supporting proposals which enhance the value of the Borough’s landscapes.

Policy DM2 – Renewable Energy Development in the Borough: This policy indicates that renewable energy proposals will be supported where they satisfy detailed criteria in relation to stakeholder involvement, visual effects, effects on landscape or townscape character and distinctiveness, biodiversity and geodiversity, nature and heritage conservation, environmental health impacts, waste and site restoration. Mitigation measures to minimise potential impacts and to deliver community benefits should be employed where possible.

Policy DM26 – Landscaping: This policy states that proposals for development will be assessed in terms of their potential on the landscape, with reference to the Cumbria Landscape Character Assessment and Cumbria Historic, Landscape Characterisation documents. The proposals will be assessed in terms of visual impact, scale, character, amenity value, local distinctiveness and the cumulative impact of developments. Landscape schemes should retain existing landscape features and mitigate any adverse visual impacts.

Policy DM27 – Built Heritage and Archaeology: This policy states that development proposals should protect, conserve and where possible enhance the character of historic sites and their settings. The policy contains detailed criteria for proposals which would

affect a scheduled ancient monument, conservation area, listed building or site of archaeological importance.

3.2 Landscape Planning Designations

This section, which should be read in conjunction with Figure 1, identifies landscape planning policies, designations and constraints such as Public Rights of Way that are relevant to this appraisal. Table 3.1 summarises the constraints within the Site and the study area and provides an assessment of the current and previous baseline.

Table 3.1: Landscape Designations, Protected Heritage Assets and Public Rights of Way

Landscape Designations	Assessment of Current and Previous Baseline	Present Within Site Boundary	Present within 1 km of the Site
National Parks	No change	No	The Lake District National Park boundary lies approximately 850 m to the north west.
Landscapes of County Importance	Increase in extent and now immediately adjacent to the south of the Site.	No	Lies immediately south of the Site boundary and approximately 1km to the north
Protected Heritage Assets			
World Heritage Sites	No change	No	Lake District World Heritage Site - approximately 850 m to north west
Scheduled Monuments	No change	No	Giant's Grave standing stones, Kirksanton - approximately 1.6 km to north west
Conservation Areas	No change	None	Millom conservation area lies approximately 3 km to the east.
Listed Buildings/Structures	Haverigg war memorial listed in 2018	No	No - approximately 1.9 km to the south east.
Constraints			
Public Rights of Way (PROW)	The Cumbria Coastal Way is no longer marked on OS maps and is not endorsed by Cumbria County Council. However, the beach area is still used by horse riders and walkers.	Unofficial footpaths	Yes – the nearest PROW is 15 m to the east of the Site boundary

3.3 Landscape Character

An assessment of the current and previous baseline landscape character has been undertaken in order to determine the changes, if any, of the sensitivity of the landscape and its capacity to continue to accommodate the Development. The identified landscape character areas are presented in Table 3.2.

Table 3.2: Landscape Character Areas

Landscape Character Area	Assessment of Current and Previous Baseline
National Character Area 7 - West Cumbria Coastal Plain (2014)	Updated in 2014
Cumbria Landscape Character guidance (March 2011)	The Site is located within the Landscape Character Type 2: Coastal Margins and Sub type 2d: Coastal Urban Fringe. These were reviewed in 2009 and subsequently published as the ' <i>Cumbria Landscape Character Guidance and Toolkit</i> '.
Local Landscape Character	Please see description below.

3.3.1 **National Character Area 7 - West Cumbria Coastal Plain (2014)**

This document was updated in 2014 and recognises the increasing influence of renewable energy infrastructure as a feature of the character area. The site at Haverigg was one of the first wind farms to be commissioned in 1992 and since this time wind farm infrastructure has increased.

'*Landscape Change*' is described in supporting document 2 and relevant descriptions include:

'Wind turbines have become an increasing feature in the landscape with an expansion from their former limited coastal presence between Workington and Flimby to both inland sites, including a number of developments between Whitehaven and Cockermouth, and offshore where wind farms in the outer Solway and off Walney are widely visible'.

Relevant '*Drivers of Change*' are described as:

'With the area labelled as Britain's Energy Coast, power generation is likely to remain a key driver for development in the area. Increased demand is likely to need a mix of renewables, wind power, wood fuel, biomass and nuclear developments with associated research development and waste management industries becoming important. Applications for development of wind turbines are increasing on and off-shore. These are all likely to impact on the visual character of the NCA'.

3.3.2 **Cumbria Landscape Character Guidance (2011)**

The Cumbria Landscape Character Assessment defines, describes and maps 13 landscape types and 34 sub types. For each sub type changes to the landscape are set out and a vision and guidelines provided to help manage landscape change in the future.⁵

⁵ <https://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/406869467.pdf>

At a regional level the Site lies within the Landscape Character Area Sub type 2d Coastal Urban Fringe. It is also immediately between the 2a Dunes and Beaches character area and 5B Low Farmland character area. Please refer to Figure 1.

'Key characteristics' of the Coastal Urban Fringe are described as:

- Low lying flat land;
- Urban influences linked to tourism development;
- Derelict buildings and major transport routes;
- Strong man-made landforms on coastal edges;
- Mixed land cover of mown grass, pasture, scrub and semi natural grassland; and
- Weak field patterns.

The 'Vision' for this character area is:

'The qualities of this landscape and seascape will be enhanced, restored and improved as important settings for recreation. In order to foster strong local ownership and distinctiveness, improvements will be made regarding community involvement. The rural and natural qualities of these areas will be reinforced and there will be the development of a bold landscape structure to unify disparate uses. This will be achieved through the conservation of rural green areas and a reduction in the impact of development in prominent locations. Where possible, derelict and old industrial sites will be restored through positive development and management schemes, reflecting any historic or biodiversity value. Landscape works will soften coastal edges, protect significant views and improve recreation facilities. In the farmed hinterlands hedgerows will be restored, natural grassland and scrub fringes will be conserved and extended and woodland will be created in more sheltered locations.'

Guidelines for this character type include:

'Natural Features

- *Conservation and management of coastal grassland by for example relaxing mowing regimes, managing public access, implementing restoration programmes and controlling scrub encroachment.*
- *Restore and reclaim derelict airfields, industrial sites and mining areas to remove eyesores, enhance open mosaic and semi-natural habitats and to make a positive contribution to the landscape.*
- *Encourage the protection and enhancement of habitat for the small blue butterfly along the coast between Workington and Maryport.*

Cultural Features

- *Retain and manage hedgerows in a traditional way encouraging restoration and maintenance of locally distinctive and historic boundary treatments such as cobblestone and turf hedge banks.*
- *Discourage introduction of fences to replace or 'gap-up' hedges and restore fenced boundaries to traditional hedgerows.*
- *Where a dilapidated pattern of fields may no longer function as part of a productive farm unit and their value in serving present day needs is questionable consideration should be given to removing some field boundaries to create open 'commons', and creating new woodlands that reflect topographic variation and help define public and private spaces'.*

3.3.3 *Local Landscape Character*

The landscape of the Site itself has not changed significantly from the 1995 application except for the addition of the motocross track. No rights of way cross the Site but evidence of dog walkers and other walkers using the Site is apparent from site observations, worn footpaths and stiles over perimeter fencing into the sand dunes and the motocross area. Wind turbines have been a feature of the landscape since 1992. Access to the Site is via a field gateway located at the end of North Lane, Haverigg. The wider site area is bounded by perimeter stock fencing and remnant hedgerows, the fencing is in poor condition in areas.

There are several PRoW in the local area (see Figure 2). The Cumbria Coastal Path is no longer marked on OS maps and is not endorsed by Cumbria County Council (however it is currently the subject of proposals to form part of the route of the England Coast Path: Silecroft to Silverdale⁶). This section of the path, located to the south of the Site along the beach, is well used by horse riders and walkers and therefore has been considered in the visual assessment (see Viewpoint 1).

The following landscape characteristics still relevant to the Site are summarised below.

The Haverigg II wind farm site is located on open grazing land and a motocross track approximately 2 km to the north-west of the main Haverigg village and approximately 300 m inland of the Irish Sea coast and 3 km southwest of the town of Millom. The A5093 road is located to the northeast. To the east and south of Millom is the Duddon Estuary which separates this part of the West Cumbria Coastal Plain from Barrow and the Furness peninsula to the south. The Site lies within a flat coastal margin beyond which the land rises abruptly to form distinctive low fells (11a Foothills), such as Millom Fell, that fringe the high fells of the Lake District National Park. These low fells are designated 'Landscapes of County Importance'.

Within the coastal margin much of the landscape is generally flat and low-lying fields of open grazing land (5b Low Farmland). There are a number of prominent elements, including Haverigg prison to the immediate east with a 5+ m high steel security fence, transmission towers and overhead power lines, radio masts, caravan sites and the existing Haverigg wind turbines located on the former airfield. Views are limited out to sea due to the intervening sand dunes. Views inland are confined by the western fells. Occasional farms and residential properties are scattered within the area, and there is a small settlement at Kirksanton.

The Haverigg Site itself is located within the 2d Coastal Urban Fringe. It lies within an open field that once formed part of the former Haverigg airfield. The field is low-lying and level, having previously been engineered to a landform suitable for use as an airfield. Concrete runways and spurs are still evident. The northern portion of the Site is also used as a motocross track. To the south-west of the wind farm site are a series of hummocky sand dunes, that separate the Site from the Irish Sea. They form part of the Morecambe Bay and Duddon Estuary SSSI, SPA, SAC and RAMSAR and are included with the Landscapes of County Importance designation.

3.4 **Landscape Sensitivity**

The sensitivity of the landscape is assessed through consideration of their value and susceptibility to change. For landscape receptors, value concerns the importance of the landscape resource as evidenced by the presence of landscape designations and professional judgement. Susceptibility is concerned with the landscapes ability to absorb

⁶ <https://www.gov.uk/government/collections/england-coast-path-silecroft-to-silverdale>

change brought about by the Development. The process for determining landscape sensitivity is set out in Appendix 2, Methodology.

The following characteristics have been considered when assessing sensitivity:

- The Site lies within a rural coastal landscape;
- The turbines are medium in scale (less than 80 m tall)⁷;
- The area is labelled as 'Britain's Energy Coast'(NCA 7);
- The Site itself is not subject to any landscape designations but is approximately 850m from the Lake District National Park and immediately north of a Landscape of County Importance along the coastline;
- The established presence of large-scale features such as the Haverigg prison with tall perimeter fencing, pylons, wind turbines and caravan sites;
- The rugged and elevated character of the foothills (LCA 11a) and southern extent of the Lake District fells limit views further north;
- The established presence of the Site as a wind farm since 1992;
- The location of the turbines set back from the coast and intervening sand dunes to the south of the Site limit their influence on the coast;
- The presence of the motocross track within the Site as an important recreational area and complimentary use;
- There are several PRow adjacent to the Site providing close to middle distance views, also unofficial public access across and adjacent to the Site; and
- The Cumbria Landscape Character Assessment Area 2d Coastal Urban Fringe recognises that man-made features such as wind turbines are typical around coastal settlements.

Taking into account the existing character and quality of the landscape, and its value at a community level, it is considered that the landscape is able to continue accommodating the wind farm without undue adverse effects. The sensitivity of the landscape is considered to be Moderate/Low as it is recognised that the Site is adjacent to a Landscape of County Importance and is in close proximity to the National Park although the turbines are modest in size and number and do not dominate the overall coastal scene.

3.5 Landscape Capacity

A landscape capacity assessment was undertaken for each of the main landscape types in Cumbria as part of the Cumbria Wind Energy Supplementary Planning Document.⁸ This considered the specific landscape characteristics that are sensitive to wind energy development and their value and enabled the potential capacity for each character type to be determined. This indicated the relative capacity of the County's landscapes to accommodate wind energy development, and defines the landscape criteria used to judge capacity.

The Coastal Urban Fringe LCA 2d is considered to have a low/moderate landscape capacity for new wind energy development, and defines this as, '*Up to a small group, exceptionally a large group in most extensive parts and where unconstrained by settlement.*' A small group is defined as 3-5 turbines, and a large group is defined as 6-9 turbines.

3.6 Summary of Landscape Effects

The Development is located within the context of grazing land and a motocross track on a former airfield adjacent to the Haverigg III wind turbines. The sensitivity of the landscape

⁷ <https://www.cumbria.gov.uk/planning-environment/countryside/countryside-landscape/civi/civi.asp>

⁸ <https://www.cumbria.gov.uk/elibrary/Content/Internet/538/755/2789/39435141836.pdf>

is considered to be Moderate/Low due to the presence of the adjacent Landscape of County Importance and prison, another large-scale feature of the area. The Site itself is characteristic of the national (2014) and regional landscape (2011) character assessments and wind farms are an acknowledged feature of the landscape and there is likelihood for continued renewable energy development within the character area as capacity has been identified in the Cumbria Wind Energy Supplementary Planning Document. The Development is for an extension of time resulting in the continued presence of the Haverigg II wind turbines for a further 10 years. It is considered that the landscape, due to the wind farms' established presence and modest scale of the turbines does have the capacity to absorb the continued presence of the wind turbines. Any landscape effects are medium-term, but reversible.

4 VISUAL APPRAISAL

The visual appraisal considers the effects on visual receptors, who are currently afforded views towards the Site and therefore may be affected by the continued presence of the wind farm.

4.1 Zone of Theoretical Visibility

Figure 3 illustrates the main areas from which the Site may be visible. This is a bare earth model and therefore there are limitations as it does not take into account existing vertical features such as buildings, structures, infrastructure or vegetation which would have the ability to screen views and or restrict visibility. It therefore provides a useful first analysis tool to help determine the extent of visual influence the Site has within the existing landscape. The ZTV indicates that the main areas of potential visibility are located predominantly up to 10 km from the site to the west, south, east and north east with distant (up to 8km) views to the north available, longer distance views northwards are restricted by the rising landform around Black Coombe. The main areas of visibility from the Lake District National Park is limited to the southern slopes of Black Coombe, A595 and around the village of Silecroft. The ZTV shows some isolated patches of visibility beyond 10km to the south of the Old Man of Coniston and the coastline to the north west. It is considered likely the visibility of the wind farm would be barely appreciated at these longer distances of between 10 to 25km.

4.2 Viewpoint Appraisal

An appraisal of visual effects was undertaken from 6 viewpoints, which were selected to represent typical views from key receptors at varying distances and orientations from the Site.

From each viewpoint the following information is provided:

- A representative photograph;
- A description of the existing view; and
- A qualitative assessment of the potential visual effects.

Viewpoint locations 1-6 are shown below. Distances are provided to the nearest turbine of either Haverigg II or Haverigg III Wind Farms.

The closest residential properties to the Site are located at Bank Head Estate, adjacent to the prison. Further properties are located on the north-eastern side of the prison off North Lane, Haverigg. Several of these properties have filtered views of the wind turbines above the prison fencing. In addition to properties located within settlements there are also a number of farmsteads and scattered individual properties within the surrounding farmland that have views towards the Site. No rights of way cross the Site. However, there is

evidence of informal public access through the Site by walkers and users of the motocross track. The closest public footpath to the Site runs northward from the western end of North Lane to Kirksanton. A further footpath runs northward from Kirksanton Haws to Kirksanton. Access along the beach is available above the mean high-water mark of the foreshore to the south-west of the Site, separated from it by the Haverigg sand dunes. There are also paths through the sand dunes and a stile into the Site along the southern boundary. More distantly, footpaths and access land located within the southern fells of the Lake District National Park provide locally elevated opportunities for views across the coastal fringe and Morecambe Bay.

Viewpoint 1: Former route of Coastal Path and Beach south of site, looking north east towards the Haverigg III turbines



Type of Viewer and distance from the application site	Walkers and horse riders walking along the beach. The former Cumbria Coastal Way route is no longer endorsed by the council but access is still available to the beach area. (Distance to nearest turbine: 300 m)
Existing View	Close distance views of the Haverigg III wind turbines although the bases and ancillary infrastructure such as the access roads and buildings are obscured from view by the sand dunes. Partial views of the perimeter stock proof fencing. Views of the Haverigg II turbines are obscured at this location due to intervening sand dunes and the location set back from the coastline. Views are available further north and south along the coastline.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years where views are available to the north and south along the coastline. Views from this location are obscured by the intervening sand dunes.

Viewpoint 2: A595/Lake District National Park, looking south towards Silecroft and the Haverigg wind farms beyond



Type of Viewer and distance from the application Site	Road users (Distance to nearest turbine: 2.8 km)
Existing View	Viewpoint taken from gate access along the A595. Elevated transient views available by road users across to the village of Silecroft and the Haverigg turbines in the distance, adjacent housing and prison, the Haverigg sand dunes and open relatively flat farmland with the Irish Sea beyond.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years.

Viewpoint 3: Footpath at Kirksanton, looking south towards the Haverigg II and III turbines



Type of Viewer and distance from the application Site	Road and footpath users (Distance to nearest turbine: 950 m)
Existing View	Viewpoint taken from the footpath and access road to the west of the village of Kirksanton. Middle distance views available of 3 of the Haverigg II and Haverigg III turbines. Bases partly obscured by intervening topography. Another two turbines are screened by the hedgerow/telegraph pole/ topography at this location.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years.

Viewpoint 4: Haverigg North Road, looking west towards the prison and the Haverigg II and III turbines beyond



Type of Viewer and distance from the application Site	Residential receptors (Distance to nearest turbine: 1 km)
Existing View	Viewpoint taken from the Bank Head Estate looking west towards the prison fencing and turbines beyond.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years.

Viewpoint 5: Main Street (minor road) between Haverigg village and Waingate Bridge Cottages, looking west towards the Haverigg II and III turbines



Type of Viewer and distance from the application Site	Road users (Distance to nearest turbine: 1.3 km)
Existing View	Views across grazing land towards the Haverigg wind turbines. All eight turbines can be seen and the prison building below the turbines on the left of the photograph. The turbine bases are partially screened by intervening topography, vegetation and the prison building.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years.

Viewpoint 6: Millom, St Georges Church Yard and Conservation Area, looking west towards the Haverigg II and III turbines



Type of Viewer and distance from the application Site	Church users, listed building, conservation area, residential receptors (Distance to nearest turbine: 2.7 km)
Existing View	Viewpoint taken from St Georges Churchyard (part of the Millom conservation area and adjacent to St Georges Church, a Grade II listed building). Views are limited by the intervening residential housing. Long distance filtered views of the wind turbines and prison building are available for residents on the south side of Millom.
Potential Changes to the View	Continued presence of the Haverigg II wind turbines for a further 10 years.

4.2.1 **Predicted visual effects**

Table 5.1 below sets out the key visual effects, which are likely to result from the proposed development. It should be read in conjunction with Figures 1 to 4.

Table 5.1: Predicted Visual Effects

Viewpoints	<p>Close distance views of the Haverigg III wind turbines only are available from viewpoint 1 although the bases and ancillary infrastructure such as the access roads and buildings are obscured from view by the sand dunes. Views of the Haverigg II turbines are not available from this viewpoint but are available further north and south along the coast. Partial views of the perimeter stock proof fencing available. Middle distance views are available of the turbines from viewpoints 2 to 4 with elevated transient views available from the A595 (VP2), this part of the road is located within the Lake District National Park. Partial views are available from the footpath/minor road west of Kirksanton (VP3) and North Lane at Haverigg (VP4).</p> <p>Views of the turbines are available from viewpoints 5 and 6 between 1.3 km and 2.7 km from the Site.</p>
Zone of Theoretical Visibility	<p>The ZTV (Figure 3) illustrates the potential visibility of the turbines based on topography only and does not take account of intervening vegetation or built form. As such the ZTV represents a worse case analysis of potential visibility. The ZTV indicates that theoretical open views of the wind turbines would be possible from the immediate (up to 2 km) north, east, west and south with longer distance views available towards the east, north east, west and south up to 10 km. Distant (over 8km) views north are restricted by the landform of Black Combe. Visibility diminishes after 10 km particularly to the south and east and becomes patchy although theoretical views are available over 10 km in isolated patches to the north west along the coastline, west out to sea, north east towards Broughton in Furness and small areas south of the Old Man of Coniston and south of Barrow in Furness.</p>
Views from residential properties	<p>Properties with the closest distance views, between 660 m to 1000 m to the nearest turbine, are located adjacent to the HMP Haverigg at the Bank Head Estate to the east and a cluster of properties to the north of the prison. Residents at Bank Head have views of the turbine blades above the prison security fence. Both the prison infrastructure and turbines blades are prominent features here depending on the orientation of the properties and distance from the prison fence. Properties located closer to the fence have limited views of the turbines. The cluster of properties located to the immediate north of the prison face toward the north away from the turbines.</p> <p>Other properties and residential areas with potential close distance views (less than 2 km, according to the Cumbria Wind Energy SPD Part 2, although this is based on turbine heights of 90 m)⁹ include properties at the north western edge of Haverigg village, Stoup Dub and the properties to the south of Kirksanton and nearby farmsteads such as High Layriggs.</p> <p>Properties with middle distance views include residential receptors at Millom. In particular, properties to the west and south of Millom.</p>
Residential Amenity/ overlooking, or overshadowing of properties	<p>None</p>

⁹ <https://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/3943512467.pdf>

Visual obstruction/ interruption	The Site is located within an open low-lying landscape. Pylons and the wind turbines form visible vertical elements with limited features such as woodland to visually absorb them. See Viewpoint 2.
Views from Public Rights-of-Way	<p>There are no public footpaths within the Site although unofficial routes are used to access the sand dunes and the motocross track.</p> <p>The nearest public right-of-way lies approximately 15 m to the north east of the Site boundary, informal footpaths within the sand dunes and beach and another PRoW to the north and west. All have views of the turbines and views are predominantly dependant on intervening sand dunes and vegetation.</p> <p>The Cumbria Coastal way is not endorsed by the council however access still exists along the beach. Close distance views are available of the turbines although views are obscured in places by the intervening sand dunes.</p>
Road and rail users	Transient views are available from the local road network including the A595 and A5093 to the north and north west of the Site although views are restricted by hedgerows along lower lying land. Views from higher elevations on the A595 to the north west provide elevated views across lower lying farmland and the coastline, although views are partly restricted by taller trees. The closest views are available from North Lane. Potential views from the railway line are dependent on intervening vegetation.
Views from Conservation Areas	The Millom Conservation Area lies 3 km to the east of the Site. Middle distance (2-5 km) views of the wind turbines are possible from the churchyard, although intervening residential areas partially screen views. The Site is too distant and small in scale to affect the setting of the Conservation Area.
Views from the Lake District National Park and Landscapes of County Importance	<p>The south western tip of LDNP lies approximately 850m to the north west of the site. Open views are predominantly gained from the A595 and southern slopes of Black Combe. Isolated distant patches of visibility are indicated on the ZTV from coastal areas to the north west and patches south of the Old Man of Coniston. Although distance, intervening vegetation and buildings restrict potential views.</p> <p>Close distance views are available from the county designated Landscapes of County Importance which lies immediately south of the site and longer distance views from the north. The ZTV indicates views from the north would be available but these views are partially restricted by intervening buildings and vegetation.</p>
Views from Listed Buildings	Potential middle-distance views from the St George's Church at Millom and adjacent buildings (Grade II) restricted by vegetation and residential buildings although views are available from the churchyard (see above). Due to distance and intervening residential areas the setting of the Listed Buildings at Millom would not be affected.

4.2.2 *Summary of Visual Effects*

The visual appraisal indicates that the most sensitive views of the Site, from the surrounding areas would be residents at the Bank Head Estate, properties in and around Haverigg and Kirksanton, transient views from PRoWs including the beach and road users and views from the motocross track. In the majority of the views the prison also forms a prominent feature. Any adverse visual impacts associated with the turbines is medium-term, but reversible.

Views from the A5093 are filtered and partly limited due to the height of intervening hedgerows. The coastal path is no longer endorsed by Cumbria County Council although access still exists along the beach and the area is well used by walkers and horse riders. The Site itself is a local resource used informally for walking with a stile from the Site into the sand dunes. The motocross track is a recent addition to the visual baseline and is located under one of the Haverigg II turbines and under two of the Haverigg III turbines.

There are elevated open views from the A595 within the National Park but these are set within the wider context of the coastal landscape with other vertical features such as pylons with taller trees partially limiting views. Other views from the National Park are limited to the southern slopes of Black Combe and isolated distant patches from coastal areas to the north west and south of the Old Man of Coniston. Although distance, intervening vegetation and buildings restrict potential views.

Close distance views are available from the Landscapes of County Importance which lies immediately south of the site and longer distance views from the north. Views are partially restricted by intervening buildings, landform and vegetation. The turbines are modest in scale and form a noticeable vertical feature but are not uncharacteristic of the landscape and are set within the context of other large-scale man-made features such as HMP Haverigg.

5 CUMULATIVE EFFECTS

In terms of cumulative effects, Haverigg has been the location of a wind farm site since 1992 when the adjacent Haverigg I was built (now Haverigg III which was repowered and constructed in 2005). The Haverigg II wind farm was granted planning permission in 1995 and the wind turbines are medium in size (62.5 m high). Since this time, several wind farm developments have been commissioned and operational sites are shown on Figure 4: Cumulative ZTV. In addition, a site to the south of Haverigg prison (5 turbines of 120.5m height) was also granted permission in 2015 but was not constructed.

In 2014 the Cumulative Impacts of Vertical Infrastructure (CIVI)¹⁰ document was produced, to consider the cumulative impact of vertical infrastructure over 15m in height, principally wind turbines, communications masts, and pylons carrying power lines, upon the landscape character and visual amenity in Cumbria and North Lancashire. The CIVI provides a baseline with which to evaluate development proposals for further vertical infrastructure development and to support decision-making about such development proposals.

The CIVI also seeks to:

'Assess how existing and proposed developments involving the introduction of vertical elements into the landscape are resulting in cumulative effects on landscape character and visual amenity; Identify the degree to which cumulative effects of vertical infrastructure developments upon landscape character may be considered a constraint on further such developments; Provide evidence base to support local policy.'

The document considered the sensitivity of the landscape within the study area and the sensitivity of the people who use that landscape to changes arising from vertical infrastructure developments, and how the existing and approved schemes affect the character of the landscape and the views experienced by people using it. The document provides guidance to planning officers and developers when considering new vertical infrastructure developments. Although it is not an adopted SPD it has been designed to supplement the Cumbria Wind Energy SPD, (which remains the primary source of guidance with respect to wind turbine assessment in Cumbria). The Haverigg turbines are classed as medium scale (51 to 100 m high) infrastructure within the CIVI. The CIVI document states that the Site is within an area of high landscape sensitivity. In terms of visual sensitivity, nearby settlements such as Millom and Haverigg, roads and footpaths along the coastline are considered to have high to moderate sensitivity to vertical infrastructure. The Site is considered to experience both significant landscape and visual effects and consequently the aim is to reduce or avoid these effects.

¹⁰ <https://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/42089105056.pdf>

The Cumbria Wind Energy Supplementary Planning Document (CWESPD) 2007 ¹¹ helps to inform decisions on the ability of the Cumbria landscapes to accommodate wind energy development, based upon consideration of landscape character, sensitivity and value.

The landscape capacity assessment undertaken as part of the Cumbria Wind Energy Supplementary Planning Document considers that the area (Coastal Margins) has a low to moderate capacity for small (3-5 turbines) and exceptionally a large group (6-9 turbines) in addition to the presence of the existing Haverigg wind farms (Haverigg II and III wind farms consist of a total of 8 wind turbines). Therefore, there is additional capacity for further turbines. In addition

Figure 4 highlights the extent of potential cumulative effects of onshore wind turbines within a 30 km area. Since the Haverigg II site was commissioned four other wind farms have been built and are located to the east approximately 8 to 13 km distant within a separate capacity area (Intermediate Moorland and Moorland Hill and Low Plateaus) identified as having moderate/high landscape capacity. Overall, the CWESPD and CIVI documents show some discrepancies with respect to the capacity for future vertical infrastructure/wind turbines. However, considering the above guidance, existing wind farms within the study area and previous wind turbine permissions it is considered the site has capacity for the continued presence of the Haverigg wind turbines and would not result in any adverse cumulative effects.

6 MITIGATION MEASURES

Mitigation measures have been considered within the Site boundary shown on Figures 1 and 2. It is not practical to undertake any planting works near the security fencing for HMP Haverigg (a prison) and there is limited potential for planting elsewhere within the Site. Any new scrub or woodland planting may encourage birds and bats to use the area resulting in potential for collisions with turbines, and any resultant screening of the wind turbines would be extremely localised. Overall, no mitigation measures are considered necessary.

7 CONCLUSIONS

The proposals are for an extension of the operational phase of the Haverigg II wind farm. The Site is located within the context of the adjacent Haverigg III wind farm and the prison within grazing land and a motocross track on a former airfield adjacent to the sand dunes and coastline of the Irish Sea.

The Lake District National Park lies 850 m to the north west with visibility of the wind turbines limited to long distance isolated patches along the north west coastline and to the south of the Old Man of Coniston and closer distance views from coastal villages such as Silecroft and the southern slopes of Black Combe and A595. Otherwise views from the LDNP are extremely limited by intervening landform and vegetation. A Landscape of County Importance is located immediately to the south and close distance views are available of the wind turbines. The landscape capacity assessment undertaken as part of the Cumbria Wind Energy Supplementary Planning Document considers the area has capacity for additional small to large wind farm infrastructure (up to 9 turbines) taking into consideration the presence of the existing wind farms (Haverigg II and III wind farms consist of a total of 8 wind turbines). The updated National Character Area profile and Cumbria Landscape Character Guidance (Sub type 2d: Coastal Urban Fringe) acknowledges that wind farms are a familiar feature of the area. It is considered that the landscape, due to the wind farms' established presence, modest scale of the turbines and in accordance with the SPD does have the capacity to absorb the continued presence of the wind turbines. Any landscape effects are medium-term, but reversible.

¹¹ <https://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/39435124412.pdf>

Landscape guidance recommends enhancement of landscape features such as woodland, scrub and hedgerow planting together with grassland enhancement. However, no mitigation measures are suggested due to the site's location and use.

Changes to the Landscape and Visual baseline since the 1995 permission are listed below:

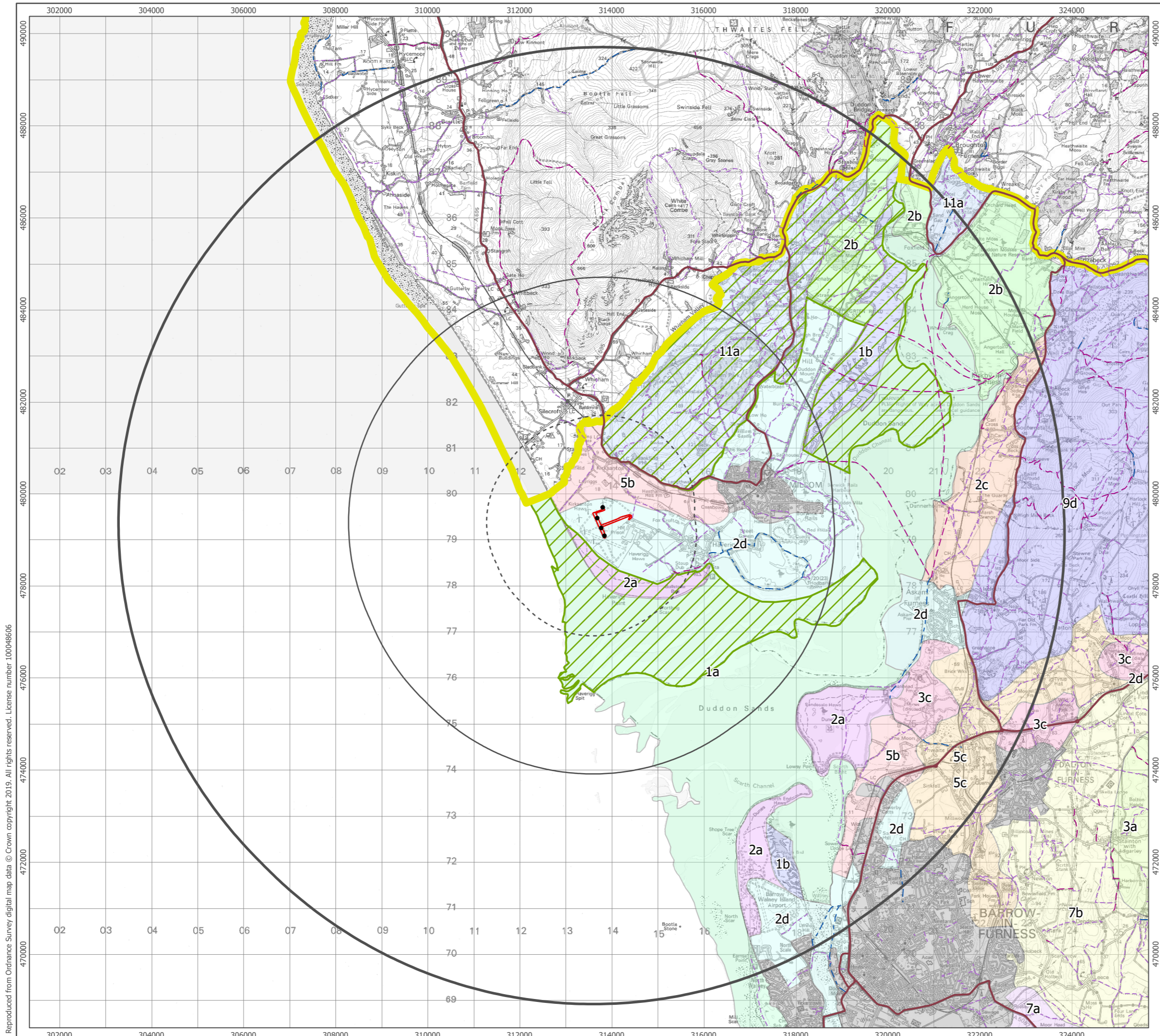
- Motocross track on the Site allowing increased public access;
- LCI immediately south of the Site;
- Cumbria Coastal Way no longer endorsed by the Council but access still available to the beach and sand dunes;
- An increase in wind farm sites in the wider area (10km and beyond);
- Taller hedgerow vegetation reducing views from the A5093;
- New guidance such as the Cumulative Impacts of Vertical Infrastructure and the Cumbria Wind Energy Supplementary Planning Document;
- Updated landscape character profiles; and
- Updated planning policy.

The visual baseline does not appear to have changed significantly with the most sensitive visual receptors located at the Bank Head Estate and other local properties at Haverigg, Kirksanton and individual farms. Transient close distance views are available from nearby PRoWs, informal routes across the site, users of the beach and the motocross track. Views from roads are similar except for the height of hedgerows which appear to be higher along sections of the A5093. Elevated, open views are available from the A595 and the southern tip of the Lake District National Park but these are set within the wider context of the coastal landscape with other vertical features such as pylons and HMP Haverigg. Middle distance views (2-5 km) are also available from locations on the western edge of Millom. In the majority of the views the prison also forms a prominent feature. The turbines are modest in scale and although they form a noticeable vertical feature, they are not uncharacteristic of the landscape. Any adverse visual impacts associated with the turbines are medium-term, but reversible.

Taking into account the existing character and quality of the landscape, the visual amenity of receptors, SPD guidance and the sites value at a community level, it is considered that the landscape is able to continue accommodating the wind farm without undue adverse landscape or visual effects. In addition, no adverse cumulative landscape or visual impacts are predicted.

APPENDIX 1 - FIGURES

- Figure 1: Landscape and Visual Baseline
- Figure 2: Visual Receptors
- Figure 3: Comparative Wind Farm ZTV
- Figure 4: Cumulative Wind Farm ZTV



- Site Boundary
- Turbine Location
- Lake District National Park
- Landscape Study Areas**
- 2 km Study Area
- 5 km Study Area
- 10 km Study Area
- Public Rights of Way**
- Footpath
- Bridleway
- Other routes with public access
- 'A' Class Roads
- Landscapes of County Importance
- Landscape Character Areas**
- 1a Intertidal Flats
- 1b Coastal Marsh
- 2a Dunes & Beaches
- 2b Coastal Mosses
- 2c Coastal Plain
- 2d Coastal Urban Fringe
- 34 Open Farmland & Pavements
- 3c Disturbed Areas
- 5b Low Farmland
- 5c Rolling Lowland
- 7a Low Drumlins
- 7b Drumlin Field
- 9d Ridges
- 11a Foothills
- Urban

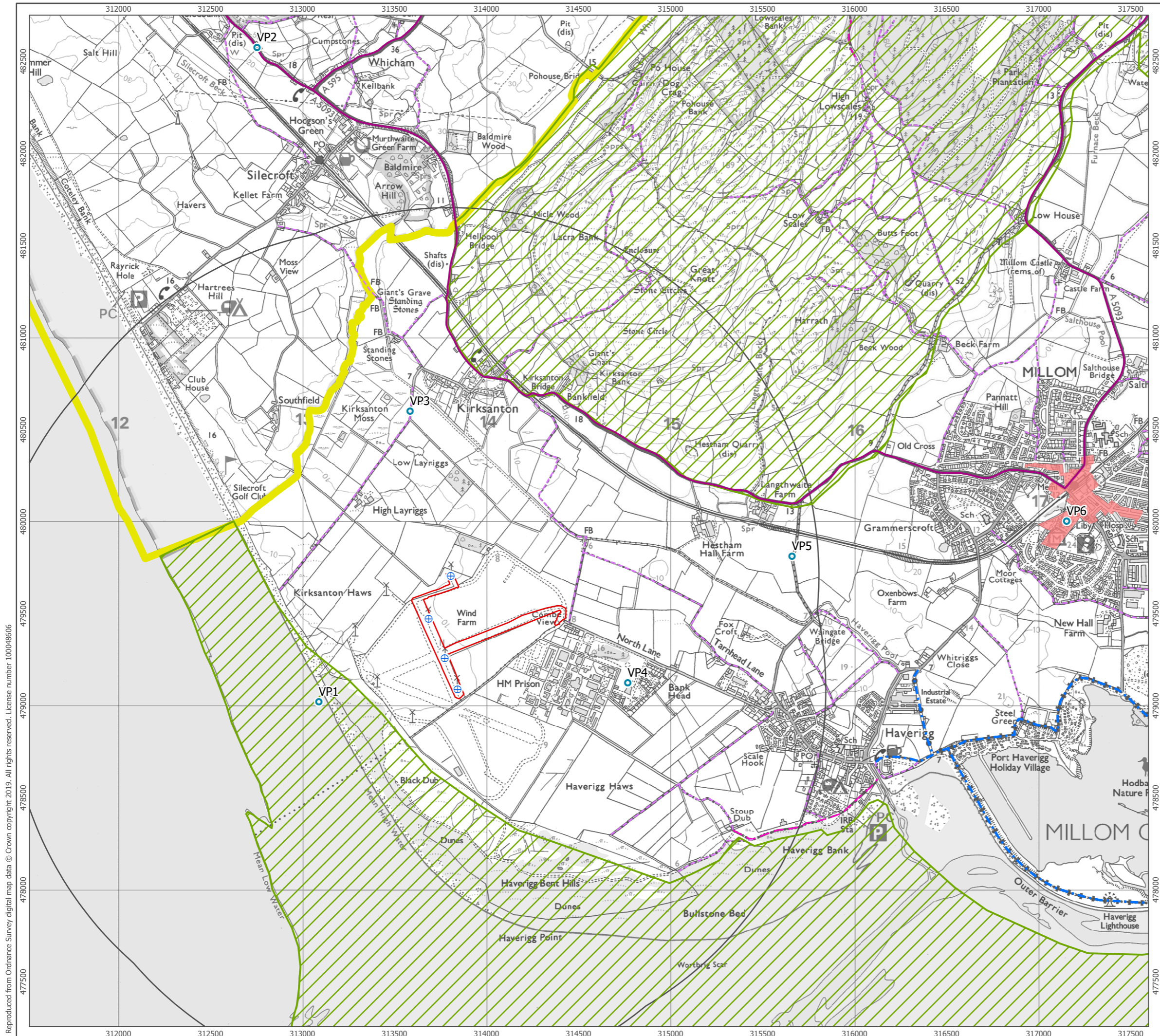


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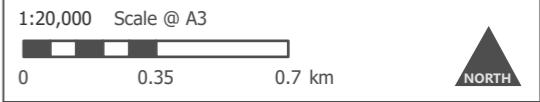
Landscape and Visual Baseline
Figure 1

**Haverigg II Wind Farm
Life Extension**

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- Site Boundary
- ⊕ Turbine Locations
- Viewpoints
- Landscape Study Areas**
- 2 km Study Area
- Lake District National Park
- Public Rights of Way**
- Footpath
- Bridleway
- Other routes with public access
- 'A' Class Roads
- Landscapes of County Importance
- Millom Conservation Area

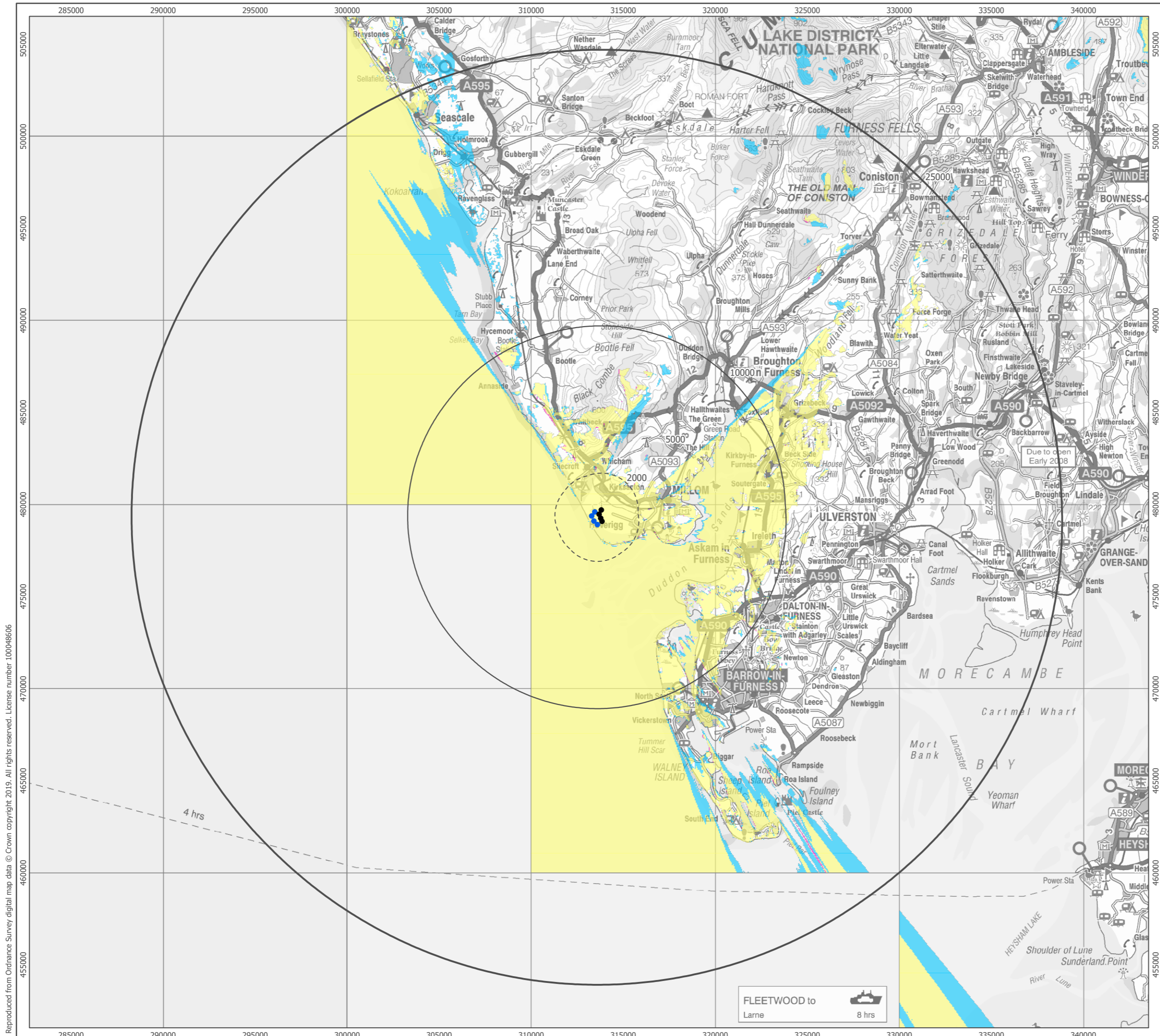


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Visual Receptors
Figure 2

**Haverigg II Wind Farm
Life Extension**

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- Haverigg II Turbine Location
 - Haverigg III Turbine Location
- Landscape Study Areas
- ⋯ 2 km Study Area
 - ▭ 10 km Study Area
 - ▭ 25 km Study Area
- Zone of Theoretical Visibility
- ▭ Only Haverigg II turbines may be visible
 - ▭ Only Haverigg III turbines may be visible
 - ▭ Haverigg II and III turbines may be visible

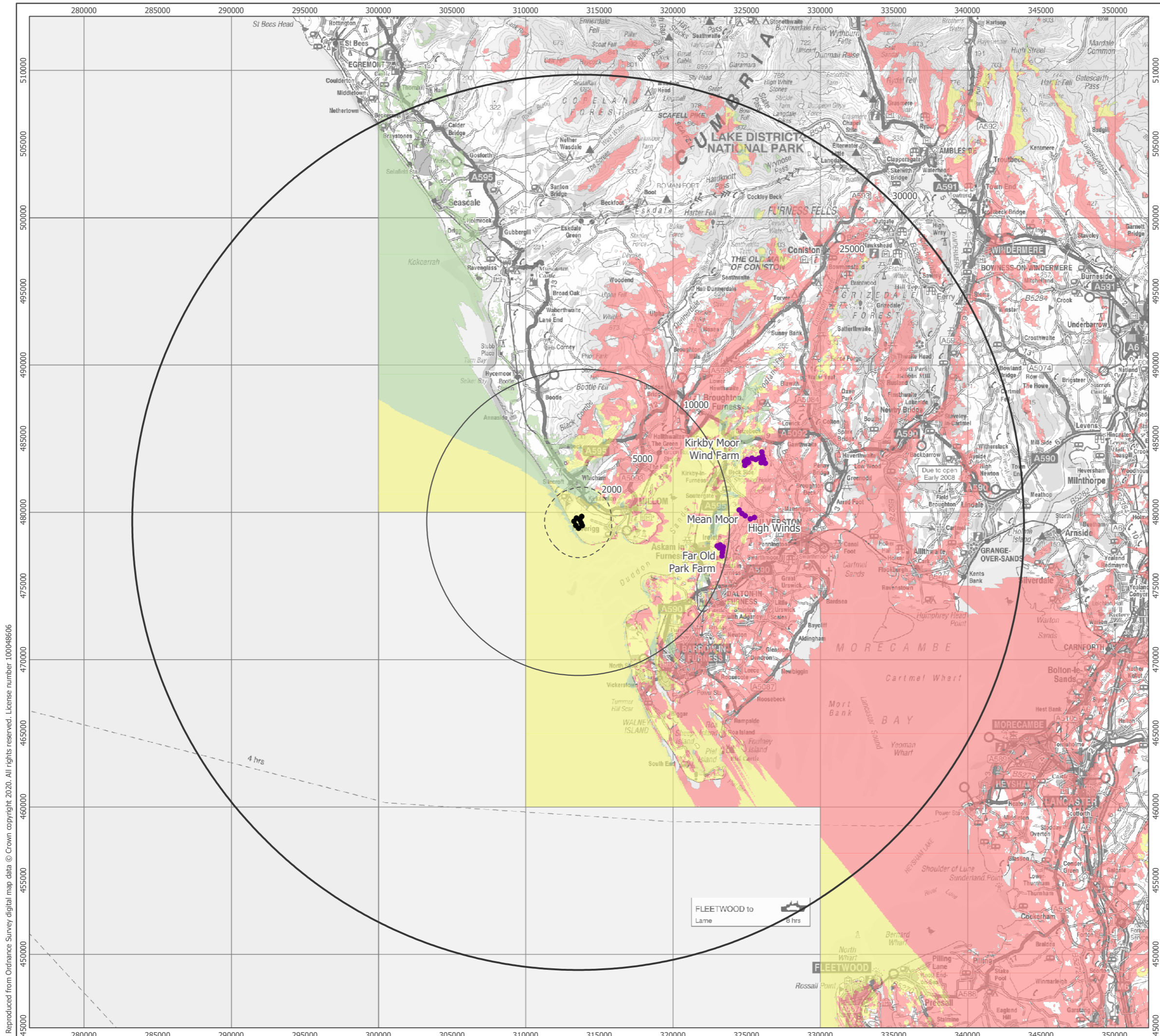
1:200,000 Scale @ A3
 0 4 8 km
 NORTH

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Checked By: GW	Date: 10/10/2019

Comparative Wind Farm ZTV
 Figure 3

Haverigg II and III Wind Farm
 Life Extension

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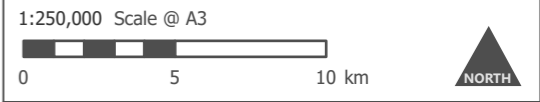
- Haverigg II and III Wind Farm
- Cumulative Wind Farm Development

Landscape Study Areas

- 2 km Study Area
- 10 km Study Area
- 30 km Study Area

Zone of Theoretical Visibility

- Haverigg turbines may be visible
- Cumulative turbines may be visible
- Both Haverigg and Cumulative turbines may be visible



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Cumulative Wind Farm ZTV
Figure 4

Haverigg II and III Wind Farm
Life Extension

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APPENDIX 2 - METHODOLOGY

Baseline

A landscape and visual baseline has been established by undertaking a detailed desk study, fieldwork, and analysis of findings. These items have been undertaken in line with GLVIA3 to create a detailed understanding of the existing landscape and visual context of both the Site and surrounding landscape within the study areas.

Establishing the landscape baseline included gathering data on the landscape character and how this varies through the study area; together with its geographic extent; and how it is experienced and valued.

The visual baseline establishes the areas from where the new components of the development can be seen, who can see them, the places where those who see them would be affected and the nature of views and visual amenity.

Together the established baseline provides an understanding of the components of the landscape and visual resource that may be affected by the development, which includes the identification of key receptors and viewpoints which represent such receptors. The baseline is of sufficient detail to enable a well-informed assessment of the likely significant effects on the baseline conditions of the development.

The desk-based assessment has involved the following key activities:

- Familiarisation with the landscape and visual resources of the area within which the development would be located;
- Identification of landscape and visual resources likely to be significantly affected by the development;
- Identification of the location of viewpoints, that were used to inform the assessment of effects of both landscape and visual resources; and
- Identification of suitable study areas for the LVA.

The desk-based assessment began with a review of legislation, policy and guidance including published landscape character assessments of the area and its wider context. This developed an understanding of the baseline environment within which the core 1 km Landscape Study Area is located and has formed the basis of LVA fieldwork.

Viewpoints identified through consultation and during desk studies were ground-truthed through fieldwork and their positions fixed prior to photography being undertaken. Landscape character areas were reviewed during fieldwork and the descriptions contained in the published landscape character assessment were augmented where necessary. Landscape and visual receptors were also assessed to ensure they are accurately represented through desk-based assessment.

Methods for assessing landscape and visual effects are based on the following guidance:

- The Landscape Institute with the Institute of Environmental Management and Assessment, "Guidelines for Landscape and Visual Impact Assessment", Third Edition, 2013 (GLVIA3);
- Landscape Character Assessment, Guidance for England and Scotland. Scottish Natural Heritage and the Countryside Agency, 2002); and
- Guidelines for Environmental Impact Assessment, IEMA (2004) (Assessing the Significance of Effects).

It should be noted that there is a distinction to be made between landscape and visual effects:

- **Landscape effects** are the result of a change to the fabric, character or quality of the landscape as a result of development. These include the following landscape receptors:
- Landscape components/features; and
- Landscape character – regional and local distinctiveness and perceptual qualities such as tranquillity, wildness, etc. Special interests e.g. designations, conservation sites, cultural associations;

- **Visual effects** are the effects on people (visual receptors) and their changes in available views through intrusion or obstruction and whether opportunities to enjoy views may be improved or reduced.

There may be substantial landscape effect but little visual effect if the Site is remote with no residential properties, public rights-of-way or other public access areas to view it. Alternatively, there may be visual effects and few landscape effects if a development does not result in physical changes to the landscape character. The EIA regulations specify that an EIA and consequently an LVIA must consider the direct effects and any indirect, secondary, cumulative, short-medium-long term, permanent and temporary, positive and negative effects of the Development. The time frames used for duration of effects are; Short term – 0 to 5 years; medium term – 5 to 10 years; and long term – 10 to 20 years. The methods for assessing landscape and visual effects are described below.

Assessment Criteria

The LVA assesses the effects of the Development upon landscape receptors i.e.:

"...the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape"¹²,

and visual receptors i.e.:

"...the people who would be affected by changes in views or visual amenity at different places."¹³

To do this the LVA uses a structured method that combines both objective assessment and subjective assessment (professional judgement). This methodology has been developed in line with and with reference to GLVIA3¹⁴ and through considerable experience of LVA on other similar sites.

The assessment methodology is set out below to inform and support a narrative of professional judgement and assessment of both landscape and visual effects. In line with IEMA guidelines described in Box 3.1 of GLVIA3, assessment is made based on linking judgements about the sensitivity of the receptor and about the magnitude of the effects to arrive at conclusions about effects defined as follows:

- The nature of the receptor likely to be affected (sensitivity); and
- The nature of the effect likely to occur (magnitude).

Sensitivity is based on a combination of judgement about susceptibility to change arising from a specific proposal combined with judgements about the value attached to a receptor.

Magnitude is based on a combination of judgement on size and scale, duration and reversibility of effect.

Where there is no change to the receptor, or indeed no view of the Extension the magnitude of change is assessed as **No Change** which would result in **No Effects**.

Landscape Effects

Methodology for Assessment

The criteria used to define potential adverse (negative) or beneficial (positive) effects on the landscape is described under the following headings:

- Sensitivity of a landscape;

¹² Landscape Institute and Institute of Environmental Management and Assessment, 2013, *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition, Routledge, London. Paragraph. 3.21, page 36.

¹³ Ibid.

¹⁴ Ibid

- Scale or magnitude of landscape effects; and
- Significance of landscape effects (for EIA projects only, not required for LVA).

Sensitivity

The sensitivity of landscape receptors is assessed through consideration of their value and susceptibility to change. For landscape receptors, value concerns the importance of the landscape resource as evidenced by the presence of landscape designations and professional judgement. Susceptibility is concerned with the landscapes ability to absorb change brought about by the development. The process for determining landscape sensitivity is set out below.

Susceptibility of the Landscape Receptors to Change

This means the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies¹⁵.

Susceptibility of landscape receptors to change has been assessed using the criteria set out in Table A2.1.

Table A2.1: Landscape Receptor Susceptibility to Change

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the development because the key characteristics of the landscape have no or very limited ability to accommodate it without undue adverse effects taking account of the existing character and quality of the landscape.
Medium	The landscape receptor is moderately susceptible to the development because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the development because the relevant characteristics of the landscape are generally able to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape.

Landscape Value

Table A2.2 below illustrates how the value has been determined.

Table A2.2: Landscape Value Criteria

Value	Landscape Designations	Description
International	World Heritage Site	Internationally valued and designated landscapes.
National	National Park; AONBs; Registered Parks and Gardens of Special Historic Interest; Ancient Woodland	Nationally valued and designated landscapes.
Local	Green Belt; Conservation Areas; Areas of High Landscape Value, Tree Preservation Orders (TPO)	Local authority landscape designations
Community	Undesignated Landscape	Landscapes which are not designated nationally or locally.

The European Landscape Convention promotes the need to take account of all landscapes, with less emphasis on the special and more recognition that ordinary landscapes, such as community

¹⁵ Landscape Institute Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Paragraph 5.40, Page 88.

landscapes also have their own value. The criteria used to assess undesignated (community value) landscapes are set out using Box 5.1 in GLVIA3¹⁶, as per Table A2.3.

Table A2.3: Factors for Assessing the Value of Undesignated Landscapes

Factor	Criteria
Landscape Quality (condition)	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
Scenic Quality	The term used to describe landscapes that appeal primarily to the senses (primarily but not wholly the visual senses).
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type.
Representativeness	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
Conservation Interests	The presence of features of wildlife, earth science or archaeological or historical and cultural interest can add to the value of the landscape as well as having value in their own right.
Recreation Value	Evidence that the landscape is valued for recreational activity where experience of the landscape is important.
Perceptual Aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity.
Associations	Some landscapes are associated with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area.

Landscape Sensitivity

Table A2.4 sets out the sensitivity rating and criteria to be used in the LVA, which results from a combination of value and susceptibility.

As has been noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to change.

¹⁶ Landscape Institute Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Box 5.1, Page 84.

Table A2.4: Landscape sensitivity criteria

Landscape sensitivity criteria		Value of Receptor		
		International/ National	Local	Community
Susceptibility to change	High	High	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low

Magnitude of Landscape Effects

Magnitude (scale) of landscape effects can be Adverse (negative), No change or Beneficial (positive). It is generally based on the nature of the development the degree of change to the landscape resulting from the development, and the duration (short-, medium- or long-term) and nature of the effect, whether permanent or temporary.

Size or Scale

Judgements are needed about the size or scale of change in the landscape that is likely to be experienced as a result of each effect. GLVIA3 states that 'judgements should, for example, take account of:

- The extent of the existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape – in some cases this may be quantified;
- The degree to which aesthetic and perceptual aspects of the landscape are altered either for example, removal of existing components of the landscape or by addition of new ones – for example, removal of hedges may change a small scale, intimate landscape into a large-scale, open one, or introduction of new buildings or tall structures may alter open skylines; and
- Whether the effect changes the key characteristics of the landscape, which are critical to its distinctive character.

Geographical Extent

The geographical area over which the landscape effects would be felt is also considered. This is dependent upon the nature of the proposal and the scale of effects upon the receiving landscape; however, in general effects may have an influence at the following scales:

- At the **Site** level, within the Extension site itself;
- At the level of the **immediate setting** of the Site;
- At the scale of the **landscape type or character area** within which the proposal lies; or
- On a larger scale, influencing several landscape types or character areas.

Duration

Duration can usually be simply judged on a scale such as:

- Short-term: 0-5 years;
- Medium-term: 5-10 years; and
- Long-term: 10-40 years.

Reversibility

Reversibility is a judgement about whether or not a development can be removed, and once removed can the landscape be fully restored. The following are examples of the type of land use and the respective assessment of reversibility defined in GLVIA3:

- Permanent, is irreversible change to the landscape, for example housing development, as it not possible to remove the development and restore the land to the original state;
- Partially Reversible, change to the landscape, where the landscape can be restored to something similar to the landscape that was removed. For example, mineral development, as it is possible to restore the land to something similar to the original state, but not the same state; and
- Reversible, change to the landscape where the landscape can be fully restored. This also includes construction activities which are of temporary nature.

The following guidelines are used to categorise Magnitude.

Table A2.5: Criteria for Assessing the Magnitude of Landscape Effects

High	Adverse The development is the dominant feature and there is severe damage or change to key characteristics, features and elements of the landscape, and/or the effects are long-term and irreversible.
	Beneficial The development offers large scale or major improvement to landscape quality through extensive restoration or enhancement.
Medium	Adverse The development forms new features that results in partial damage or change to key characteristics, elements and features of the landscape, and/or the effects are medium- to long-term and largely irreversible.
	Beneficial The development offers benefit to, or addition of, key landscape characteristics, features and elements resulting in an improvement to landscape quality.
Low	Adverse Some measurable change where the development constitutes a minor feature in the landscape and results in loss of one or more key characteristics, and/or the effects are short- to medium-term or could be reversible.
	Beneficial The proposals offer minor benefit to, or addition of key landscape characteristics, features or elements and a minor improvement in landscape quality.
Negligible	Adverse The proposal results in very minor loss or change to the characteristics, features and elements that contribute to character, and/or the effects are likely to be short-term or could be reversible.
	Beneficial The proposal results in very minor beneficial change to the characteristics, features and elements that contribute to character.
No Change	No loss or alternation of characteristics, features or elements which contribute to the landscape. No observable impact whether positive or negative.

Deciding on Overall Magnitude of Landscape Change

The overall magnitude combines size and scale, geographical extent, duration and reversibility as set out in Table A2.6.

Table A2.6: The Assessment of Overall Magnitude of Change

Category	Description
Substantial	A large extent of existing landscape elements would be lost, the proportion that this represents within the landscape is considerable and the resultant change to the landscape character resulting from such a loss is large. The effect changes the key characteristics of the landscape, which are critical to its distinctive character.

Category	Description
	<p>Large scale alteration of the aesthetic and perceptual aspects of the landscape and becomes a key additional aspect.</p> <p>The change would affect all of the landscape receptors being assessed as the development would occupy a large geographical extent.</p> <p>The effects are either of a long duration, permanent, or irreversible /reversible change to the landscape.</p>
Moderate	<p>A medium extent of existing landscape elements would be lost, the proportion that this represents within the landscape is medium and the resultant change to the landscape character resulting from such a loss is medium.</p> <p>The effect changes some of the key characteristics of the landscape, which are critical to its distinctive character.</p> <p>Medium scale alteration of the aesthetic and perceptual aspects of the landscape.</p> <p>The change would affect a medium extent of the landscape receptors being assessed as the development would occupy a moderate geographical extent.</p> <p>Partially Reversible, change to the landscape, where the landscape can be restored to something similar to the landscape that was removed.</p> <p>The effects are either of a long / or medium duration, permanent, or irreversible /reversible change to the landscape.</p>
Slight	<p>A small extent of existing landscape elements would be lost, the proportion that this represents within the landscape is low and the resultant change to the landscape character resulting from such a loss is low.</p> <p>The effect changes a small number of the key characteristics of the landscape, which are critical to its distinctive character.</p> <p>Small scale alteration of the aesthetic and perceptual aspects of the landscape such as the, removal of existing components of the landscape or by the addition of new ones.</p> <p>The change would affect a small part of the landscape receptors being assessed as the development would occupy a small geographical extent.</p> <p>The effects are either of a medium / or short duration and reversible change to the landscape.</p>
Negligible	<p>A barely perceptible extent of landscape features and elements of importance to the character of the baseline are lost.</p> <p>There is a barely discernible change to aesthetic and / or perceptual attributes of landscape character and such changes occurs across a very limited geographical area and / or proportion of the landscape receptor.</p> <p>The change would affect only a negligible part of the landscape receptors being assessed as the development would occupy.</p> <p>The effects are of short duration and reversible.</p>

Visual Effects

Visual receptors are defined in GLVIA3 as:

"...people within the area who would be affected by the changes in views and visual amenity – usually referred to as 'visual receptors'. They may include people living in the area, people who work there, people passing through on road, rail or other forms of transport, people visiting promoted landscapes or attractions, and people engaged in recreation of different types".

The viewpoints themselves are not visual receptors.

People have different responses to views which are dependent upon context such as the:

- Location;
- Time of day;
- Season; and
- Degree of exposure to views.

Responses to views are also dependent upon the purpose of people being in a particular place such as:

- Recreation;
- Residence;
- Employment; and
- Passing through on roads, rail or other forms of transport.

As people move through the landscape, certain activities or locations may be specifically associated with the experience and enjoyment of the landscape, such as:

- The use of paths such as core paths, footpaths, bridleways, byways open to all traffic (BOATs) and National Trails;
- National or local cycle routes; and
- Tourist or scenic routes, and associated viewpoints on land or water.

Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, should be assessed in terms of both the value attached to particular views and to their susceptibility to change in views and visual amenity.

Susceptibility of Visual Receptors to Change

The susceptibility of visual receptors to changes in views depends upon:

- *"The occupation or activity of people experiencing the view at particular locations; and*
- *The extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations."*¹⁷

The criteria used to assess the susceptibility of a visual receptor are summarised in A2.7.

Table A2.7 Visual Receptor Susceptibility to Change

Susceptibility	Type of Receptor
High	Residents at home; People whether residents or visitors, who are engaged in outdoor recreation, including the use of public rights of way, whose attention or interest is likely to be focused on the landscape and on particular views; Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience; Communities where views contribute to the landscape setting enjoyed by residents in the area; and Travellers on road, rail or other transport routes along scenic routes, where the appreciation of the view contributes to the enjoyment and quality of the journey.
Medium	Travellers on road, rail or other transport routes.
Low	People engaged in, outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape; People at their place of work, whose attention may be focussed on their work or activity, not on their surroundings; and where the setting is not important to the quality of working life. Road users, where the view is fleeting and incidental to the journey.

Value of Views

The value attached to views should be made on judgements based on the following:

- Recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and

¹⁷ Ibid. 1. Paragraph 6.32

- Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature or art.

The criteria used to assess the value of views are summarised in Table A2.8.

Table A2.8 Value Attached to Views

Value	Criteria
High	Views from and within landscapes / viewpoints of national importance, highly popular visitor attractions where the view forms an important part of the experience, or heritage assets, or through planning designations such as conservation areas, listed buildings, Registered Parks and Gardens, or with important cultural associations, or where the view is deemed by the assessor to be of a high value.
Medium	Views from landscapes / viewpoints of regional/district importance, or visitor attractions at regional or local levels where the view forms part of the experience, or local planning designations, or with local cultural associations, or where the view is deemed by the assessor to be of a medium value.
Low	Views from landscapes / viewpoints with no designations, and not particularly popular as a viewpoint, with minimal or no cultural associations, or where the view is deemed by the assessor to be of a low small value.

Sensitivity of Visual Receptors

The sensitivity of visual receptors is defined in terms of the relationship between the value of views and the susceptibility of the different viewers to the proposed change. Table A2.9 summarises the nature of the relationship but it is not formulaic and only indicates general categories of sensitivity. Professional judgements are made on the merit of the view based on the visual receptor, with Table A2.10 providing additional guidance.

Table A2.9 sets out the general criteria used to evaluate sensitivity of visual receptors assessed in the LVA with justification for each evaluation given.

Table A2.9 Visual sensitivity criteria

Visual sensitivity criteria		Value of Receptor		
		High	Medium	Low
Susceptibility to change	High	High	Medium	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low

As part of the analysis process the relative sensitivity of the visual receptors has been assessed using the criteria above and is based on the proximity and context of the viewpoint, the expectations of the viewer and the importance of the view (Refer A2.10 below.)

Table A2.10: Criteria for Assessing the Sensitivity of Visual Receptors

Sensitivity	Description
High	<ul style="list-style-type: none"> Nationally important tourist attractions. Recreational routes e.g. long distance footpaths. Designated cultural/historical sites with large visitor numbers. Residential properties. Tourist destinations. Holiday accommodation.
Medium	<ul style="list-style-type: none"> Public open space. Recreational grounds and outdoor sports facilities. Parks. Golf courses. Local cycle-ways, bridleways, canal towpaths and footpaths.
Low	<ul style="list-style-type: none"> People at places of work/ office accommodation. Educational facilities. Commercial/ retail areas. Roads and public car parks.
Negligible	<ul style="list-style-type: none"> Industrial areas Farmland/forest plantation (not publicly accessible) Motorways and rail-lines.

Magnitude of Visual Change

The magnitude of change to visual receptors is assessed in terms of the following:

- "The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;*
- The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture; and*
- The nature of the view of the proposed development, in terms of the relative amount of time over which it would be experienced and whether views would be full, partial or glimpses."*

Tables A2.11 to A2.12 set out the criteria used to assess the magnitude of visual change. Not all aspects of a criterion need to be met for an evaluation to be given.

Table A2.11: Magnitude of Visual Change: Size /Scale

Criteria	Category
Large	The proposals would cause a complete or very large change in the view, resulting from the loss of important features in or the addition of significant new ones, to the extent that this would substantially alter the composition of the view and the visual amenity it offers. Views are often full or sequential.
Medium	The proposals would cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small	The proposals would cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible	The proposals would cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would barely alter

Criteria	Category
	the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposals would cause no change to the existing view.

Geographical Extent

The geographical extent of the visual change identified at viewpoints is assessed by reference to a combination of the ZTV and field work. The following factors are considered:

The geographical extent of a visual effect reflects:

- The angle of view in relation to the main activity of the receptor;
- The distance of the viewpoint from the Extension; and
- The extent of the area over which the changes would be visible.

Table A2.12: Magnitude of Visual change - Geographical Extent

Criteria	Description
Large	The angle of view in relation to the main activity of the receptor is wide; The distance of the viewpoint from the development is close; and The extent of the area over which the changes would be visible is large.
Medium	The angle of view in relation to the main activity of the receptor is moderate; The distance of the viewpoint from the development is moderate; and The extent of the area over which the changes would be visible is moderate.
Small	The angle of view in relation to the main activity of the receptor is small; The distance of the viewpoint from the development is far; and The extent of the area over which the changes would be visible is small.
Negligible	The angle of view in relation to the main activity of the receptor is negligible; The distance of the viewpoint from the development is distant; and The extent of the area over which the changes would be visible is barely perceptible.
No Change	There are no changes to the existing view.

Duration and Reversibility of Visual Change

Duration

The following terminology, which considers whether views would be permanent and irreversible or temporary and reversible, is used to describe the duration of the visual change at representative viewpoints:

- Short-term: 0-5 years;
- Medium-term: 5-10 years; and
- Long-term: 10 to 40 years.

Given the operational lifetime of the Extension is not fixed, for the purposes of this assessment the Extension has been assessed as long-term.

Reversibility

Reversibility is a judgement about whether or not a development can be removed, and once removed can the view be fully restored. The following are examples of the type of land use and the respective assessment of reversibility defined in GLVIA3.

- Permanent, is irreversible change to the landscape, for example housing development, as it not possible to remove the development and restore the land to the original state;
- Partially Reversible, change to the landscape, where the landscape can be restored to something similar to the landscape that was removed. For example, mineral developments, as it is possible to restore the land to something similar to the original state, but not the same state; and
- Reversible, change to the landscape where the landscape can be fully restored. This also includes construction activities which are of temporary nature.

Deciding on Overall Magnitude of Visual Change

The three factors that contribute to assessment of the magnitude of visual change are combined as shown in Table A2.13.

Table A2.13: Assessment of Magnitude of Visual Change

Magnitude evaluation	Description of criterion
Substantial	<p>The proposals would cause a complete or very large change in the view, resulting from the loss of important features in or the addition of significant new ones, to the extent that this would substantially alter the composition of the view and the visual amenity it offers. Views are often full or sequential.</p> <p>The angle of view in relation to the main activity of the receptor is wide.</p> <p>The distance of the viewpoint from the development is close.</p> <p>The extent of the area over which the changes would be visible is large.</p> <p>The duration is long-term.</p> <p>Permanent change to the view.</p>
Moderate	<p>The proposals would cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.</p> <p>The angle of view in relation to the main activity of the receptor is moderate.</p> <p>The distance of the viewpoint from the development is moderate</p> <p>The extent of the area over which the changes would be visible is moderate.</p> <p>The duration is medium-term</p> <p>Partially reversible change to the view.</p>
Slight	<p>The proposals would cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would partially alter the composition of the view and the visual amenity it offers. Views may be partial only.</p> <p>The angle of view in relation to the main activity of the receptor is slight.</p> <p>The distance of the viewpoint from the development is slight.</p> <p>The extent of the area over which the changes would be visible is slight.</p> <p>The duration is short-term.</p> <p>Reversible, change where the landscape can be fully restored.</p>
Negligible	<p>The proposals would cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.</p> <p>The angle of view in relation to the main activity of the receptor is negligible.</p> <p>The distance of the viewpoint from the development is distant.</p> <p>The extent of the area over which the changes would be visible is barely perceptible.</p>
No Change	There are no changes to the existing view.

The nature of an effect is also assessed. This is dependent on a number of criteria which vary between effects upon the landscape and effects on visual amenity. Effects are classified as positive, neutral or negative according to the following definitions:

- **Beneficial** effects contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, positive attributes. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components;
- **Neutral** effects occur where the development neither contributes to nor detracts from the landscape and visual resource or where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation; and
- **Adverse** effects are those that detract from or weaken the landscape and visual resource through the introduction of elements that contrast in a detrimental way with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its positive characterisation.

The LVA describes the overall effects on receptors and explains the justification for each assessment. For each assessed effect, a conclusion has been drawn on whether the effect is beneficial, neutral or adverse.

Judging the Significance of Landscape and Visual Effects

The significance of landscape and visual effects is determined by combining judgments on sensitivity with the predicted magnitude of effect. For non-EIA projects such as landscape appraisals, assessing the significance of effects is not required.¹⁸

¹⁸ Landscape Institute Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Page 28