



Chapter 5

Landscape and Visual Impact Assessment

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Chapter 5

Landscape and Visual

5.1 Introduction

5.1.1 Background

1. This Landscape and Visual Impact Assessment (LVIA) of Harestanes South Windfarm Extension has been undertaken by Chartered Landscape Architects at WSP on behalf of the Applicant.
2. The LVIA reports the assessment of likely significant effects on the landscape and on visual amenity arising from the Proposed Development. Landscape and visual assessments are separate although linked processes, describing closely related but distinct sets of effects.

5.1.1.1 Landscape

3. Landscape assessment considers the effects of change and development on landscape as a resource.
4. The character of the landscape derives from a combination of physical factors, natural processes and human intervention. Landscape effects are a combination of the physical changes to the fabric of the landscape arising from the Proposed Development and perceptual changes – the way these physical changes alter how the landscape is perceived.
5. The landscape assessment considers the effect of the Proposed Development on the landscape as a whole, effects on significant individual elements of the landscape, and effects on characteristic combinations or patterns of elements and how these are seen to affect its character and quality.

5.1.1.2 Visual

6. Visual assessment is concerned with the views that are available to people who may be affected by the Proposed Development, and their perception and responses to changes in these views.
7. Visual effects arise from changes in the composition and character of views available in the area affected. The assessment considers the likely change that would be experienced, including the effects both on specific views and on general visual amenity – the pleasantness of the view or outlook – that people potentially affected enjoy.
8. For the purposes of assessment, whilst it is the people living, working, passing through or enjoying recreational activities in the area who actually see the views and enjoy the visual amenity, it is the places they may occupy that are mapped and described as the visual receptors.
9. A Cumulative Landscape and Visual Impact Assessment (CLVIA), which considers effects as a result of the addition of the Proposed Development to other relevant windfarms is also included.
10. This chapter should be read in conjunction with the following Appendices:

- **Appendix 5.1 LVIA Methodology**
- **Appendix 5.2 Viewpoint Analysis**
- **Appendix 5.3 Residential Visual Amenity Assessment (RVAA)**
- **Appendix 5.4 Wild Land Assessment**
- **Appendix 5.5 Landscape and Visual Lighting Assessment**
- **Appendix 5.6 Cumulative Context**

- **Appendix 13.3 Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan**

11. This chapter is also supported by figures and visualisations as follows:

- **Volume 2: Figures 5.1 to 5.22;**
- **Volume 3: Visualisation Figures 5.23 to 5.43; and**
- **Volume 4: Technical Appendix Figures**

5.1.2 The Proposed Development

12. The Site and layout are shown on **Figure 4.1 Site Layout Plan**. The Site falls entirely within the Dumfries and Galloway administrative area. This LVIA is based on an indicative candidate turbine with a 125 metre (m) hub height, a 150m rotor diameter and a maximum blade tip height of 200m. Other elements of infrastructure of the Proposed Development assessed in this chapter can be found on **Figure 4.1 Site Layout Plan** and described in **Chapter 4: Development Description**. The landscape and visual aspects of the Site selection and design are described in full in **Chapter 3: Site Selection and Design**. The agreed LVIA Study Area is a 30km radius from the proposed turbines and is justified and explained in more detail in **Section 5.4.1**.

5.2 Legislation, Policy and Guidance

5.2.1 Legislation

5.2.1.1 European Landscape Convention (ELC)

13. The UK is a signatory to the European Landscape Convention (ELC) which was ratified in 2006 and became binding in the UK from 1 March 2007. The ELC defines Landscape as “*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*” (Council of Europe, 2000). It further states that the ELC “*covers natural, rural, urban, and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes.*”
14. The ELC requires “*landscape to be integrated into regional and town planning policies and in cultural, environmental, agricultural, social and economic policies, as well as any other policies with possible direct or indirect impacts on landscape*”.
15. Schedule 9 of the Electricity Act 1989 is the only legislation which covers landscape character or visual amenity in the UK. This identifies a duty for developers of electricity infrastructure to preserve natural beauty and mitigate effects on amenity. Further detail on this legislation is provided in **Chapter 3: Site Selection and Design**. The spirit of the ELC is also carried through in planning policy and government guidance. It provides a framework for NatureScot’s (formerly Scottish Natural Heritage (SNH)) policy and guidance on Scotland’s landscapes.

5.2.2 Policy

5.2.2.1 National Policy

16. Scotland’s National Planning Framework 3 (NPF3), which was published in 2014 is the long-term strategy and spatial expression of the Government’s long-term vision for development and investment in infrastructure. As part of this, the Scottish Planning Policy (SPP) was published in 2014 and sets out the national planning policies on the development and use of land in Scotland, including onshore windfarms. Specifically, the SPP document sets out the requirement for planning authorities to produce spatial frameworks for windfarm development that are based on the following:
 - Group 1: Areas where windfarms will not be acceptable – National Parks and National Scenic Areas;
 - Group 2: Areas of significant protection – nationally significant environmental assets (such as wild land) and community separation (2km from cities, towns and villages identified in Local Development Plans); and
 - Group 3: Areas with potential for windfarm development – the resulting remaining areas after identification of Group 1 and Group 2.
17. The spatial frameworks provide the basis of the relevant local policy which is considered in more detail below.

5.2.2.2 Local Policy

18. The Site and majority of the Study Area fall within Dumfries and Galloway Council's authority boundary. A small part of the Study Area to the north east falls within the Scottish Borders boundary, and an area at the north of the Study Area falls within South Lanarkshire boundary. As there would be very limited or no potential visibility of the Proposed Development in these areas (as determined in **Section 5.4.1** below) only policy and guidance from Dumfries and Galloway has been included within this chapter.

Dumfries and Galloway Local Development Plan 2 (LDP2) 2019

19. The Dumfries and Galloway Local Development Plan was adopted in October 2019. It provides the planning framework and guides the future use and development of land within the Dumfries and Galloway area. The Spatial Framework (LDP2, Map 8: Wind Energy Spatial Framework) indicates that the Site is located in an area with potential for windfarm development. Specific to onshore renewable energy Policy IN1: Renewable Energy provides a general framework for the assessment of renewable energy, with Policy IN2 addressing Wind Energy specifically.
20. With regards to landscape and visual impacts, LDP2 Policy IN2: Wind Energy states that: "The acceptability of any proposed wind energy development will be assessed against the following considerations:
- *The extent to which the landscape is capable of accommodating the development without significant detrimental landscape or visual impacts, including effects on wild land;*
 - *That the design and scale of the proposal is appropriate to the scale and character of its setting, respecting the main features of the site and the wider environment and that it addresses fully the potential for mitigation;*
 - *The extent of any cumulative detrimental landscape or visual impact or impacts on existing patterns of development from two or more wind energy developments and the potential for mitigation;*
 - *The extent of any detrimental impact on communities, individual dwellings, residents and local amenity including assessment of the impacts of noise, shadow flicker, visual dominance and the potential for associated mitigation."*
21. Other policies relevant to the LVIA and Proposed Development include:

Policy NE2: Regional Scenic Areas

22. Policy NE2 states that: "The siting and design of development within a Regional Scenic Area (RSAs) should respect the special qualities of the area. Development within, or which affects Regional Scenic Areas, may be supported where the Council is satisfied that:
- *the factors taken into account in designating the area would not be significantly adversely affected; or*
 - *there is a specific need for the development at that location."*

23. There are several Regional Scenic Areas in the Study Area and these are described in **Section 5.5** and the potential effects assessed in **Section 5.11**.

Policy NE3: Areas of Wild Land

24. Policy NE3 states that: "*Development which would affect the Merrick Wild Land Area in Galloway and the Talla Hart Fell Wild Land Area north of Moffat would not be supported unless the Council is satisfied that it is demonstrated that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation."*

25. The Talla Hart Fell Wild Land Area lies within the Study Area and is described and assessed in **Appendix 5.4 Wild Land Assessment**.

Policy HE6: Gardens and Designed Landscapes

Policy HE6 states that: "*The Council will support development that protects or enhances the significant elements, specific qualities, character, integrity and setting, including key views to and from, gardens and designed landscapes included in the Inventory of Gardens and Designed Landscapes or the Non-Inventory List*".

26. The setting and cultural heritage aspects of Gardens and Designed Landscapes is considered in **Chapter 10 Archaeology and Cultural Heritage**. This LVIA considers the contribution that Gardens and Designed Landscapes

make to the character of the landscape and the potential effects upon visitors to them. The Gardens and Designed Landscapes are described in Section 5.5.3.7.

5.2.2.3 LDP2 Supplementary Guidance (SG): Wind Energy Development: Development Management Considerations (February 2020)

27. Section 2 of the Wind Energy SG supports Policy IN1 and IN2 of the LDP2. Section 3 outlines the issues that should be considered when assessing proposals for wind energy developments. Section 3C sets out a detailed approach to the landscape and visual considerations which all windfarm proposals will be assessed against, highlighting the following:
- *The extent to which the landscape is capable of accommodating the development without significant detrimental landscape or visual impacts, including effects on wild land; and*
 - *That the design and scale of the proposal is appropriate to the scale and character of its setting, respecting the main features of the site and the wider environment and that it addresses full the potential for mitigation.*
28. Section 3C also makes reference that proposals should reflect the guidance within the Dumfries and Galloway Windfarm Landscape Capacity Study (DGWLCS) (further discussed in **Sections 5.7 and 5.9**) and NatureScot's Siting and Designing Windfarms in the Landscape' (SNH, Version 3, Feb 2017).
29. Section 3D provides a detailed approach to the cumulative landscape and visual considerations, identifying the following criteria in D11 to which Proposals will be tested on:
- *"Clustering/containing development, consolidating an existing pattern.*
 - *Strategic spaces between established clusters of development.*
 - *Set back from sensitive landscapes.*
 - *Potential coalescence between existing/consented development and/or clusters of development.*
 - *Maintain the visual distinction between areas where windfarms are a key characteristics/'wind farm landscapes' and areas outwith them, where windfarms occur as isolated features or not at all."*
30. Section 3E concerns the effects on local amenity and communities, in particular residential visual amenity, and section 3E6 requires that surveys are undertaken where '*the impact on residential visual amenity could potentially be so great as to materially affect the living conditions of the occupiers*'.

31. A Residential Visual Amenity Assessment (RVAA) has been undertaken and is presented in **Appendix 5.3 RVAA**.

5.2.2.4 LDP2 SG: Part 1 Wind Energy Development: Development Management Considerations Appendix 'C' Dumfries & Galloway Wind Farm Landscape Capacity Study (February 2020)

32. The Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWLCS) was adopted as part of LDP2's Wind Energy SG in February 2020. It provides some minor updates (largely relating to small wind typologies) to the Adopted June 2017 version of the same name.
33. The DGWLCS examines the landscape character baseline with regard to its sensitivity to different sizes of wind turbine development and provides more locally defined landscape character areas on this basis. As windfarm specific LCAs, in accordance with NatureScot's advice, the DGWLCS LCAs will form the main landscape and visual baseline for this LVIA (supplemented by NatureScot's Scotland Landscape Character Assessment, 2019).
34. The Site falls within the Ae landscape unit of the Foothills with Forest (18A) character type, which has been assessed by the DGWLCS as having a medium landscape value. The 2017 study concluded that no turbines over 150m would be able to be accommodated as new developments within this unit or any other in Dumfries and Galloway, except for one unit of the Southern Uplands.
35. The DGWLCS identifies that windfarm development is a key characteristic of the Ae unit of the Foothills with Forest Landscape Character Type (LCT). The assessment notes the potential for very large turbines located in the currently undeveloped area to have effects on adjacent more sensitive landscapes, in particular Nithsdale and Annandale.

36. Cumulative effects highlighted include: “Additional wind farm development sited on the outer edges of both the Ae Foothills with Forest (18a) and the Annandale Foothills (18) would exacerbate the prominence of operational wind farms already affecting immediate skylines seen from nearby lower-lying well-settled landscapes including Nithsdale and Annandale.”
37. Whilst referring to repowering, it is relevant to consider DGWLCS statement that “there may be some opportunities for repowering of the Harestanes wind farm provided effects on views from Annandale, the A701, the Torthorwald Ridge and on the setting of Queensberry Hill were not significantly exacerbated.”
38. Reference to the DGWLCS is included throughout the report as relevant.

5.2.3 Guidance

39. The LVIA follows the methodology set out in **Appendix 5.1: LVIA Methodology** and is in accordance with industry best practice set out in Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (Landscape Institute and IEMA, 2013) (GLVIA3).
40. The following sources have also been referred to in the preparation of the methodology for the LVIA and production of visual representations:
- NatureScot (2020). Assessing impacts on Wild Land Areas – Technical Guidance;
 - SNH (2017). Siting and Designing Wind Farms in the Landscape Version 3a;
 - SNH (2017). Visual Representation of Wind Farms Version 2.2;
 - SNH (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments;
 - IEMA (2004), Guidelines for Environmental Impact Assessment;
 - Landscape Institute (2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment; and
 - Landscape Institute (2019). Visual Representation of Development Proposals: Landscape Institute Technical Guidance Note 06/19.
41. NatureScot recently published an update to their ‘General Pre-application and Scoping Advice for Onshore Wind Farms Guidance’ (September 2020) which includes advice on the approach to the assessment of turbine aviation lighting. This includes a recommendation that the lighting assessment becomes an integral part of the main assessment rather than separate appendix or section. This guidance was issued post the completion of this LVIA assessment which has included a separate lighting appendix as what has up to now been standard practice. Through consultation with NatureScot it was agreed that this approach would be acceptable for this project given the timescales.

5.2.4 Reference Documents

42. The following reference documents have informed the baseline of the Study Area.
- Dumfries & Galloway LDP2 SG, Part 1 Appendix C: Dumfries and Galloway Wind Farm Landscape Capacity Study (February 2020);
 - Dumfries & Galloway Regional Scenic Areas, LDP 2 Technical Paper (January 2018);
 - Historic Environment Scotland – Inventory of Gardens and Designed Landscapes (www.historicenvironment.scot);
 - Dumfries and Galloway Council Website – Cycling Routes and Core Paths (www.dumgal.gov.uk);
 - NatureScot, Landscape Character Assessment in Scotland (April 2019);
 - NatureScot Wild Land Map and Descriptions;
 - Ordnance Survey Mapping 1:25k and 1:50k; and
 - Sustrans, The National Cycle Network (www.sustrans.org.uk/national-cycle-network).

5.3 Consultation

43. A request for a Scoping Opinion was submitted to the Scottish Government Energy Consent Unit (ECU) in April 2020 and feedback was received in June 2020, with further consultation undertaken in July and August with NatureScot and Dumfries and Galloway Council. A summary of the full scoping opinion is provided in **Chapter 2: EIA Process and Methodology**. Key consultee responses relevant to this LVIA (received by 1st December 2020) and how and where these issues are addressed are set out in **Table 5.1**.

Consultee	Response	Action
Scottish Government Energy Consent Unit Scoping Response, June 2020	Final list of viewpoints and visualisations to be agreed following discussion between the Company, Dumfries and Galloway Council, Historic Environment Scotland and Scottish Natural Heritage	Updated viewpoint list issued to stakeholders on 22 July 2020 taking into account Scoping Opinion and design development. See below for consultation record with NatureScot and Dumfries and Galloway Council.
Dumfries and Galloway Council Scoping Response, June 2020	The scoping response states that: “ <i>the internal consultation response from the Council’s landscape architect is still outstanding. Due to ongoing pressures on landscape resources and workload, landscape advice is prioritised in the order in which work is submitted to the Council, however the full consultation response will be provided in due course.</i> ”	No response to date (as of 1 December 2020) from Landscape Officer. Follow up email sent on 31 August 2020, 23 September and 6 November 2020.
	Several errors and omissions in the cumulative wind farms map supplied with the scoping report were identified.	Data at scoping stage was from an initial search. This has been updated for the submission with a cut off date of 18 August 2020.
	An additional viewpoint from Burnswark Hill was requested.	Included within the updated viewpoint list and as part of the assessment.
NatureScot Scoping Response, 13 May 2020	The scoping opinion states: “ <i>Our key issues concerning the development are the landscape and visual impacts, including cumulative impacts with other proposed, consented and operational wind farms in the wider area. This includes potential impacts on the Talla – Hart Fell Wild Land Area, particularly arising from the aviation lighting that will be required on the turbines.</i> ”	A memo providing more detail on the visibility of the Proposed Development from the Wild Land Area including wirelines and a detailed ZTV was provided to SNH on 13 May 2020. This was in order to consider the potential to scope out effects given distance and limited visibility.
	“ <i>We provide no comment on the proposed viewpoints at this time, but would be pleased to offer advice on these once there is more certainty about the turbine layout.</i> ”	An updated viewpoint list was issued to SNH on 22 July 2020. See response below.
	“ <i>We agree that impacts on the National Scenic Areas (NSAs) listed can be scoped out of the EIA (paragraph 5.7.2).</i> ”	Confirmed, not included within assessment.
NatureScot Scoping Response, 5 June 2020 – Response to Wild Land Memo	The scoping opinion states: “ <i>This follow-up relates to our previous Scoping response and discussions held via teleconference on May 7, where we raised the potential for</i>	A wild land assessment has been provided as Appendix 5.4 and an assessment of the landscape and visual effects of the aviation lighting

Consultee	Response	Action
	<p>landscape and visual impacts, including potential impacts on the Talla – Hart Fell Wild Land Area (WLA).</p> <p>We have considered the potential visibility of the wind farm from the WLA using the information provided, and note that the ZTV indicates visibility of the turbines from recreational routes within the WLA. We therefore still think that is appropriate to provide a single dusk/dawn viewpoint from within the WLA, given there are potential impacts on this nationally important designation. We believe that to use a suitable viewpoint from within that particular WLA for both the Wild Land Assessment and for the night time lighting visualisation is a proportionate approach.”</p>	<p>provided in Appendix 5.5. This includes a viewpoint from Talla-Hart Fell (Viewpoint 15, Figure 5.37) to illustrate lighting. Appendix 13.3 Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan provides outline information on the available lighting mitigation options.</p>
NatureScot Response to Viewpoint Update, 4 August 2020.	<p>“In our previous response and in the VC meeting we highlighted that we were particularly keen to have a VP from Hart Fell, and this has now been included (VP15), so thank you for that. Given this inclusion we are content with the viewpoints included and approach taken in the documentation provided, and we look forward to the landscape and lighting assessments.”</p>	Noted.
Site Walkover with NatureScot officer and Dumfries and Galloway Council Planning Case Officer, 7 August 2020.	<p>No landscape officers were present from either Dumfries and Galloway Council or NatureScot, however the site walkover gave an opportunity to look at the location of the proposed turbines and relationship with the existing windfarm. Poor visibility unfortunately limited the opportunity to visit viewpoints together. Draft wirelines and viewpoint location information was given to consultees to take away with them.</p>	Dumfries and Galloway Council Planning Case Officer to speak to their Landscape Officer and provide a formal response to Scoping.

Table 5.1: LVIA Consultation Record

5.4 Assessment Methodology and Significance Criteria

5.4.1 Study Area

44. An initial Study Area of a 45km radius from the outermost turbines was considered, as recommended in the SNH guidance ‘Visual Representation of Windfarm Guidance’. For the purpose of this assessment, this initial 45km study area will be referred to as the 45km radius Study Area and is shown in **Figure 5.1 Blade Tip and Hub Height ZTV**.
45. Due to the topography, potential visibility of the Proposed Development would be largely within a 15 to 20km radius, becoming more dispersed out to 30km, with a more limited area of potential visibility up to and beyond 45km.

Where theoretical visibility is shown on the bare ground Zone of Theoretical Visibility (ZTV) (**Figures 5.1 and 5.2: ZTVs**) and beyond 30km, visibility would likely be further limited by a combination of distance and/or intervening built form and woodland or forestry. **Figure 5.1b** presents a ZTV with screening effects from woodland and settlement which shows the extensive coverage of woodland across the area. In addition to this, as the Proposed Development would be an extension to an operational windfarm and due to the presence of other windfarms in the wider context, significant effects would be likely to be restricted to a more localised study area.

46. Taking the above into account, the assessment focusses on the area within a 30km radius from the outermost turbines, reducing in extent where relevant to do so, for effects upon landscape character, landscape designations, visual amenity and cumulatively. This 30km radius will be referred to as the Study Area.

5.4.2 Desk Study

47. A desk study of the Site and the 45km radius Study Area was undertaken to identify the landscape and visual baseline. This included landscape planning designations, landscape character and typology, other operational and potential windfarm developments (cumulative), views from Public Rights of Ways (PRoW), National Cycle Routes, National and Long-Distance walking routes, visitor/tourist attractions, promoted viewpoints, transport network (e.g. road, rail and ferry) and residential settlements.

48. The desk study also included the use of Geographical Information System (GIS) and Resoft Windfarm software to explore the potential visibility of the Proposed Development. The resulting ZTVs (**Figures 5.1-5.2**), wirelines and photomontages (**Figures 5.11-5.31**) informed the scope of landscape and visual receptors included in the LVIA.

5.4.3 Field Survey

49. To inform the LVIA and turbine layout design process, an initial field survey was undertaken in April 2020 and a further assessment survey in August 2020. During the field surveys the landscape character of the Site and the wider landscape character of the Study Area was assessed against published landscape character assessments (SNH 2019 and DGWLCS 2020) so that the key relevant characteristics of the landscape could be identified. Visual amenity was also surveyed during these field surveys and both static (viewpoints) and sequential views were surveyed. Surveyed visual receptors were from a range of distances, aspects and elevations, and covered a range of receptor types. The receptor types included transport routes, tourist locations, promoted viewpoints, PRoW’s, residential settlements/properties and areas recognised for their amenity value (e.g. Regional Scenic Areas).

50. Viewpoint photography was taken by a professional photographer experienced in windfarm LVIA photography during July and August 2020 in periods of good weather and clear visibility.

5.4.4 Assessment Methodology

51. The detailed LVIA methodology is presented in **Appendix: 5.1 LVIA Methodology** and is in accordance with ‘Guidelines for Landscape and Visual Impact Assessment: Third Edition’ (Landscape Institute and IEMA, 2013) (‘GLVIA3’).

52. In summary, the assessment involves the following key stages:

- establishment of the baseline conditions; the landscape character and visual context of the receiving environment and the sensitivity to change of these resources;
- contributions to the iterative process of design and mitigation based on understanding the nature, form and features of the Proposed Development in relation to the key landscape and visual sensitivities;
- an evaluation of the magnitude of change likely to result from the Proposed Development, both during construction and when in operation, on visual amenity and the landscape;
- an evaluation of the cumulative magnitude of change likely to result from the Proposed Development in conjunction with other similar existing or future developments, both during construction and in operation on visual amenity and the landscape resource;
- an assessment of the significance of landscape and visual effects considering the sensitivity of resources and the magnitude of change; and
- an assessment of the cumulative significance of landscape and visual effects considering the sensitivity of resources and the magnitude of change.

53. A brief overview of the key methodology terminology is provided below.

5.4.4.1 Sensitivity

54. The sensitivity of the landscape and visual receptors is arrived at by separately considering the receptor value and the susceptibility of the receptor to the change proposed.
55. The value of a landscape is often based on its designation or recognition through national or local consensus, and its quality including cultural associations, scenic or aesthetic qualities. The absence of a landscape designation does not preclude an area being defined as important; such locations may be of local value informed by local cultural or natural heritage records, works of art or levels of use.
56. Landscape susceptibility considers the ability of the receptor to accommodate the specific proposed change and the resulting consequences on the maintenance of the baseline situation.
57. Susceptibility and value are combined such that that a combination of high susceptibility and high value is likely to result in the highest sensitivity, whereas a low susceptibility and low value is likely to result in the lowest level of sensitivity. As noted in GLVIA3 there can be complex relationships between the value attributed to a landscape and its susceptibility to change, which can be particularly important when considering change in designated landscapes.
58. Value attributed to visual amenity relates to the level of recognition of the view, from highly celebrated nationally known views to views of no particular recognition. Susceptibility to the proposed change for visual receptors relates to the location of the person and their occupation, such as residents at home being highly susceptible, to low or negligible susceptibility for people using indoor facilities where the nature of the surroundings is irrelevant to their activity for example.
59. As with landscape, susceptibility and value are combined to form a judgement about the visual sensitivity of a given receptor. Whilst a valued view may serve to increase the overall sensitivity of the visual receptor, a low value would not necessarily reduce sensitivity. Visual receptors considered highly susceptible to the proposed change are normally considered to be of high sensitivity unless there are features associated with the value of the view that lead to a reduction in sensitivity.

5.4.4.2 Magnitude of Change

60. The magnitude of landscape and visual change depends upon a combination of factors including:
- the size, scale and nature of change in relation to the context;
 - the geographical extent of the area influenced; and
 - its duration and reversibility.
61. Like with sensitivity, combining the assessment of the above aspects together requires careful consideration and professional judgement.

5.4.4.3 Level of Effect and Significance

62. Professional judgement is used to combine sensitivity and magnitude to gauge the level of effect and determine whether it is significant or not with a clear rationale for the overall judgement.
63. **Table 5.2** illustrates the inter-relationship between magnitude of change and sensitivity of receptor. This matrix is not prescriptive; the level of effect (and thus significance) will vary depending on the circumstances, the type and scale of development proposed, the baseline context and other factors as set out in the previous sections.
64. As set out in **Chapter 2: EIA Process and Methodology**, using professional judgement and with reference to the Guidelines for Environmental Impact Assessment (IEMA 2004), the assessments within this chapter generally consider effects of moderate or greater to be significant (grey boxes in Table 5-2), while those less than moderate to be non-significant.

		Magnitude			
		High	Medium	Low	Negligible
Sensitivity	High	Major	Major to Moderate	Moderate	Minor to Negligible
	Medium	Major to Moderate	Moderate	Moderate to Minor	Negligible
	Low	Moderate	Moderate to Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Table 5.2 Significance Matrix

5.4.5 Nature of Effect

65. Effects can be either beneficial or adverse and, in some cases, neutral (neither beneficial nor adverse).
66. The aim of the LVIA is to provide an objective assessment of the relationship between the proposed development and the landscape in which it would be located and seen. As part of this it is also important to consider the nature of the proposed change in the context of the key characteristics of the landscape. As large engineered structures being added to the landscape, it is unlikely that a beneficial nature of effect would be found, but neutral effects could occur where it is considered the Proposed Development does not change the defining characteristics of the landscape.
67. For the purposes of this LVIA, and to ensure this LVIA assesses the worst-case scenario, the nature of all effects are considered as adverse, unless otherwise identified.

5.4.6 Cumulative Assessment

68. SNH's guidance Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, 2012) provides the basis for the cumulative assessment methodology, in addition to GLVIA3.
69. The assessment of cumulative effects is essentially the same as for the assessment of the stand-alone landscape and visual effects, in that the level of landscape and visual effect is determined by assessing the combination of sensitivity of the landscape or visual receptor and the magnitude of change. It should be noted that the cumulative assessment is the result of the addition of the proposed development to the identified cumulative baseline scenario.
70. The cumulative landscape and visual magnitude of change is determined with reference to the criteria set out above for the main assessment.
71. The cumulative assessment considers the windfarms status and assessment scenarios as the following:

- **Operational** = operational windfarms. These are included as part of the baseline assessment on which the main LVIA assessment is undertaken;
- **Consented** = windfarms that have gained consent and not built or are consented and in-construction. These are included as part of the Future Baseline within the main LVIA assessment; or
- **Application** = windfarms at application stage, the subject of appeal, or those at scoping stage (where necessary). These are considered within the Cumulative Assessment.

5.4.7 Limitations to Assessment

5.4.7.1 Zone of Theoretical Visibility Analysis

72. The following ZTV limitations, should be taken into consideration when being considered and used in this assessment:
- The ZTV (except **Figure 5.1b**), is based on 'bare ground' and does not take into account the screening effects of built form, forestry, vegetation, distance and visibility (e.g. weather conditions). All of which can prevent or reduce visibility.

- Variation within the visibility bands shown on the ZTV: For example, an area shown as potentially having visibility of all of the turbine blade may in reality only experience views of a few turbine blade tips. As a result, the effects of the Proposed Development can vary within the same visibility band.
73. With these limitations, the ZTV's are used as a starting point in the assessment, providing an indication of where the Proposed Development would theoretically be visible. The ZTV's should not be relied upon to accurately represent or definitively show the extent of the Proposed Development's visibility.
- 5.4.7.2 Visualisations and Wirelines**
74. SNH's Guidance on Visual Representation of Windfarms states that: "Visualisations are illustrations that aim to represent the appearance of a proposed development. Visualisations of wind farms most commonly comprise photographs, wireline diagrams, photomontages, sketches and diagrams."
75. SNH's Guidance on Visual Representation of Windfarms sets out the following visualisation limitations:
- "Visualisations provide a tool for assessment that can be compared with an actual view in the field; they should never be considered as a substitute to visiting a viewpoint in the field.
 - Neither photographs nor visualisations can replicate a view as seen in reality by the human eye.
 - Visualisations are only as accurate as the data used to construct them.
 - Visualisations can only represent the view from a single location at a particular time and in particular weather conditions.
 - Static visualisations cannot convey the effect of turbine blade movement."
- 5.4.7.3 Cumulative Data**
76. Given the number of windfarms within the study area and the volatility of the information there are inherent limitations in obtaining the full and correct data. Cumulative data has been collected directly from the windfarm developers where possible, planning application information and from aerial photography for operational sites. Where information has not been readily available this is noted within the assessment.

5.5 Baseline Conditions

5.5.1 Introduction

77. The baseline assessment establishes the landscape and visual conditions of the Site and the surrounding area. As stated by GLVIA3 para 3.15:
- The landscape baseline provides "an understanding of the landscape in the area that may be affected – its constituent elements, its character and the way this varies spatially, its geographical extent, its history, its condition, the way the landscape is experienced and the value attached to it"
 - The visual baseline aims to "establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points."
78. The future baseline with relevance to LVIA is also considered in descriptive terms highlighting where significant effects are likely to arise in relation to the future baseline as far as can be reasonably predicted for consented wind farms in particular but could include other changes such as forestry works, implications of tree diseases, changes to land use and settlement patterns for example (operational wind energy developments are regarded as part of the existing baseline landscape character of the Study Area).
79. As explained in **Section 5.4.1**, a Study Area of 30km was judged appropriate to capture all potential significant effects for the LVIA and Cumulative Assessment.

5.5.2 Landscape Baseline Overview

5.5.2.1 Site Context

80. The Site is located directly to the south of the operational Harestanes Windfarm, 4km south west of Minnygap Windfarm and 6km north east of Dalswinton Windfarm. It lies north west of the A701 and is 12.4km from Moffat in the north east and 12.8km from Dumfries to the south. The Site lies within the south-eastern section of the Forest of Ae, which forms part of the foothills to the south of the Lowther Hills area of the Southern Uplands. The Site is largely covered by coniferous forestry (Sitka spruce) with numerous forestry tracks and a communications mast located on the summit of Pumro Fell (393m AOD).
81. The Site has several local high points and substantial topographical changes. The western corner of the Site is at a local unnamed high point of 366m AOD adjacent to the Clachanbirnie Burn and Glenkiln Burn which run through steeply incised valleys to the south, dropping to 200m AOD on the southern Site boundary. Pumro Fell (393m AOD) is the highest point, located in the centre of the Site. To the north, the land rises towards the operational Harestanes Windfarm, and the east has some localised high points at approximately 350m AOD. South of Pumro Fell there is a slight ridgeline identified as Kirkland Hill which falls away to the south east towards the A701 and settled landscape where the Site access is located at 110m AOD.

5.5.2.2 Landscape Character

82. The landscape assessment considers the effects of the Proposed Development on the landscape character of the Site and surrounding area.
83. The most recent Landscape Character Assessment covering the Site and Study Area is the SNH Scottish Landscape Character Types dataset, 2019 (SLCT). In their guidance, SNH state that: "Where there are topic-specific landscape capacity or sensitivity studies, they would take precedence for informing that development type, e.g. wind farms."¹ As discussed in **Section 5.2.2.4** above, Dumfries and Galloway Council's Windfarm Landscape Capacity Study², 2020 (DGWLCS) provides a landscape character and sensitivity assessment of the county's landscape specifically for windfarms. Therefore, the DGWLCS has been used as the primary landscape baseline, supplemented and cross referenced with the SLCT where necessary. It is noted that the LCTs between the two assessments do not differ significantly but as would be expected, more focus on characteristics relating to wind development is provided by the DGWLCS. The DGWLCS landscape character types are illustrated on **Figure 5.3**.
84. Within the DGWLCS, as illustrated on **Figure 5.3**, the Site largely falls within the Ae landscape unit of the Foothills with Forest (LCT18A) LCT with the southern end of the access track falling within Ae Fringe unit of the Upland Fringe LCT (16) and Annandale unit of the Middle Dale LCT. The Site is generally typical of the characteristics of the Ae unit of the LCT which include rounded and distinct summits, extensive commercial forestry and windfarm development.
85. The SLCT has identified broadly similar areas of the same type. The Site lies largely within SLCT's Foothills with Forest – Dumfries and Galloway LCT 176, with a short section of the southern access track off the A701 falling within Upland Fringe – Dumfries and Galloway LCT 172.
86. The Landscape units of LCTs within the Study Area that have potential intervisibility with the Proposed Development, as illustrated on the ZTV overlaid on the LCTs on **Figure 5.4**, are considered in the assessment with an initial analysis undertaken to focus on those that would have the most potential for significant effects. This is discussed in the assessment section. The key LCTs include:
- 7: Middle Dale
 - 16: Upland Fringe
 - 18: Foothills
 - 18a: Foothills with Forestry
 - 19: Southern Uplands

¹ <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland>

² Supplementary Guidance - Wind Energy Development: Development Management Considerations 'C' Dumfries & Galloway Wind Farm Landscape Capacity Study. Dumfries and Galloway Council, Dumfries.

87. A full baseline description of the character areas along with their sensitivity derived from value and susceptibility to the type of change proposed is presented in the assessment **Section 5.9** to avoid repetition and ease of reference.

5.5.2.3 Landscape Designations

88. Landscape designations are areas of the landscape identified as being important on an international, national or local level. These designated landscapes are designated either through statute or local planning policy. They are designated in relation to their special qualities and/or features which merit special consideration through the planning process.

89. Landscape designations are one of the criteria that are considered when assessing the value of the landscape. All landscapes have some importance, particularly to those people who live and work in them and those who use them for leisure activities. Landscape designations provide an indication of the value that both national and local government and other agencies attach to these landscapes.

90. The Site itself does not fall within any landscape designation. Designated landscapes within the Study Area are illustrated on **Figure 5.5** including:

- Regional Scenic Areas – Thornhill Uplands, Moffat Hills, Torthorwald Ridge, and Terregles Ridge;
- Wild Land Areas – Talla Hart Fell; and
- Inventory Garden and Designed Landscapes* - Drumlanrig Castle and Raehills,

91. *Gardens and Designed Landscapes are considered in the LVIA in terms of their contribution to landscape character and visual amenity where they are visitor destinations. Impacts on their cultural heritage and setting is addressed in **Chapter 10: Archaeology and Cultural Heritage**.

92. Due to the distance from the Proposed Development; minimal potential visibility as illustrated by the ZTV overlaid on the landscape designations (**Figure 5.6: Landscape Designations with ZTV**); and /or qualities which relate to aspects or views unrelated to the Site and type of development proposed, the following landscape designations have been scoped out, in agreement with NatureScot and Dumfries and Galloway Council, and have not been considered further:

- Nith Estuary NSA;
- Solway Coast RSA; and
- Langholm Hills RSA.

93. The Gardens and Designed Landscapes at Kinmount, Dalswinton Old House, Maxwelton (Glencairn Castle), Scot's Mining Company House would have none or limited intervisibility with the Proposed Development and are also not considered further.

94. Talla-Hart Fell Wild Land Area is located approximately 18 km to the north east of the Site at its closest point. An assessment of the effects on the qualities of the Wild Land as requested by NatureScot are presented in **Appendix 5.4 Wild Land Assessment**.

5.5.3 Visual Baseline Overview

95. Principal visual receptors within the Study Area comprise residents in isolated properties and local settlements and the local road network, users of long distance walking routes, core paths, mountain bike trails, local and national cycle routes and visitors to recreational/tourist destinations such as Drumlanrig Castle and the 7Stanes mountain bike trail centre (as illustrated on **Figure 5.5: Landscape Designations and Key Routes**). These visual receptors are described in more detail below.

96. The pattern of settlement, associated local road network, and core paths surrounding the Site is largely dictated by the topography, with the majority of people living in the lowlands and valleys of Nithsdale and Annandale to the east, south and west of the Site. Isolated properties lie scattered in the higher land at the edge of the Lowther Hills to the north and north west of the Site. Moffat (12.4km north east of the Site), Lockerbie (12.6km south east of the Site) and Dumfries (12.8km south of the Site) are the main towns within the Study Area. Beattock, Thornhill, Auldgirth, Locharbriggs and Lochmaben are notable larger villages in the Study Area. Between the Site and the

A74(M) in the east, there is a dense network of local roads connecting the many farmsteads and houses, and some small nucleated villages. Within this area, Lochmaben to the west of Lockerbie, Locharbriggs to the north of Dumfries, and Beattock to the west of Moffat are notable settlements. To the west, the settlement pattern is related to the River Nith valley and parallel A76, with the towns of Sanquhar 26.6km to the north west of the Site, Thornhill approximately 10km west of the Site, and Auldgirth approximately 7.5km south west. An equally dense network of local roads and properties to that in the east is found either side of the valley and rising up the higher land to the west.

97. As illustrated by the ZTVs (**Figures 5.1 and 5.2**), there are large areas of the Nith valley that would not have any visibility of the Proposed Development, which includes the stretch between Sanquhar to Auldgirth, including Thornhill. The screening ZTV in **Figure 5.1b** shows that there would be even less visibility in this area when taking into account the potential forestry screening. Visual receptors in these areas are not considered further in the assessment. There is also no visibility in the north of the Study Area which includes the villages of Wanlockhead, Leadhills, and Abington, due to the screening by the Lowther Hills, so visual receptors within these areas are also not considered further.

98. The closest groups of properties are at Ae, 2.2km to the south west of the Site Boundary at its nearest point, and Parkgate, 2.6km to the south east of the Site Boundary. The group of properties at Ae would not have any visibility of the Proposed Development as illustrated by the wireline in Figure 5.23b. This shows that Wood Hill (298m AOD), Knockespen (344m AOD) and Brownmoor Hill (347m AOD) which lie directly north east of the group of properties, would screen any views of the proposed turbines. The landform would continue to screen the Proposed Development from the wider setting of Ae, with the potential visibility of one turbine as represented by Viewpoint 5 just to the north of Ae. As there would be no significant effects on the residents at Ae, it is not included further within the assessment.

5.5.3.1 Visual Receptor Groups

99. To avoid repetition and focus the assessment, visual receptors relating to local settlements, local roads and core paths within the same geographical area and/or landscape character area and with similar potential visibility of the Proposed Development have been considered together as visual receptor groups for the assessment. This includes the following areas:

- Parkland, Kirkland and Burrance – at the edge of the foothills and upland fringe, south east of the Site within 5km;
- Auchencairn, Amisfield and North Riddingwood – south of the Site within the Upland Fringe landscape within 10km; and
- Annandale (between A701 and A74(M)) – within the Middle Dales landscape, south east of the Site within 10km.

5.5.3.2 Residential Properties

100. There are a number of isolated residential properties that lie between the A701 and the Site Boundary. None lie within 2km of the proposed turbines, but a handful lie just beyond this distance and are considered in **Appendix 5.3 Residential Visual Amenity Assessment**.

5.5.3.3 Roads

101. Key transport routes within the Study Area include the A701, A76, A709, A75 and A74(M). There are a number of other roads within the Study Area ranging from small A and B roads to unclassified lanes. The Galloway Tourist Route includes parts of the A75 through Dumfries, and the South West Coastal 300 route follows the A709 between Dumfries and Lockerbie.

5.5.3.4 Rail

102. The West Coast Main Line and Glasgow South Western Line both pass north/south through the centre of the Study Area, broadly following the A74(M) and A75 and A76 respectively. There would be none or very limited visibility with the Proposed Development as illustrated by the ZTVs (**Figures 5.1-5.2**) and both rail lines have not been considered further in this assessment.

5.5.3.5 Recreational Routes

103. Long distance paths within the Study Area include the Romans and Reivers long distance path which runs north to south through the western half of the Site. The Annandale Way is located at closest approximately 2.5km to the east of the Site, and the Southern Upland Way (SUW) which passes through the northern part of the Study Area is located at closest approximately 8km to the north east of the Site. These are illustrated on **Figure 5.5 Landscape Designations and Key Routes**.
104. The 7stanes mountain bike trails lie to the west of the Site, 365m from the Site Boundary at their closest point.
105. Regional cycle route No.10 lies between Dumfries and Beattock and passes through the western part of the Site in a broadly north/south direction, following the same route as the Romans and Reivers long distance path. There are several other national, regional and local Sustrans cycle routes within the Study Area, which are shown on **Figure 5.5 Landscape Designations and Key Routes**.
106. National Cycle Route 74 runs on the B roads parallel to the A74(M)/M74 between Glasgow and Gretna, more specifically Ecclefechan and Abington within the Study Area. Visibility of the Proposed Development within this transport corridor would be very limited and it is not considered any further in the assessment.

5.5.3.6 Core Paths

107. In addition to the long distance routes identified above, there are a network of core paths that lie within and around the Forest of Ae. These include:

- Ae Forest Large Circular, Path No 39;
- Closeburn to Moffat, Path No 521;
- South of Scotland Countryside Trail, Path no.265;
- Cauldholm to Ae Forest, Path No.260; and
- Dalswinton to Ae, Path No. 92.

5.5.3.7 Recreational destinations and visitor attractions

108. Potential effects on tourism and recreation are addressed in **Chapter 12: Socio-economics, Tourism and Recreation**. The LVIA focusses on the effects upon the visual amenity of visitors and recreational users.

Forest of Ae

109. The Forest of Ae is a destination for outdoor activities in particular the 7Stanes mountain bike trails. The Craigshiels Outdoor Centre and 7Stanes mountain bike trails are located to the west of the Site and are popular tourist and mountain bike visitor attractions. They are both located in sheltered positions at the base of forested hills which precludes any visibility of the Proposed Development and as such are not considered further in the assessment. Effects on users of activity trails within the Forest of Ae are considered.

Drumlanrig Castle

110. Drumlanrig Castle, as well as a registered garden and designed landscape, is a tourist and visitor destination. It lies approximately 16km at closest to the north west of the Proposed Development. The estate covers a large area, which is mostly wooded but there are some deliberate gaps with views along the River Nith which also include more distant features. The ZTV illustrates the Proposed Development would be visible from parts of the estate, particularly the more elevated western extents, but this does not take into account the considerable woodland coverage. A viewpoint was difficult to find within the estate with open views towards the Site. Viewpoint 13 is located just south of the formal gardens, and the photo-panorama (**Figure 5.23b**) illustrates that the foothills are just visible above the treeline. The wireline illustrates that only blades of three turbines would be potentially visible, and these are likely to be mostly screened by the forestry. Potentially more of the turbine blade length would be visible from more elevated parts of the estate but these would be within glimpsed and not designed views. It is considered that there would be no potential for significant landscape or visual effects on visitors to Drumlanrig Castle and it is not considered further within the assessment.

Raehills (Garden and Designed Landscape)

111. Raehills lies approximately 3.5km east of the Proposed Development. It is a sheltered woodland landscape set below the A701 along the Kinnel Water valley. The ZTV shows that there would be no visibility from the house or

immediate gardens due to the nature of the landform between the Site and Raehills. In addition, the extensive woodland around the estate would preclude views further. A viewpoint on the A701 adjacent to Raehills has been included in the assessment (Viewpoint 2, **Figure 5.12**) which illustrates that the northern turbines of the Proposed Development would appear from behind the perimeter foothills to which Raehills sits against. In this view, only the woodland and top of Raehills house would be visible. This view is not considered a specific or designed view with regard to Raehills setting. **Chapter 10: Archaeology and Cultural Heritage** consider the impacts on its setting further. It is considered that there would be no potential for significant landscape or visual effects on visitors or residents at Raehills and it is not considered further within the assessment, except as part of the landscape character assessment in this wider area.

5.5.3.8 Viewpoints Overview

112. The 21 representative viewpoints listed in **Table 5.3**, have been selected based on the ZTV, field survey, and Scoping Opinion from NatureScot, Historic Scotland and Dumfries and Galloway Council. They represent the various sensitive landscape and visual receptors within the Study Area. The viewpoints have also been selected to ensure that a range of viewing distance, direction and elevation are also represented.
113. Viewpoints are a tool to aid the assessment and unless a specific destination viewpoint, only the scale of potential effect is assessed. This judgement is used to inform the assessment of effects upon the identified visual and landscape receptors of which the viewpoint represents, which may include more than one viewpoint. An assessment of the scale of effect at each viewpoint is presented in **Appendix 5.2: Viewpoint Assessment**.
114. **Table 5.3** provides information on the selected viewpoints location, represented receptor, elevation, distance and direction from the Proposed Development. Viewpoint locations are illustrated on **Figure 5.1: Blade Tip and Hub Height ZTV**.

Ref.	Viewpoint name	Receptor	Landscape Character Type (LCT) / Landscape designation	Distance to nearest turbine (km)	Direction to nearest turbine
1	Ae	Local Residents	Foothills with Forest – Ae unit	3.9	SW
2	A701 nr Kirkland	Local Residents, Road Users	Middle Dale – Annandale unit	3.5	S
3	West of Parkgate	Local Residents, Road Users	Upland Fringe – Ae unit	4.3	S
4	A701 Raehills	Road Users	Foothills – Beattock unit,	4.2	NE
5	Road north of Ae	Local Residents, Road Users	Foothills with Forest – Ae unit	3.3	W
6	South of Rashly Heights	Road Users Walkers	Southern Uplands – Lowthers unit Thornhill Uplands RSA	8.6	NW
7	Queensberry	Walkers	Southern Uplands – Lowthers unit	6.9	NNW
8	Southern Upland Way near Beattock	Walkers	Foothills – Ae unit	8.7	NNE
9	B7020 Chapel Wood	Walkers (Annandale Way), Road users	Middle Dale – Annandale unit	6.2	E
10	A701 South of Ae Bridgend	Local Residents, Road Users	Upland Fringe – Ae unit	5.8	S
11	Romans and Reivers Route, Moffat	Walkers (Roman and Reivers Route/SUW)	Upland Glen – Moffat unit/Southern Uplands – Moffat Hills, Moffat Hills RSA	11.4	NNE
12	North of Dumfries	Local Residents	Lower Dale – Nithsdale unit	13.3	SSW

Ref.	Viewpoint name	Receptor	Landscape Character Type (LCT) / Landscape designation	Distance to nearest turbine (km)	Direction to nearest turbine
13	Drumlanrig Castle	Visitors	Upper Dale – Nithsdale unit, Thornhill RSA, Garden and Designed Landscape	16.1	NW
14	A701 south of Devil's Beef Tub	Walkers, Road users	Southern Uplands – Moffat Hills unit, Moffat Hills RSA	18.4	NNE
15	Hart Fell	Walkers	Southern Uplands – Moffat Hills, Moffat Hills RSA, Talla Hart Fells WLA	21.4	NNE
16	West of Templand	Local Residents	Middle Dale – Annandale unit	8.1	SE
17	South of Shieldhill	Local Residents	Upland Fringe – Torthorwald unit, Torthorwald RSA	8.1	S
18	A76, Holywood	Road users, Local Residents	Lower Dale – Nithsdale unit	12.8	SW
19	Annandale Way, Hightae	Walkers, Local Residents	Lower Dale – Annandale unit	15.4	SE
20	Burnswark Hill Roman Fort	Walkers	Upland Fringe – Annandale Fringe unit	21.4	SE
21	Bishop Forest Hill	Walkers	Upland Fringe – Terregles unit, Terregles Ridge RSA	19.9	SW

Table 5.3: LVIA viewpoints

5.5.4 Windfarm Development Baseline

5.5.4.1 Introduction

115. Cumulative effects are the additional changes to the landscape character and on visual amenity caused by the Proposed Development in conjunction with other similar developments. In accordance with GLVIA3, paragraph 7.5 and SNH guidance on Assessing Cumulative Impacts of Onshore Wind Energy Developments (2012), paragraph 33, the cumulative assessment in this LVIA focuses on any likely significant cumulative impacts which are reasonably foreseeable. .

5.5.5 Scope of Cumulative Assessment

5.5.5.1 Initial Analysis

116. An initial map (**Figure 5.7: Cumulative Sites 45km Study Area**) of cumulative wind turbine developments was produced for the 45km Study Area so that a full understanding of the pattern of windfarm development in the landscape could be gained. This map includes all operational, consented, application and scoping windfarm developments as of 18th August 2020.
117. Through study of the pattern of windfarm development, and a combination of topography and visibility of the Proposed Development it is considered that the probability of significant cumulative effects between the Proposed Development in addition to any cumulative windfarm developments beyond approximately 30km of the Proposed Development would be very unlikely. Therefore, all cumulative windfarm developments that lie substantially beyond 30km are excluded from the cumulative assessment and have not been considered further. Cumulative windfarm developments within the Study Area are shown on **Figure 5.8: Cumulative Sites 30km Study Area** and an overview described below.
118. Three cumulative scenarios for assessment are considered:

- Scenario 1: Baseline - this includes all operational windfarms as part of the LVIA baseline;
- Scenario 2: Future Baseline - this includes all consented windfarms including those in-construction; and

- Scenario 3: Future Baseline with Application windfarms – this considers all windfarms at application stage, subject of appeal or if relevant, those at scoping stage.

5.5.5.1.1 Scenario 1: Baseline with Operational windfarm developments

119. Operational windfarms are considered as part of the baseline and are assessed as such as an inherent part of the LVIA, particularly as the Proposed Development is an extension to an existing windfarm. The LVIA assessment takes into account the relationship of the Proposed Development with the operational windfarms and has regard to cumulative effects in addition to them on the landscape character and visual amenity.

120. The Proposed Development would form an extension to the operational Harestanes Windfarm, which is also directly adjacent to Minnygap Windfarm. Dalswinton Windfarm is approximately 6km to the south west. These three existing windfarms have the most potential to be seen with the Proposed Development and have been important to consider in relation to the design and layout as described in **Chapter 3: Site Selection and Design**.

121. There is a notable gap of windfarm development beyond those mentioned above, relating to the settled valley and lowland landscapes. At the edges of these settled areas, as the land rises, approximately 15-20km from the Site, there are several windfarms. The closest is Clyde and its extension to the north, and those around the Langholm Hills to the east including Minsca and Ewehill windfarms. To the south west and west, within the Ken/Stroan area, between 25 – 35km from the Site, along the hills south of New Cumnock, east of the Galloway Hills there are several operational windfarms including Whiteside Hill, Wether Hill and Blackcraig.

5.5.5.1.2 Scenario 2: Future Baseline with Consented windfarm developments

122. The consented and in-construction windfarms would form the future baseline. Little Hart Fell at 18km to the east and Lion Hill 18km to the north are the closest consented windfarms. The pattern of consented development sites broadly covers the same general locations as the operational sites. Within the Langholm Hills to the east there are three consented windfarms at Crossdykes, Hopsrigs and Loganhead. The Ken/Stroan area to the west includes a number of consented sites including Mochrum Fell and Knockman Hill. At the edge of the Southern Uplands around Clyde, there are four consented windfarms including Whitelaw Brae and Crookedstane.

5.5.5.1.3 Scenario 3: Future Baseline with Application windfarms

123. The 'application scenario' assesses all windfarm developments at the application stage, including those at appeal against the windfarm baseline and future baseline. There is a level of uncertainty in predicting potential changes as a result of application stage windfarm developments as these may or may not be built. There are currently eight application windfarms within the Study Area, all which lie beyond 25km from the Proposed Development.

124. Scoping stage windfarm developments within the Study Area have been shown on **Figure 5.7: Cumulative Sites 45km Study Area** for reference but have not been considered further due to design uncertainty at the pre-application stage and the possibility that only some or none of these pre applications would progress onto full applications. There are no scoping sites within 20km of the Proposed Development.

5.5.5.2 Preliminary Cumulative Assessment

125. A preliminary assessment was undertaken with the cumulative windfarms within the Study Area through the production of cumulative ZTVs (CZTVs) with the Proposed Development, review of cumulative wirelines and field survey. This concluded that there would be no potential for any significant cumulative effects (combined or sequential) with operational, consented or application windfarms beyond the three operational windfarms (Harestanes, Minnygap and Dalswinton) that lie within 10km of the Proposed Development. The CZTVs and preliminary assessment is provided in **Appendix 5.6: Cumulative Context**.

5.5.5.3 List of Cumulative windfarms

126. The detailed cumulative assessment therefore focuses on the effects of the Proposed Development in addition to the operational Harestanes, Minnygap and Dalswinton windfarms. Their details are presented in **Table 5.4**.

Wind energy development	No. of turbines	Blade Tip Height (m)	Approx. Distance from the Proposed Development (km)	Local Authority	Status:
Harestanes	68	125	0	Dumfries and Galloway Council	Operational
Minnygap	10	125	4		Operational
Dalswinton	15	120	6		Operational

Table 5.4: Assessment Cumulative windfarms

5.6 Potential Effects

127. The Proposed Development is described in detail in **Chapter 4: Development Description**. In summary, the main permanent components of the Proposed Development with the potential for creating landscape and visual effects include:
- Eight wind turbines, 200m to blade tip height with aviation lighting;
 - One 125m met mast (steel lattice tower);
 - Associated concrete hardstandings at each wind turbine and met mast; and
 - New tracks connecting the proposed turbines to existing forestry tracks and operational Harestanes Windfarm tracks and access route.
128. The EIA and design processes interact with each other, with EIA identification of potential environmental effects, combined with ongoing engagement with stakeholders, leading to design refinements to reduce the significance of adverse environmental effects.
129. The description of the site selection rationale and the iterative design process is described in **Chapter 3: Site Selection and Design**. This includes embedded mitigation that is an intrinsic part of the project design and a clear description of the way in which all of the potential effects have been considered in reaching an optimised 'design freeze' for the Proposed Development.
130. In accordance with IEMA Guidance (EIA Guide to Shaping Quality Development, IEMA, 2015) the landscape and visual effects assessed in this LVIA start from this point of 'design freeze', so potential effects which have been designed out will not be considered further as these would not arise from the development as proposed.
131. Mitigation measures that were identified and embedded into the design evolution of the Proposed Development, relevant to landscape and visual effects are described in **Section 5.7**. The assessment of residual effects on landscape and visual receptors, after taking into account all the inherent mitigation measures designed into the project are presented in **Sections 5.8-5.11**.

5.7 Embedded Mitigation

132. The design process for the layout of the Proposed Development is a vital part of the EIA process and it is at this early stage, where the largest contribution can be made to mitigate landscape and visual effects. The intended result is a windfarm which responds to the landscape character and visual amenity of the area it lies within. **Chapter 3: Site Selection and Design** describes the iterative design process for the Proposed Development that responds to landscape and visual constraints and opportunities as well as technical and economic requirements.

133. Mitigation measures that were identified and embedded into the design evolution of the Proposed Development, relevant to landscape and visual effects are described in **Table 5.5**.

Parameter	Mitigation measures embedded into the project design
Landscape Character	The Proposed Development would lie within the Foothills with Forest LCT which has a large scale, simple landform and uniform character, characteristics which are suited to accommodate larger scale turbines. The edge of this area with the upland fringe and Middle Dale LCTs is more sensitive and the design of the Proposed Development takes this into account by ensuring turbines are not positioned on the exterior of the foothills and are located as far as possible within the interior of the less sensitive foothills. Other sensitivities highlighted by DGWLCS included the potential for extending the corridor effect of large wind turbines from the major transport routes along the Evan Valley and into Annandale, and the potential to accentuate the prominence of the Dalswinton Windfarm by location of large turbines in the south and west of the Ae Foothills unit. The location of the Proposed Development would avoid these cumulative effects as it would not be located in the north of the unit or the south and western limits, and is an extension rather than a separate cluster.
Residential Visual Amenity	The turbines were positioned in order to reduce the prominence of the closest turbines in views from properties at the edge of the Forest of Ae to the south and east. There would be no turbines within 2km of any property. Turbines were removed from initial designs to avoid any encroachment into views from properties in Ae.
Users of the 7Stanes Centre and tracks	Turbines were removed from initial designs from the area where the 7Stanes mountain bike tracks are located to limit effects on the physical landscape and visual amenity effects on the users of this area.
Operational Harestanes Windfarm	The Proposed Development would be positioned as an extension to the operational Harestanes Windfarm, with the layout designed to complement the operational turbines as far as possible. In addition, the Proposed Development would take advantage of reusing and sharing access tracks, construction compounds, borrow pit areas, and substation, limiting the physical impacts on the landscape as far as possible.
Landmark Hills - Queensberry	The Proposed Development's location removes the potential to encroach physically on the sides of Queensberry. Consideration of the horizontal extent of the Proposed Development wrapping around the foothills and affecting views of the landmark hill was also part of the design process, limiting the western extent of turbines, taking into account other constraints.

Table 5.5: Mitigation Measures

5.8 Effects during Construction

5.8.1 Overview

134. The potential for landscape and visual effects during the construction phase would relate primarily to the activity of clearing of woodland, creation of the turbine and met mast foundations, hardstandings for cranes, new tracks and erection and occupation of construction compound buildings, vehicular activity and associated lighting.
135. The construction programme would be within an 8 month period, which would be considered a brief term (in accordance with **Appendix 5.1 LVIA Methodology**) and negligible in respect of landscape and visual effects.

5.8.2 Effects of Construction on the landscape fabric

136. The construction phase would create brief term effects on the landscape fabric as a result of the temporary construction phase features such as borrow pits. These would be located in areas that have previously been used as borrow pits or in existing clearances within the commercial forestry. The proposed construction compound would use the location of the previous Harestanes Windfarm compound which would minimise additional areas of clearance. Localised ground disturbance alongside proposed new access tracks caused by the construction of undergrounding of the proposed cabling, cut and fill to accommodate the access track and hardstandings, and any further areas subject to disturbance during construction, would be reinstated after construction is complete.
137. Track upgrades to the entrance of the Site from the A701 will require the loss of an area of woodland on the eastern side of the existing entrance and track.

5.8.3 Effects of Construction on landscape character

138. The construction of the Proposed Development would result in some brief term effects within the host Foothills with Forest LCT from the initial ground level preparation, to the erection of the wind turbines. The construction stage increased activity would have potential to disturb the general quieter qualities of the landscape character, but in the context of an existing operational forestry site where extensive felling and associated activities are undertaken frequently.
139. The character of the entrance and site access track at the A701 would change slightly with the widening and loss of some woodland which currently encloses this area. The entrance would become a more notable feature but still within the context of woodland. The existing treeline would be retained on the south side and the woodland block on the north side would still retain a considerable presence along the A701 and track.

5.8.4 Effects of Construction on visual amenity

140. The construction of the Proposed Development would be using existing access routes into the Site and much of the preliminary construction work would be at ground level which would be largely contained within the existing forestry. The potential for views beyond the immediate forest area to see the construction activities would be minimal except at the latter stages with the cranes and the erection of the turbines. Visitors to the Forest of Ae using the recreational routes would experience the most noticeable changes, but would be very localised along the routes and for a brief term.
141. The widening of the entrance off the A701 and associated loss of some woodland would it a more noticeable feature than the current entrance is, but from a very short stretch of the A701. The retained treeline along the south side and remaining woodland to the north side and along the A701 would still provide enclosure so that it is not visible unless immediately adjacent to it.

5.9 Residual Effects – Landscape Fabric

5.9.1 Introduction

142. Physical effects are direct effects on the fabric of the Site, such as the removal of vegetation and the change of land use. The assessment methodology can be found in full in **Appendix 5.1 LVIA Methodology**. Physical landscape features are assessed with reference to their contribution to the landscape and not in ecological terms. Ecological impacts are assessed in **Chapter 7: Ecology and Biodiversity**.

5.9.2 Effects on the Landscape Fabric of the Site

143. The landscape of the Site is commercial Sitka spruce woodland plantation of various ages including felled and newly planted areas. Forestry is a key characteristic of the LCT the Site lies within. There are some areas of native woodland along watercourses but the Site is generally limited in biodiversity. The site is also characterised by a network of stone tracks across the forestry area for forestry operations and connections to the operational Harestanes site.
144. The key impacts on the landscape fabric that would arise from the Proposed Development are summarised below:

- removal of 81.8ha of commercial forestry through keyholing and clear felling;
- 3.14km of new access tracks, with average running width of 5.5m and related cut and fill;
- reinforced concrete foundations for the turbines (30m diameter, with excavation graded back to a 37m diameter);
- crane hardstandings adjacent to each turbine location (approximately 94m x 34m) and auxiliary crane hardstandings of 12m x 12m, and related cut and fill to accommodate the hardstandings;
- blade laydown areas 78m x 28m;
- one anemometer mast foundation (10m x 10m deep);
- hardstanding adjacent to anemometer mast (20m x 20m); and
- control Building 23m x 14m x 7m within a 25m x 25m compound.

145. The Proposed Development would require areas of keyholing into the forestry plantations where turbines and the associated infrastructure cannot be located within clear felled areas, existing tracks or within gaps between coups. Details of the forestry approach is in **Chapter 13: Other Issues**.
146. The proposed access route would be the existing access for the operational Harestanes Windfarm and where possible existing tracks would be used to access the proposed turbine locations.
147. Disturbance of the landscape fabric would be limited to the footprint occupied by the various components of the Proposed Development, including cut and fill areas, leaving the majority of the landform unaffected and continued to be managed as commercial forestry. The photomontage for Viewpoint 7 at Queensberry (**Figure 5.17**) illustrates the proposed tracks, hardstandings and met mast where predicted to be visible, post reinstatement of construction disturbances. The photomontage also models the forestry felling operations planned at the time of completion of construction. This illustrates that the infrastructure would appear to continue in the same pattern as the operational Harestanes Windfarm within the commercial forestry.

5.10 Residual Effects - Landscape Character

5.10.1 Introduction

148. Landscape Character results from the different combinations and spatial distribution of physical, natural and cultural features. Aesthetic, perceptual and experiential aspects of the landscape are also important in providing that distinction between different places.
149. The effects of the Proposed Development on the landscape character of the Study Area have been assessed through review of the ZTV overlaid on to the LCTs (**Figures 5.4: Landscape Character with ZTV**), field survey work, and informed by the viewpoint assessment (**Appendix 5.2: Viewpoint Assessment**). The assessment of effects on landscape character has been carried out on the basis of the addition of the Proposed Development with the baseline of operational windfarms identified in **Section 5.5.5**.

5.10.2 Initial Assessment

150. Through analysis of the ZTV (**Figure 5.4: Landscape Character with ZTV**) the DGWLCS LCTs within the Study Area that would have none or very limited distant visibility with the Proposed Development have not been considered further. This includes the following LCTs (the number after the LCT name relates to the DGWLCS reference):
- Narrow Wooded River Valley (4)
 - Intimate Pastoral Valley (5)
 - Upper Dale (9)
 - Drumlin Pastures (13)
 - Southern Uplands with Forest (19a)
 - Upland Glens (10)

151. The areas along the Solway Firth at the southern edge of the Study Area are not considered further as whilst the ZTV illustrates potential visibility this would not take into account any obstructions such as forestry, settlement, and in particular the town of Dumfries which lies between the Site and much of this coastal area. In addition, the characteristics of these areas are related to the coast and do not have a strong relationship inland towards the direction of the Proposed Development. Taking this into account the following LCTS are not considered further:

- Coastal Flats (2)
- Coastal Plateau (14)
- Coastal Granite Uplands (20)

152. Further analysis through desk study and site work was undertaken of the other LCTs within the Study Area, and the following units are not considered further due to characteristics such as enclosed and extensively wooded as well as distance from the Proposed Development, and intermittent potential visibility pattern shown on the ZTV (Figure 5.4). It is considered that there would be no potential for significant effects on the character of these units. This is summarised in Table 5.6.

LCT unit	Reasons for exclusion
Middle Dale with Hills (7a) (Annandale)	An enclosed landscape that is extensively wooded and lies 15km from the Proposed Development. Visibility of the Proposed Development would not affect the key characteristics of this LCT
Upland Fringe (16) – Wardlaw Ridge, Terregles, Dunscore, and Cairn Fringe Units	These units lie beyond 15-20km from the Proposed Development, with intermittent visibility, and only above hub height visible from much of Dunscore unit to the west and Wardlaw Ridge unit to the south. The general settled and enclosed characteristics of these Upland Fringe units also limit potential for any significant effects.
Upland Fringe (16) Annandale Fringe	This unit lies 8km east of the Proposed Development, and is defined as a highly visible edge landscape, providing a backdrop to Lockerbie and surrounding settlement. The general settled and treed characteristics of this unit, combined with location in relation to the Proposed Development would limit any potential for significant effects on its key characteristics.
Foothills (18) – Nithsdale, Tynron, Keir and Dalmacallan units	These units lie to the west of the Proposed Development, approximately 20km at closest. The Proposed Development would be perceived in the panoramic views available from the more elevated areas of these units but at such a distance that it would not alter the key characteristics of these units.
Foothills (18) Annandale	This unit would lie at closest 9km to the east of the Proposed Development. It forms a backdrop to settlements such as Lockerbie and Lochmaben, and windfarms are an existing characteristic. The Proposed Development would not alter these key characteristics.
Foothills with Forestry (18a) Castle Oer and Eskdale units	These units lie between 20 and 30km from the Proposed Development. The ZTV indicates intermittent visibility, much of which is hub and blade only, and as the main characteristic of these areas is commercial forestry, openness and views out are very restricted.
Southern Uplands (19) – Ewe Hill and North Langholm units	These units lie beyond 20km from the Proposed Development and the ZTV indicates very limited visibility.
Southern Uplands (18) East Moffat and North Moffat units	These units lie at closest 12km to the north north east of the Proposed Development. The Proposed Development would not be readily perceived in the context of the operational windfarms that are an existing part of the views from these units.
Lower and Middle Dale (6 & 7) – Nithsdale units and	The Nithsdale units lie to the south and west of the Proposed Development, and the Annandale Lower Dale unit lies to the south east. There would be very limited visibility within the Nithsdale Middle Dale, and whilst the ZTV indicates potential

LCT unit	Reasons for exclusion
Lower Dale – Annandale unit	visibility across the Lower Dales of both Nithsdale and Annandale, the characteristic settlement and woodland pattern, and existing influence of windfarms would limit the potential for significant effects on its character.

Table 5.6: Excluded LCTs

153. Of the remaining LCTs within the Study Area, the following LCTs and their units are described in the detailed assessment in Section 5.9.3.

- Foothills with Forestry (18a) – Ae unit;
- Foothills (18) – Beattock unit;
- Southern Uplands (19) – Lowther unit;
- Lower Dale (7) – Lower Annandale unit;
- Upland Fringe (16) Ae Fringe and Torthorwald Fringe units;

5.10.3 Detailed Assessment of Landscape Character Effects

154. The following tables describe the baseline description of the LCTs and their units, their value and susceptibility and subsequent sensitivity to the type of development proposed. An assessment is made on the magnitude of change of the Proposed Development based on scale, extent and duration, and the level of effect identified. The assessment takes into consideration that the residual effects of the Proposed Development would be a long-term and permanent change. As this will be the same for all receptors, it is not explicitly stated within each receptor assessment.

155. As the Proposed Development would be a small extension to an existing operational site, there is limited potential for a high scale of effect on landscape character as it would not create a fundamental change to the defining characteristics. Medium scale of effects across the landscape would occur where the Proposed turbines would have potential to alter the perception of the landscape character where the contrasts of turbine size to the scale of landform and existing features is most apparent. This would include the Site and within approximately 8km to the south and east within the host LCT and closest extents of the adjacent LCT units including the Beattock Foothills, Ae Upland Fringe and Annandale Middle Dale. Low to Negligible scale of effects would occur further south and south east within these LCT units and also directly to the north of the Site within the Lowther Southern Uplands where the landscape characteristics would be less influenced by the Proposed Development and their baseline character would remain unaltered.

LCT: Foothills with Forest – Ae unit	
Distance and Direction from nearest Proposed turbine:	0km (Site Located within this LCT)
Baseline description	
<ul style="list-style-type: none"> • Expansive undulating upland plateau generally lying between 290-400m above and west of Annandale. • Large scale landscape intersected with some narrow valleys such as the Water of Ae and Evan Water. • Smaller well-defined hills occur on the southern and western edges. • Extensive commercial forestry masks the underlying landform, with some hill pastures and wetter moorland areas at the fringes. • Groups of properties at Ae and scattered properties along Evan Water. • Presence of operational Harestanes Windfarm and Dalswinton Windfarm. • M74, electricity transmission lines and West Coast Railway lie in the valley adjacent to the foothills. • Feeling of remoteness within the interior of this area but presence of commercial forestry and windfarms reduces potential sense of wildness. • Forestry restricts views within the LCT. • Lowther Hills to the north restrict views to the LCT from this direction, with the exception of Queensberry. • Perimeter hills in south and west provide backdrop to the lower lying settled landscapes but due to the plateau landform there is limited visibility further into the LCT from these areas. • High recreational value relating to the mountain bike trails and long distance walking routes. 	

- No landscape designations except for a small part of the Thornhill Uplands RSA which is at the western boundary of the LCT covering open moorland and wetland areas which provide an important contrast to the forestry.

The DGWLCS provides a detailed sensitivity assessment of Very Large Turbines (>150m) against the different attributes of the LCT. These are presented below. Overall, the DGWLCS identifies that this LCT would have a High sensitivity to very large scale turbines (>150m). This is largely in relation to the potential sensitivities of the edges of the LCT and adjacent settled dales landscapes which are considered separately in this assessment.

Scale and Openness - High-Medium: *“This typology could relate to the large scale of this landscape (although much of the more expansive interior plateau is already occupied by the Harestanes wind farm). The limited remaining extent would limit adequate set back from incised valleys and smaller hills lying on the outer edges of these foothills which would be sensitive to very large turbines.”*

Landform - Medium-Low: *“This typology could relate to the predominantly gently undulating landform of this landscape although occasional more well-defined small hills and complex topography have an increased sensitivity.”*

Land cover and landmark features - Medium: *“The simple land cover of extensive forest reduces sensitivity to wind farm development. Open moorland and fringing pastures are more sensitive.”*

Settlement and Archaeology - High-Medium: *“The less visually prominent interior plateau is already largely occupied by wind farm development and this typology could dominate the setting of Ae and other settlement and adversely affect the setting of archaeological features if sited in remaining undeveloped parts of this landscape.”*

Landscape Context - High: *“Turbines of this size, and particularly those around 200m, would have a dominant effect on surrounding more diverse and smaller scale landscapes. The Torthorwald Ridge and Nithsdale would be sensitive especially given that remaining undeveloped areas in this landscape lie closer to these landscapes. The setting of the Lowther Hills and the landmark Queensberry Hill is already adversely affected by the Harestanes wind farm and very large turbines could exacerbate these effects, dominating the scale of these hills if sited nearby. Additional wind farm development sited to the north of the Harestanes wind farm could affect the narrower northern part of Annandale and the wider setting to Moffat.”*

Perceptual Qualities - Medium-Low: *“This typology would have a minimal effect on perceptual qualities providing open moorland was avoided.”*

Views and Visibility – High: *“Views from cycle and walking routes in Ae Forest are generally restricted by forest cover. The operational Harestanes wind farm occupies much of the interior of this landscape which is remote from roads and settlement. Turbines of this size sited on remaining undeveloped land in the west and south in closer proximity to Nithsdale and Annandale would be likely to have a significant and dominant impact on views from key transport routes and settlement. This typology would be highly visible, with 200m high turbines particularly dominant, from the M74 and from settlement if sited so visible on the skyline of forested hills seen from the Evan valley in the north of this landscape.”*

Landscape Values - Medium: *“Turbines of this size located on the western parts of this landscape could affect the setting of the RSA and rare areas of open moorland. Sensitivity is reduced elsewhere in this landscape.”*

Value	Susceptibility
Medium: the LCT is largely outside of any landscape designations, with commercial forestry reducing wildness characteristics, but some areas of valued habitat, and value relating to recreational purposes.	Medium: Windfarms are an existing characteristic of this LCT. The large scale and undulating plateau landform with simple and uniform landcover are characteristics associated with increasing potential for accommodating wind development. See below for further details.

Sensitivity

It is considered that the Foothills with Forest Ae unit would have a Medium sensitivity to the Proposed Development. This differs from the DGWLCS assessment of High as this considers the specific Site area and that it would avoid most of the key sensitivities of this LCT unit identified by DGWLCS – it would not encroach closer to Queensberry, the Lowther Hills, northern parts of Annandale, setting of Moffat and would avoid affecting views from the M74, Evan Valley, and Ae. Consideration is given below to the criteria DWGLCS use in their sensitivity assessment (as above) with a level of sensitivity given in relation to the specific Proposed Development.

- Scale and Openness - Medium: The Proposed Development would be a small extension to the operational Harestanes Windfarm and would be retained within the large scale and undulating plateau like landform.
- Landform – Low: The Proposed Development would avoid the smaller and well-defined hills.
- Landcover and landmark features - Low: The Proposed Development would be situated within commercial forestry only.
- Settlement and Archaeology – Medium-Low: The Proposed Development would be behind the periphery hills of the LCT and would avoid encroaching on the setting of Ae and surrounding properties within the LCT. The sensitivity of the setting of archaeological features is addressed in **Chapter 10: Cultural Heritage and Archaeology**.
- Landscape Context – Medium: The Proposed Development would not lie to the north of the operational windfarms and would avoid the lower slopes of Queensberry, effects on northern Annandale and setting to Moffat. It would not lie closer than operational turbines to the Lowther Hills. The context to the south east and south including Nithsdale and Torthorwald Ridge would be sensitive relating to the perception of scale of the landform in contrast to the scale of the proposed turbines.
- Perceptual qualities – Medium-Low: The Proposed Development would lie within commercial forestry, avoiding the open moorland.
- Views and Visibility – Medium: The Proposed Development would have potential to affect the views from key transport routes and settlement within Nithsdale and Annandale. It would not have potential due to its location to be perceived as a dominant feature on the skyline in views seen from the M74 and Evan valley.

Assessment

Magnitude of change

The Proposed Development would lie in the gently undulating plateau within commercial forestry, inside the perimeter hills, wrapped around the eastern and southern edge of the operational Harestanes Windfarm. The Proposed Development would extend the presence of wind turbines within the LCT as an extension to the operational Harestanes Windfarm. It would proportionally only cover a small area of the LCT in comparison to the operational windfarms. The new tracks and hardstandings associated with the Proposed Development would create some slight changes in the forestry cover but would be minimised through keyholing, in a similar pattern to the operational Harestanes Windfarm.

The main effect would relate to the introduction of substantially larger turbines in contrast to the operational turbines, which would increase the potential for effects upon the perceived scale of the landscape and visual aspects of the LCT. This would be most apparent immediately within the Site and to the south and south west within the LCT where the scale of the Proposed Development would directly contrast with the smaller operational Harestanes turbines and the edges of the undulating foothills landform.

Within the north and north west of the LCT, the perceived contrast of scale of the Proposed Development against the operational turbines and landform would be almost indiscernible due to the location of the proposed turbines behind the operational turbines from this direction and the varying topographical changes across the Site so that the hubs and blades would appear at a similar elevation. Much of this area would not have visibility of the Proposed Development due to the undulating nature of the foothills.

The small number of proposed turbines within a proportionally small horizontal extent, with larger spacing, compared to the extensive and densely spaced operational turbine array (also including Minnygap in the adjacent Foothills LCT) would also reduce the effects to some degree. The position of the proposed turbines beside the operational Harestanes Windfarm retains a gap to Dalswinton.

It is considered that within the parts of the LCT to the west and south of the proposed turbines (within an approximate 5km radius), there would be a Medium scale of effect over an extensive (high) extent of this area, noting it includes areas of no influence around Ae for example. This would lead to a High-Medium magnitude of change.

Elsewhere within the LCT, the influence of the Proposed Development would be very limited due to the landform and existing windfarm characteristics to which the Proposed Development would be perceived as a small extension without altering the baseline character. The scale of effect would be Low to Negligible across a localised (low) extent of the area, resulting in a Low to Negligible magnitude of change.

Significance of effect

As this LCT has a medium sensitivity, the significance of effect within the Site and surroundings within approximately 5km to the south and west would be **Major-Moderate and significant**. This effect would be localised in nature. The significance of effect across the majority of the LCT, which lies to the north and north west of the Site would be **Minor and not significant**.

Table 5.7: Foothills with Forest - Ae LCT Assessment

LCT: Foothills - Beattock	
Distance and Direction from nearest Proposed turbine:	<1km East
Baseline description	
<ul style="list-style-type: none"> Varying topography from contained Kinnel Water valley, complex rolling lower hill slopes with knolly hills, and broader open upper grass moorland slopes. Raehills Designed Garden and Landscape with intricate pattern of policy woodlands and parkland. Minnygap Windfarm on open upper slopes. Upland pasture, some coniferous forestry, and open moorland on upper hill slopes. Sparsely settled with dispersed farms on lower and middle slopes. Foothills rich in archaeology. Perception of seclusion due to absence of access roads and settlements, and upper moorland slopes have some natural qualities. The complex landform and extensive woodland limits views of the elevated parts of the LCT. 	
Value	Susceptibility
Medium: the LCT does not lie within any landscape designation, but has valued features such as the Raehills Garden and Designed Landscape.	Medium: The susceptibility of this LCT to the Proposed Development would relate to the perception of seclusion, the setting of Raehills GDL and the scale of the complex landform, also considering the presence of operational windfarms.
Sensitivity	
Medium	
Assessment	
Magnitude of change	
The Proposed Development would extend the influence of wind turbines perceived across this LCT unit where it is not limited by the enclosure from the characteristic complex landform and woodland, which can be seen on the ZTV to limit continuous visibility beyond approximately 4km.	
The proposed turbines would be larger and more prominent than the existing operational turbines that lie within and adjacent to this LCT, increasing the potential for effects upon the perceived scale of the landscape and visual aspects of the LCT. This would be most apparent within the parts of the LCT directly east of the Site	

where the scale of the Proposed Development would contrast against the operational turbines and scale of the landform of the foothills. Further north within the LCT, the presence of the existing Minnygap turbines would be the defining characteristic to which the Proposed Development would be perceived as an extension and contrast of scale would be reduced by topographical variances and perspective.

The Proposed Development would not be perceived from within the Raehills GDL and the contained Kinnel Water valley but would potentially increase the influence of wind turbines along the skyline to the west.

It is considered that within the southern half of the Beattock Foothills LCT unit which lies directly east of the Proposed Development, within approximately 4km, there would be a Medium scale of effect over a Medium extent of this area, resulting in a Medium magnitude of change.

Elsewhere within the LCT, where visible, the influence of the Proposed Development would be reduced by the more dominant existing windfarm characteristics to which the Proposed Development would be perceived as a small extension without altering the baseline character. The scale of effect would be Low to Negligible across a localised (low) extent of the area, resulting in a Low to Negligible magnitude of change.

Significance of effect

As this LCT has a medium sensitivity, the significance of effect within the southern half of the LCT within approximately 4km to the east of the Proposed Development, would be **Moderate and significant**. The significance of effect across the northern half of the LCT would be **Minor and not significant**.

Table 5.8: Foothills – Beattock LCT Assessment

LCT: Middle Dale - Annandale	
Distance and Direction from nearest Proposed turbine::	3.5km South East
Baseline description	
<ul style="list-style-type: none"> Broad, low-lying dales contained by adjacent foothills and uplands. Expansive and relatively open gently rolling landform. Large field pattern within wide floodplains decreasing in size closer to the upland/foothill edges. Extensive bands of woodland, shelterbelts and hedgerows provide enclosure. Well settled, with numerous farms and individual houses, as well as villages and small towns including Moffat. Extensive network of minor roads, A roads and major A74(M) and rail corridor. Opportunities for views toward the Upland Fringes and Foothills from the more open wider aspects. Very northern end lies within the Moffat Hills RSA. Visual influence of Minsca, Dalswinton, Harestanes and Minnygap Windfarms. 	
Value	Susceptibility
Medium: The LCT is of local value relating to the settled and managed landscape, with some areas of value relating to its role as a setting to the adjacent more rural areas such as the Lowther Hills and Moffat Hills.	Medium-Low: The susceptibility of this LCT unit to the Proposed Development would relate to the containment by and views of the adjacent foothills where the Proposed Development would be located, and contrast in scale to the settled characteristics of this LCT. The susceptibility also considers the influence of existing operational windfarms, enclosure by vegetation, and major transport corridor within the LCT.
Sensitivity	
Medium-Low	
Assessment (including operational cumulative sites)	
Magnitude of change	
The Proposed Development would lie to the west and north west of this LCT, with the Site access at the edge of the LCT. The ZTV illustrates that it is mostly the southern parts of this LCT unit that would have visibility of	

<p>the Proposed Development. This does not take into account the characteristic extensive bands of woodland, shelterbelts and hedgerows which would also screen and contain views across much of the area. Particularly, from approximately 5km where the wooded Kinnel Water valley and notable patches of woodland would considerably lessen the visual influence for areas beyond.</p> <p>The Proposed Development would extend the influence of wind turbines closer to the southern part of this LCT than currently. It would be more prominent than the operational windfarms perceived from this LCT and would become a notable feature of views from this part of the LCT. The separation provided by the periphery foothills at the edge of the LCT moderates the direct contrast of scale of the Proposed Development with the scale of the LCT landscape.</p> <p>Within the northern parts of the LCT, the influence of the Proposed Development would be limited by the more enclosed characteristics of this part of the valley and where perceived it would be largely indistinguishable from the operational windfarms. It would have no effect on the LCT's role as a setting to the more rural upland landscapes in the north.</p> <p>It is considered that within the southern half of the Middle Dale Annandale LCT unit which lies south east of the Proposed Development, within approximately 5km, there would be a Medium scale of effect over a Medium extent of this area, resulting in a Medium magnitude of change.</p> <p>Within the northern parts of the LCT, the influence of the Proposed Development would be reduced by the more dominant existing windfarm characteristics to which the Proposed Development would be perceived as a small extension without altering the baseline character. The scale of effect would be Low to Negligible across a localised (low) extent of the area, resulting in a Low to Negligible magnitude of change.</p>
<p>Significance of effect</p> <p>As this LCT has a medium-low sensitivity, the significance of effect within the southern half of the LCT within approximately 8km to the south east of the Proposed Development, would be Moderate-Minor and not significant. The significance of effect across the northern half of the LCT would be Minor and not significant.</p>

Table 5.6: Middle Dale – Annandale LCT Assessment

LCT: Upland Fringe – Ae Fringe	
Distance and Direction from nearest Proposed turbine:	3.5km South
Baseline description	
<ul style="list-style-type: none"> Narrow band of hill slopes between the Nithsdale and higher Foothills with Forest – Ae unit. Rolling, occasionally knolly landform. Diverse cover of broadleaved woodland, planted policy features, and small enclosed pastures. Settled area, largely towards the valley edges. Rich archaeological and historic heritage. Highly visible edge landscapes, providing backdrop to adjacent dales and valley. Generally managed landscapes with little sense of remoteness or naturalness. Visual influence of Dalswinton Windfarm and to a lesser degree Harestanes Windfarm notable across this area. The settled nature and woodland contain views within the LCT, although more open elevated parts have potential for longer distance views. The northern end of the LCT lies within the Thornhill Uplands RSA. 	
Value	Susceptibility
High-Medium: part of the LCT lies within the Thornhill Uplands RSA, and valued due to the sculptural ridges at the edge of the scenic valley landscapes. Elsewhere, its value is slightly lower as a less distinctive and scenic landscape, but has	Medium: The susceptibility of this LCT to the Proposed Development would relate to its characteristics as a highly visible fringe landscape and its settled nature with small scale field pattern, but also in the context of operational windfarm visibility and containment by woodland.

value relating to its settled and wooded natures, with rich historic heritage.
Sensitivity
High-Medium
Assessment
Magnitude of change
<p>The Proposed Development would lie to the north and east of this unit of the Upland Fringe, and as the ZTV indicates, there is only potential visibility within the parts of this LCT that lie directly south. There would be no effects within the parts of the LCT that lie along the edge of Nithsdale and within the Thornhills RSA.</p> <p>The Proposed Development would slightly extend the influence of windfarms closer to the south eastern parts of this LCT than currently is perceived, and in combination with Dalswinton Windfarm would increase the perception of wind turbines as a characteristic in views from the LCT. The rolling landform and knolly hills of the Upland Fringe, as well as woodland cover would limit the full extent of the Proposed Development perceived as part of the backdrop to the LCT. It would have no effect on the more scenic edges and sculptural ridges that define the northern half of the LCT. The Proposed Development would be prominent in views but contained within the adjacent foothills so that separation is maintained between the upland fringe and the foothills.</p> <p>It is considered that within the south eastern part of the Ae Upland Fringe LCT unit, which generally lies south of the Proposed Development, within approximately 8km, there would be a Medium-Low scale of effect over a medium extent of this area, resulting in a Medium-Low magnitude of change. Elsewhere within the LCT, there would be no effect as there would be no visibility of the Proposed Development.</p>
Significance of effect
<p>It is considered that the sensitivity of the parts of the LCT that has potential to be affected by the Proposed Development would reduce to medium, as it does not include the RSA. The significance of effect within the south eastern part of the LCT south of the Proposed Development, would be Moderate-Minor and not significant. There would be no effect across the rest of the LCT.</p>

Table 5.10 Upland Fringe – Ae Fringe LCT Assessment

LCT: Upland Fringe – Torthorwald Fringe	
Distance and Direction from nearest Proposed turbine:	6km south
Baseline description	
<ul style="list-style-type: none"> Distinctive isolated ridgeline. Complex but low height (100-250m) elongated rolling ridges. Deeply folded hills and knolly craggy tops at either end of the ridge. Broader, smooth hill slopes and flattened tops and ridges in the middle of the ridges. Diverse landcover of enclosed pasture and woodlands including beech avenue planting and policy woodland features. Small clustered villages located in the sheltered valleys and foot of the hills, with dispersed farms and houses on outer hill slopes and valleys. Numerous archaeological features including hill forts, mottes and cairns forming landmarks. Prominent telecommunication mast and lattice towers. Visually prominent form within the adjacent Annandale and Nithsdale where it forms an important backdrop. Hill summits and ridge tops provide vantage points with extensive views. Settled parts of the LCT are more visually contained due to their sheltered locations. Lies within the Torthorwald Ridge RSA. 	

Value	Susceptibility
High to Medium: The LCT lies almost fully within the Torthorwald Ridge RSA and is valued due to the distinctive landform contrasting against the settled dales.	Medium: The susceptibility of this LCT unit to the Proposed Development would relate to the elevated parts of this ridgeline where extensive views of the surrounding landscape are possible, including the Foothills with Forest. The LCT's visually prominent form which provides a backdrop to Annandale and Nithsdale would also be susceptible to the Proposed Development where potential effects on perceived scale could occur.
Sensitivity	
High-Medium	
Assessment	
Magnitude of change	
The ZTV illustrates that the Proposed Development would potentially be visible from the northern and eastern edges of the LCT, with the ridgeline itself screening views from its south and western extents.	
The Proposed Development would extend the influence of wind turbines closer to this LCT than currently perceived. The proposed turbines would become a prominent feature in the characteristic extensive views from hill summits and ridge tops within the northern parts of the LCT, within the context of the existing commercial forestry and operational windfarms. Further south, the influence would be reduced by distance and intervening landform and features.	
The Proposed Development would sit behind the periphery foothills and within the commercial forestry such that separation between the Torthorwald Unit would be retained and the potential to affect the prominence or perceived scale of the Torthorwald distinctive ridgeline would be limited.	
It is considered that within the Torthorwald Ridge Upland Fringe LCT unit, there would be an overall Low scale of effect over a localised (low) extent of this area, resulting in a Low magnitude of change.	
Significance of effect	
As this LCT has a high-medium sensitivity, the significance of effect would be Moderate-Minor and not significant .	

Table 5.7: Upland Fringe – Torthorwald Fringe LCT

LCT: Southern Uplands - Lowthers	
Distance and Direction from Proposed Development:	5km north west
Baseline description	
<ul style="list-style-type: none"> Hills generally between 500 – 700m, with smooth rounded summits and some distinctive craggy and shapely peaks and deeply folded slopes, corries and incised valleys. Isolated Queensberry Hill a distinctive landmark. Forms a dramatic rugged backdrop to Nithsdale. Simple, grass moorland landcover with some heather moorland. Little woodland except within sheltered valleys. Evidence of mining, reservoirs and radar installations reduces sense of naturalness in some parts. Elsewhere, the general absence of settlement gives a strong sense of naturalness and seclusion. Western parts lie within the Thornhill Uplands RSA. 	

Value	Susceptibility
High-Medium: the LCT lies partly within the Thornhill Uplands RSA and is valued due to contrast of dramatic upland landscape against the scenic valleys below.	Medium: The susceptibility of this LCT unit to the Proposed Development would relate to the perception of scale against the distinctive Queensberry hill and edges of the Lowther Hills that form a backdrop to Nithsdale.
Sensitivity	
High-Medium	
Assessment	
Magnitude of change	
The Proposed Development would lie to the south of the southern part of the Lowther Hills, in close proximity to Queensberry Hill. The height of the uplands precludes views from further north within the Lowthers unit, so that it is only the southern edge that would be influenced by the Proposed Development.	
Within this upland unit, the potential for the Proposed Development to substantially increase the influence of wind turbines or affect the perception of scale of the landform would be limited due to the location of the Proposed Development as an extension to the operational Harestanes and Minnygap Windfarms to the south, clearly sitting within the Foothills with Forest, separate to the uplands. The varying topography across the Site and operational Harestanes site would result in the contrast of turbine scale being almost indiscernible.	
The Proposed Development would not encroach any closer to the base of Queensberry or edge of the Lowther Hills than the operational windfarms. The key characteristics of the LCT would remain unaltered.	
It is considered that within the Lowthers Southern Upland LCT unit, there would be an overall Negligible scale of effect resulting in a Negligible magnitude of change.	
Significance of effect	
As this LCT has a high-medium sensitivity, the significance of effect would be Negligible and not significant .	

Table 5.8: Southern Uplands – Lowthers LCT Assessment

5.11 Landscape Designations Assessment

156. Regional Scenic Areas (RSAs) are designated to protect areas of landscapes which are valued regionally or locally for their special scenic qualities. These are identified and described in Dumfries and Galloway Council's Regional Scenic Areas Technical Paper, January 2018, which forms part of the LDP2. There are four RSAs within the Study Area that would have potential visibility of the Proposed Development (**Figure 5.5: Landscape Designations and Key Routes with ZTV**). Based on the findings of the landscape and visual assessment, it has been identified that there would be no potential for the Proposed Development to significantly affect the qualities of the Moffat Hills RSA, the Thornhill Uplands RSA, and Terregles Ridge RSA. Whilst the Proposed Development would be potentially visible from parts of these RSAs, it would be perceived within the context of the operational Harestanes, Minnygap and Dalswinton Windfarms. Due to location of these RSAs in relation to the Site the proposed turbines would appear at a similar elevation to the existing turbines, limiting comparisons of scale, which would limit the potential to increase the influence of windfarm development on the visual attributes of these RSAs. Therefore, these RSAs are not considered further in the assessment.

157. Torthorwald Ridge RSA lies 6km at closest to the south of the Proposed Development and covers the Torthorwald Ridge unit of the Upland Fringe LCT with peripheral areas within the Middle and Lower Annandale LCT, and Hoddum Coastal Plateau LCT. It is designated due to its scenic qualities relating to the prominent landform, and as described in the Scenic Areas Technical Paper (January 2018) “an attractive and less extensively afforested example of the Upland Fringe landscape character type”.

158. The ZTV (Figure 5.6: Landscape Designations and Key Routes with ZTV) illustrates that there would be potential visibility of the Proposed Development across the northern aspects, hill tops and ridges, and north facing slopes along the eastern edge of the RSA. These potential areas of visibility match the extent of visibility within the Torthorwald Ridge LCT. The RSA description also highlights the same characteristics and qualities that are defined for the LCT, of which the susceptibility to the Proposed Development would relate to the elevated parts of the ridgeline where extensive views of the surrounding landscape are possible, including the Foothills with Forest. In addition, the visually prominent form which provides a backdrop to Annandale and Nithsdale would also be susceptible to the Proposed Development where potential effects on perceived scale could occur.

It is considered that the assessment of effects for the LCT (Table 5.11) would be the same for the RSA and is not repeated in full here. In summary, the Proposed Development would extend the influence of wind turbines across the northern parts of the RSA but would not be perceived to alter the scale or prominence of the Torthorwald Ridge landform. There would be an overall Low scale of effect over a localised (low) extent of this area, resulting in a Low magnitude of change. As it has a high-medium sensitivity, the significance of effect on the qualities of the RSA would be **Moderate-Minor and not significant**.

5.12 Visual Assessment

5.12.1 Introduction

159. The impacts of the Proposed Development on visual amenity within the Study Area are considered in respect of the main visual groups identified in the baseline section, namely:

- residents within settlements;
- users of transport routes including tourist routes;
- recreational users of long distance routes, core paths and hill walks; and
- visitors to attractions.

5.12.2 Viewpoint Assessment Summary

160. Table 5.13 provides a summary of the viewpoints assessed in Appendix 5.2 Viewpoint Assessment providing the scale of effect assessed for each viewpoint and the relevant receptor. Figures 5.11-5.31 include photo-panoramas and cumulative wirelines for each view, with photomontages produced for a selection of viewpoints.

Ref	Viewpoint name	Nearest proposed turbine (km)	Theoretically visible turbines (No's)		Receptors	Scale of Effect
			Hubs	Blades		
1	Ae	3.9	0	0	Local Residents	None
2	A701 nr Kirkland	3.5	4	1	Local Residents, Road Users	Low
3	West of Parkgate	4.3	2	3	Local Residents, Road Users	Low
4	A701 Raehills	4.2	5	3	Road Users	Medium
5	Road north of Ae	3.3	1	0	Local Residents, Road Users	Negligible

Ref	Viewpoint name	Nearest proposed turbine (km)	Theoretically visible turbines (No's)		Receptors	Scale of Effect
			Hubs	Blades		
6	South of Rashly Heights	8.6	8	0	Road Users Walkers	Low-Negligible
7	Queensberry	6.9	8	0	Walkers	Low-Negligible
8	Southern Upland Way near Beattock	8.7	7	1	Walkers	Low-Negligible
9	B7020 Chapel Wood	6.2	6	2	Walkers (Annandale Way), Road users	Medium
10	A701 South of Ae Bridgend	5.8	8	0	Local Residents, Road Users	Medium
11	Romans and Reivers Route, Moffat	11.4	4	2	Walkers (Roman and Reivers Route/SUW)	Low-Negligible
12	North of Dumfries	13.3	8	0	Local Residents	Low
13	Drumlanrig Castle	16.1	0	3	Visitors	Negligible
14	A701 south of Devil's Beef Tub	18.4	8	0	Walkers, Road users	Negligible
15	Hart Fell	21.4	8	0	Walkers	Negligible
16	West of Templand	8.1	8	0	Local Residents	Medium
17	South of Shieldhill	8.1	8	0	Local Residents	Medium
18	A76, Holywood	12.8	8	0	Road users, Local Residents	Low
19	Annandale Way, Hightae	15.4	8	0	Walkers, Local Residents	Low
20	Burnswark Hill Roman Fort	21.4	7	0	Walkers	Negligible
21	Bishop Forest Hill	19.9	8	0	Walkers	Negligible

Table 5.9: Viewpoint Assessment Summary

5.12.3 Viewpoint Analysis

161. The viewpoint assessment illustrates the varied scale of effects that would occur across the Study Area to the Proposed Development which is largely a result of the landform that the Proposed turbines sit within and context of the existing operational turbines.

- There would be no High or High-Medium scale of effects as in almost all views, the Proposed Development would appear in the context of existing windfarms within the foothills with forest which reduces its potential to be a fundamental change.
- Medium scale of effects were assessed at viewpoints approximately 6-8km to the south east of the Proposed turbines within the settled dales. In these views, the proposed turbines are prominent but clearly associated with the foothills, and do not occupy a wide proportion of the view.
- Medium scale of effects were assessed at approximately 6km to the south and 4km to the east where the Proposed turbines would be prominent, but within a narrower horizontal extent than in views from the south east, contained by the periphery foothills and forestry which also restricts full visibility.
- Low scale of effects were assessed for visual receptors within the lower dales landscapes approximately 12-15km to the south, south east and south west where the scale of the Proposed turbines would be discernible against the landform and existing turbines within the distant backdrop, contained within a small proportion of the overall view.

- Low scale of effects were assessed at the some of the closest viewpoints where the proximity of the foothills and forestry would screen the majority of the turbines.
- Low to Negligible scale of effects were assessed at viewpoints in close proximity to the north and north east of the Site where the position of the Proposed turbines would be behind the more expansive operational windfarm arrays, and would appear with blade tips and hubs at a similar elevation to the existing turbines such that they become indistinguishable.
- Negligible scale of effects were assessed for some of the more distant elevated viewpoints at approximately 20km to the south east and south west where the turbines would be visible in the context of the existing windfarms within a very small proportion of the overall view.

5.12.4 Visual Receptor Groups – settlements, local roads and core paths

162. The following section considers the effects on local residents, users of local roads and footpaths within areas grouped by distance, landscape character and potential visibility of the Proposed Development. It does not consider effects on residents within individual properties. A Residential Visual Amenity Assessment (RVAA) was undertaken for properties within approximately 2km of the Proposed Development. This is presented in **Appendix 5.3: RVAA**.
163. The main potential for significant effects on visual receptor groups lies to the south and south east of the Proposed Development where it would be seen in front of the operational wind turbines. The assessment therefore focuses on the visual receptor groups that lie within this area, within approximately 10km.
164. Analysis of the ZTV, combined with field work, has determined that the main settlements in the area of Dumfries, Moffat and Beattock would not have any visibility of the Proposed Development due to their built up nature and also screening by landform and surrounding woodland. Potential visibility beyond 15km-20km would be more intermittent and scattered, largely on the tops of the uplands where there are no large towns or settlements, and few roads located. Whilst potential visibility is shown along the Solway Firth coastline, any visibility of the Proposed Development is unlikely to create significant effects due to the intervening settlement and vegetation pattern combined with distance.

Visual Receptor Group: Parkgate, Kirkland, and Burrance	
Distance and Direction from nearest Proposed turbine:	3.5-4.5km south east
Baseline description	
This is community area which largely includes properties along the A701, in particular the cluster of properties at Parkgate and those around the Burrance area, connected by a network of minor roads and tracks. Those on the northern side of the A701 tend to be tucked into the side of the foothills, with their main outlook to the south east. To the south of the A701 roads and properties are often within large areas of woodland or shelterbelts. The Parkgate area has a slightly more open aspect but views curtailed to the north by the adjacent foothills. Effects on the users of the A701 is assessed separately in Table 5.18 .	
Relevant Representative Viewpoints:	Viewpoint 2: A701 Kirkland Viewpoint 3: West of Parkgate
Landscape Character Type/Designation:	Upland Fringe – Ae unit
Value	Susceptibility
Medium: The views experienced from visual receptors in these areas is generally of the locally valued settled dales landscape, with many properties and roads positioned on the lower slopes orientated to the south east to take in panoramic views across the Dales to the upland landscape beyond.	High: Local residents, as the primary receptor within this area, are considered to have a High susceptibility to wind development as they have potential to experience views for long periods of time.
Sensitivity	
High-Medium	

Assessment
Magnitude of change
The visualisations for Viewpoints 2 at Kirkland, and Viewpoint 3, West of Parkgate (Figures 5.12 and 5.13) show that the proximity of this area to the edge of the Foothills screens visibility of the full extent of the Proposed Development to varying degrees, in addition to screening by forestry and local woodland, so that the scale of effect is Low. At Parkgate, only one turbine would be visible in full, and blades of another, with forestry screening the other turbines. Slightly further north at Kirkland, only one turbine would be particularly noticeable, appearing from behind the outer slopes of the foothills. There is very limited visibility of the operational Harestanes Windfarm from this area due to the intervening landform. The visible proposed turbines would be noticeable due to the scale contrast against the landform but would only slightly alter the composition of the overall views available from this area and would not be visible within the panoramic views to the south east, which are the main focus of many of views from this area.
The Proposed Development would introduce a small number of large scale wind turbines that would be largely screened in views by the foothills landform which contain this area. The scale of effect is considered to be Low, and over a localised (low) extent. The subsequent magnitude of change is Low.
Significance of effect
Moderate-Minor and not significant.

Table 5.14: Visual Assessment –Parkgate, Kirkland and Burrance

Visual Receptor Group - South: Amisfield, Auchencairn, North Riddingwood	
Distance and Direction from nearest Proposed turbine:	5-8km south
Baseline description	
This area lies in the Upland Fringe to the south of the Foothills with Forest and includes the villages of Amisfield, Auchencairn, and North Riddingwood, local roads and several core paths that connect to Dumfries. It is a particularly wooded area and combined with the rolling upland fringe landform, views out to the wider landscape are not frequent. Users of core path/ Regional Cycle Route no.10 is assessed separately in Table 5.22 .	
Relevant Representative Viewpoints:	Viewpoint 10: A701 South of Ae Bridgend
Landscape Character Type/Designation:	Upland Fringe – Ae and Torthorwald units
Value	Susceptibility
Medium: The views experienced from visual receptors in these areas is generally of the locally valued settled dales landscape.	High: Local residents, as the primary receptor within this area, are considered to have a High susceptibility to wind development as they have potential to experience views for long periods of time.
Sensitivity	
High-Medium	
Assessment	
Magnitude of change	
The ZTV indicates potential visible of the proposed turbines across much of the north of this area with more intermittent visibility between the villages at Amisfield, Auchencairn and North Riddingwood due to the rolling landform. The characteristic woodland, hedgerows and some commercial forestry would limit the visibility considerably further in this area to glimpsed views from roads and paths, and the main clusters of properties.	
Viewpoint 10 (Figure 5.20) located on the A701 south of Ae Bridgend is representative of the potential visibility from more open parts of the area, where a Medium scale of effects was assessed. The orientation of this area in relation to the Site is such that Pumro Fell and Brownmoor Hill would screen a number of the turbines, particularly the northern five proposed turbines so the full extent of the Proposed Development would not be seen from this	

settled area. The proposed visible turbines would be within a relatively narrow extent of the view, that is already characterised by windfarms. The large scale of turbines would potentially affect the perception of the scale of the foothills, but the broad rounded landform that it lies against reduces this to some degree. Dalswinton Windfarm is close to this area, but unlikely to be seen in the same view as the Proposed Development from this area due to the orientation, landform and forestry.

The Proposed Development would extend the influence of wind turbines closer to the area, where it would become a prominent feature in available views but clearly associated with the foothills which contains and limits full visibility of the proposed turbines. The scale of effect on this visual receptor group is considered to be Medium over a localised (low) extent of the area, taking into account the wooded nature of this area. The magnitude of change is Medium-Low

Significance of effect

Moderate and significant.

Table 5.15: Visual Assessment – South: Auchencairn, Amisfield and North Riddingwood

Visual Receptor Group - Annandale between A701 and A74(M)	
Distance and Direction from nearest Proposed turbine:	3.5-10km south east
Baseline description	
This area includes the network of local roads, including the B7040, and residents within Nethermill, Templand, and Johnstonebridge, as well as more dispersed settlement across the Annandale area between the A701 and motorway, including the settled lower slopes of the Torthorwald Ridge. The gently rolling and treed nature of Annandale precludes constant open long distant views out to the wider landscape, with many of the dispersed properties, hamlets and small villages particularly enclosed by woodland and shelterbelt planting.	
Relevant Representative Viewpoints:	Viewpoint 9: B7040 Chapel Wood Viewpoint 16: West of Templand Viewpoint 17: Sheildhill
Landscape Character Type/Designation:	Middle Dale – Annandale Unit Upland Fringe – Torthorwald Unit
Value	Susceptibility
Medium: The views experienced from visual receptors in these areas is generally of the locally valued settled dales landscape,	High: Local residents, as the primary receptor within this area, are considered to have a High susceptibility to wind development as they have potential to experience views for long periods of time.
Sensitivity	
High-Medium	
Assessment	
Magnitude of change	
The ZTV illustrates that the majority of visual receptors within the middle and lower Annandale, that lie between 3.5km and 10km from the Site, would have potential visibility of the Proposed Development. In reality, this is much reduced and restricted by the gently rolling and treed nature of Annandale, particularly to the east and south of the Kinnel Water and Ae Water wooded courses, and more notable areas of woodland in these areas which would filter and screen views.	
Viewpoints offering clear visibility of the Site are difficult to find. However, Viewpoint 16 (Figure 5.26) west of Templand and Viewpoint 9 (Figure 5.19) on the B7040 near Chapel Wood represents these infrequent views and also demonstrate the treed character of the area. The visualisations for Viewpoint 16 (Figure 5.26) illustrate that the Proposed Development would appear as a prominent feature, clearly situated on the horizon within a relatively small proportion of the broad gently undulating foothills. The proposed turbines would be notably larger than the	

operational Harestanes turbines, although this is minimised by distance and perspective, as well as the generally lower elevation the proposed turbines sit at compared to the operational turbines.

From the area south east of the Site, the northern turbines of the Proposed Development would potentially lie in front of Queensberry with hubs and blades in the skyline above it. This would have the effect of reducing the scale of the landmark hill, although this is reduced slightly by the perspective with the presence of the intervening foothills which still indicate the hill is a distant feature. The visualisations for Viewpoint 9 (Figure 5.19), which is slightly further north than Viewpoint 16 shows that from settlement east of the Site, visibility of the southern turbines is less likely, and the visible turbines would appear separate to Queensberry in the views.

Travelling on the network of local roads across Annandale, including the B7020, it is likely that the Proposed Development would be intermittently noticeable as most of the routes are lined by trees and hedgerows.

For visual receptors in the Annandale area, up to but generally within 8km, it is considered the Proposed turbines would be prominent features on the backdrop that the foothills provide in available views to the north, increasing the influence of windfarms, but clearly associated within the large scale, broad forested foothills with existing windfarms. The scale of effect would vary from Medium across a medium extent of the closer more open areas to a Low scale of effect across localised (low) extent of the rest of the area where it would be noticeable but not a key feature of the view. The magnitude of change would be Medium (within approximately 8km) reducing to Low.

Significance of effect

Major-Moderate and significant within approximately 8km, reducing to **Moderate-Minor and not significant** beyond.

Table 5.16: Visual Assessment – Annandale

5.12.5 Transport Routes

- Those travelling by road, particularly on motorways, gain transient views and are therefore considered to have medium susceptibility to change associated with windfarm development. The value of views from road routes through the study area is considered to be high for identified tourist routes and routes providing access to specific recreational areas or facilities and to be medium for all other routes. The overall sensitivity of road users is therefore considered to be high-medium for those using identified tourist routes or routes to specific recreational resources and medium for all others.
- There are a number of A roads within the Study Area with potential visibility of the Proposed Development along their routes. A preliminary assessment was undertaken which identified that there would be no significant effects upon users of the A76, A74(M), A708, A709 and A75. This is presented in Table 5.17. The A701 as the main road closest to the Proposed Development is assessed in Table 5.18.

Road	Preliminary Assessment
A74(M)	The A74(M) lies 7km to the east at closest to the proposed turbines. ZTV illustrates potential visibility to varying extents on the A74(M) within a 20km radius of the site, from south of Clyde Windfarm to south of Lockerbie. Within this stretch, the bareground ZTV illustrates none or very limited visibility between junction 15 at Moffat to 16 at Johnstonebridge. Elsewhere there is potentially more opportunities for visibility of the Proposed Development, but it would always be oblique to the direction of travel, and combined with the general enclosure of the road by woodland planting, railway, and intervening settlement and woodland planting, as well as commercial forestry, there is very limited potential to see the Proposed Development for any considerable length of the motorway. Where seen, it would be viewed as a noticeable feature within a part of the view already characterised by wind turbines. The perimeter foothills and settled dale landscape would provide considerable separation from the motorway and the Site such that it would not appear as close or prominent as Clyde Windfarm for example so would not be perceived to increase the sequential cumulative effects along the Evan Valley where the A74(M) is located.

Road	Preliminary Assessment
A76	The A76 lies 10km to the west at closest to the proposed turbines. The ZTV illustrates that between Sanquhar and Dalswinton there is no potential visibility of the Proposed Development from the A76. This is due to the valley location of the road, and the intervening upland landscape between it and the Site. Potential visibility of the Proposed Development would be oblique to the direction of travel between Dumfries to just south of Ellisland Farm, an approximate 7km stretch. However, roadside vegetation, settlement and localised landform prevent consistent and frequent views in the direction of the Site. Viewpoint 18 (Figure 5.28) on the A76 at Holywood illustrates a potential view where a medium-low scale of effect was assessed. This shows that the Proposed Development would appear as a noticeable feature in a relatively narrow extent of the overall view available. It would lie in front of Queensberry which as a prominent landmark would potentially lead the focus to the Proposed Development than elsewhere within the wider view, although this would not be representative of all the views available along the A76 due to orientation of the view in relation to the Site. The Proposed Development would however appear separated from the foreground view by the many layers of vegetation, and the forestry on the perimeter foothills so whilst it would be immediately seen due to the scale of the turbines there would be some perception of separation. There is potential for Dalswinton Windfarm to be seen within the wider views where foreground vegetation allows.
A708	The A708 lies 13km to the north east at closest to the proposed turbines. The orientation of the A708 is north north east/south south west which as illustrated by the ZTV potentially gives travellers on this route direct visibility of the Proposed Development when travelling towards Moffat. The potential visibility extends between 10km and 30km from the Site. There are local undulations and meanders along the A708, combined with roadside vegetation (intending to screen the road from within the glen), vegetation along Moffat Water, and commercial forestry on the sides of the upland glen which prevent consistently open views down the glen towards the Site. Views from further north along the glen are more open, but the layers of the valley sides and forestry towards the south screen long distant views out to the Site. The main potential for visibility of the Proposed Development is at the southern end of the route, at the end of the glen, where views open out across the settled dales. Viewpoint 11 (Figure 5.21) lies close to the southern end of this route, and the wirelines illustrate that where visible the Proposed Development would slightly extend the existing horizontal extent of turbines and appear at a similar elevation to the operational Harestanes Windfarm. The contrast in turbine scale would not be particularly discernible, appearing as a small extension to the existing windfarms.
A709 (part of South West Coastal 300)	The A709 lies 11km to the south at closest to the proposed turbines. The ZTV illustrates potential visibility of the Proposed Development from much of the A709's length except where the landform of the Torthorwold Ridge and lower ground around Lochmaben prevents it. The Proposed Development would lie at closest 10km to the north west of the A709, oblique to the direction of travel from most of the route. Field survey has confirmed that views out to the north west are very limited by the roadside vegetation and the generally treed character of the settled dales landscape it lies within. Where views are possible, it is likely they would be incidental, and the Proposed Development would be seen as a noticeable feature on the skyline of the forested foothills.
A75 (part of the Galloway Tourist Route)	The A75 lies 16km to the south at closest to the proposed turbines. The ZTV illustrates that potential visibility of the Proposed Development is very intermittent along the A75 with most potential for views around Dumfries and west of Annan. In reality, roadside planting along the A75, particularly around Dumfries, allows only glimpsed views out to the wider landscape in which the Proposed Development is likely to be only seen obliquely. As illustrated by VP12 (Figure 5.22) just north of Dumfries, where seen in this area of the route, the Proposed Development would be a noticeable feature associated with the backdrop of the broad, gently undulating foothills. The operational Harestanes, Minnygap and Dalswinton Windfarms would be potentially seen in the same extents of the route but not particularly prominent. However, for the majority of the route,

Road	Preliminary Assessment
	this is not a typical view, and whilst it may be discernible from other parts of the route the Proposed Development would not be readily noticeable and the views would remain largely unaltered.

Table 5.17: Preliminary Assessment – Transport Routes

Transport Routes – A701	
Distance and Direction from nearest Proposed turbine:	3.5km South East
Route description	
The A701 is the main route between Dumfries and Junction 15 of the A74(M) south of Moffat. It generally lies in a north east/south west direction with some sections directly north/south. Travelling from the northern end, south to Dumfries, the first part of the route for approximately 12km is orientated north/south and very enclosed by dense broadleaved woodland along either side of the road. South of Raehills the A701 changes direction to a north east/south west orientation and it is generally more open in character but with smaller woodland blocks, and roadside hedgerows limiting extensive views.	
Relevant Representative Viewpoints:	Viewpoint 4 – A701 Raehills Viewpoint 2 – A701 Kirkland Viewpoint 10 – A701 south of Ae Bridgend
Landscape Character Type/Designation:	Middle Dale – Annandale unit Upland Fringe – Ae unit Lower Dale – Nithsdale unit
Value	Susceptibility
Medium: The views experienced from the road is primarily of the locally valued settled dales landscape.	Medium: Travellers on roads gain transient views, particularly on this busy and fast A road.
Sensitivity	
Medium	
Assessment	
Magnitude of change	
Travelling south, there would be limited opportunities to see the Proposed Development except for the occasional glimpsed view, as illustrated by Viewpoint 4 at Raehills (Figure 5.14). Travelling north from Dumfries, the orientation of the road is generally north/south and as such the stretch of road from Locharbriggs to Ae Bridgend, for approximately 5km stretch has potential for direct views of the Proposed Development. Within this stretch, between Locharbriggs and Amisfield, settlement and roadside vegetation would interrupt direct views, but north of Amisfield it becomes more open. This is illustrated by Viewpoint 10 just south of Ae Bridgend (Figure 5.20). The Proposed Development would be seen as a prominent feature within the foothills, partially screened by the perimeter foothills so that it would appear set back from the exterior. Views towards the Site from the A701 as it runs parallel to the Site between Ae Bridgend and St Anns are limited due to the orientation of travel, roadside vegetation and settlement. Viewpoint 2 (Figure 5.12) represents the view from the A701 near Kirkland which illustrates the screening by woodland and the perimeter foothills.	
Overall, the potential for visibility of the Proposed Development from the A701 is limited to a short stretch between Amisfield and Ae Bridgend (approximately 3km in length) when travelling north. These views also include some visibility of the operational Harestanes Windfarm, although it is not particularly noticeable. There is potential for Dalswinton to be seen obliquely from the southern extents of the road. No other windfarm sites are notably visible from the A701.	
The Proposed Development would introduce a medium scale of effect to the views from a localised (low) extent of the route which would result in a Medium-Low magnitude of change. Elsewhere along the route the scale of effect would reduce to negligible.	

Significance of effect

As users of the A701 would have a medium sensitivity, the significance of effect is considered **Moderate-Minor and not significant**. This would be within a localised extent of the route, with negligible effects across the remaining route.

Table 5.10: Visual Assessment – A701

5.12.6 Recreational Routes

186. Recreational Routes which have been identified within the study area and are considered in the assessment are presented in the following tables and illustrated on **Figures 5.5 and 5.6**.
187. An initial assessment of the potential effects on users of the Southern Upland Way (SUW) found that visibility of the Proposed Development would be largely along the same extents as the Roman and Reivers Route where they share the same path between Beattock and Moffat. This is assessed in **Table 5.19**. There would be no other visibility along the SUW within the Study Area. In the short section that there is potential visibility of the Proposed Development, it would always be seen within the context of the existing operational windfarms, the larger turbine scale largely indiscernible due to the topography of the Site which would cause the proposed turbines to appear at a comparable elevation to that of the operational turbines from this distance and direction. There would be potential for sequential cumulative views along this route as the SUW travels through many windfarm landscapes on its route across the country, however given the short extent of visibility along the SUW in the context of existing windfarms, it is not considered the addition of the Proposed Development would significantly increase the existing windfarm influence in this area. It is considered the overall scale of effect would be Negligible across a very limited (negligible) extent of the route. The magnitude of change and significance of effect would be Negligible.

Recreational Route – Roman & Reivers Route	
Distance and Direction from nearest Proposed turbine:	<1km West
Route description	
The Roman and Reivers long distance walking route starts in Ae, runs through the Forest of Ae to the north east where near Beattock it joins the same route at the Southern Upland Way (SUW) and runs east to the south of Moffat where it separates from the SUW and continues through the uplands to Hawick, 84km in total.	
Relevant Representative Viewpoints:	Viewpoint 1 – Ae Viewpoint 8 – Roman & Reivers Route/SUW Beattock Viewpoint 11 – Roman & Reivers Route/SUW Moffat
Landscape Character Type/Designation:	Foothills with Forest – Ae Unit Foothills – Ae unit Southern Uplands – Moffat Hills Moffat Hills RSA
Value	Susceptibility
High-Medium: Walkers on the route would experience a range of landscape types including the regionally designated Moffat Hills.	Medium-Low: wind turbines in close proximity to walkers on this route is an existing characteristic of the route.
Sensitivity	
Medium	
Assessment	
Magnitude of change	
The southern extents of the route would lie directly to the west of the proposed turbines within a few hundred metres such that where forestry does not enclose views, the turbines would appear a dominant feature of the immediate landscape. However, this is in the context of the operational Harestanes Windfarm which already lies either side of the walking route for the entirety of the route within the Forest of Ae north of the Site. The Proposed Development would slightly extend the length of the walking route that passes by turbines in close proximity, but within the same Foothills with Forest character. The scale of the turbines against the existing turbines would not be particularly noticeable when so close to the turbines and where the immediate forestry prevents expansive	

views. Further north, at the edge of the Foothills, illustrated by the wireline for Viewpoint 8 (**Figure 5.18**) near Beattock, the Proposed Development would appear more clearly and as an extension to the operational Harestanes Windfarm, largely indistinguishable from the operational turbines. This is due to the topography as the blade tip and hub height appear at a comparable elevation to that of the operational turbines from this distance and direction.

Travelling south along the route from the edge of the Study Area, the ZTV illustrates some very limited visibility from the tops of summits within Eskdalemuir, with more potential visibility as it runs through the south of the Moffat Hills towards Beattock. Viewpoint 11 (**Figure 5.21**) represents the view from this section of the route, on a local high point south of Moffat where a low to negligible scale of effect was assessed as the Proposed Development would slightly extend the horizontal extent of turbines visible and appear at a similar elevation to the operational Harestanes Windfarm such that the contrast in turbine scale is not particularly discernible, appearing as a small extension to the existing windfarms.

As the Roman & Reivers Route currently runs through the operational Harestanes Windfarm, the Proposed Development would not be a fundamental change to the character of the route. It would slightly extend the presence of turbines within one side of the route and within this area the larger scale of the proposed turbine would be noticeable. Elsewhere along the route, the Proposed Development would be seen as part of the operational windfarm and whilst noticeable it would not materially change the views from the route. It is considered the overall scale of effect is Low across a localised (low) extent of the route. The subsequent magnitude of change is Low.

Significance of effect

As users of this route are considered to have a Medium sensitivity, the significance of effect would be **Moderate-Minor and not significant**.

Table 5.19: Visual Assessment – Roman & Reivers Route

Recreational Route – Annandale Way	
Distance and Direction from nearest Proposed turbine:	4.5km East
Route description	
The Annandale Way is a 90km route that starts in the Moffat Hills in the north and follows the River Annan to the Solway Estuary at Annan. It is split into five walks which are discussed in the assessment section below.	
Relevant Representative Viewpoints:	Viewpoint 4 – A701 Raehills Viewpoint 8 – Roman & Reivers Route, Beattock Viewpoint 9 – B7040 Chapel Wood Viewpoint 14 – A701, south of Devil's Beef Tub Viewpoint 19 – Hightae
Landscape Character Type/Designation:	Middle and Lower Dales – Annandale units Southern Uplands – Moffat Hills unit Moffat Hills RSA
Value	Susceptibility
High-Medium: The Annandale Way encompasses a variety of landscapes from the dramatic Devil's Beef Tub to the more settled dales.	Medium: The susceptibility of users to the Proposed Development would relate to the infrequent but valued views out to the wider landscape which contrast with the largely enclosed nature of the Annan river valley.
Sensitivity	
High-Medium	

Assessment
Magnitude of change
<ul style="list-style-type: none"> Moffat - Devil's Beef Tub loop This northern part of the walk is a loop around The Devil's Beef Tub from Moffat, which includes Spout Craig (565m AOD) which lies at the western edge of the Talla Hart Fell Wild Land Area. The ZTV illustrates that the majority of this section of the Annandale Way would have no visibility of the Proposed Development due to the valley location except from the more elevated sections largely between Great Hill (466m AOD) and Spout Craig, and as it descends towards Ericstane, approximately 20km from the Proposed Development. From these areas the Proposed Development would appear largely behind the operational Minnygap and Harestanes Windfarms, with blade tips at a similar elevation. It would increase the density of turbines within the view, but within the existing windfarm extents. It is considered there would be a Negligible scale of effect along this section of the route. Moffat to Raehills The northern end of this part of the route is along the same section as the Roman and Reivers Route and the Southern Upland Way. Viewpoint 8 (Figure 5.18) illustrates the view from some of the more open parts of the route, where the Proposed Development would lie partially behind the operational Minnygap and Harestanes turbines, appearing with blade tips at a similar elevation, with much of the towers screened by landform. The scale difference of the turbines would not be particularly noticeable, and the Proposed Development would appear as part of the existing array. As the route travels to Raehills, it follows the Kinnel Water through the wooded valley floor where there would be no visibility of the Proposed Development. It is considered that there would be a Low to Negligible scale of effect along this section of the route. Raehills to Lochmaben or Lockerbie South of Raehills the Annandale Way runs through forestry parallel with the B7020 gradually getting closer to the River Annan, where south of Templand, it splits with routes to Lockerbie and routes to Lochmaben. Most of the route in this section is on low lying or gently rolling land, enclosed by the abundance of woodland and trees characteristic of the area. There are glimpsed views out to the wider landscape as illustrated by Viewpoint 9 (Figure 5.19) on the B7020 where the Annandale Way crosses, and also Viewpoint 16 (Figure 5.26) near Templand. In these views the Proposed Development would appear as a prominent feature on the foothills, notably larger than the operational Harestanes turbines. Views in and around Lochmaben and Lockerbie would be limited due to the settlement and woodland pattern. The scale of effect along this section of the route is considered to be Medium within localised parts of the route to negligible elsewhere, resulting in a Medium-Low magnitude of change along this section of the route. Lochmaben or Lockerbie to Hoddom Bridge The Annandale Way runs south from Lochmaben and separately from Lockerbie to meet at Hoddom Bridge, west of Ecclefechan. Views out to the wider landscape continue to be limited. The western route from Lochmaben travels through Hightae which is represented by Viewpoint 19 (Figure 5.29), approximately 15km south east of the Proposed Development, where a low scale of effect was assessed. This would not be a typically consistent view along this section of the route, so that a Low scale of effect would occur within a very limited (negligible) extent of this section of the route, resulting in a Low magnitude of change. Hoddom Bridge to Solway Firth The southern most section of the Annandale Way travels through Annan to the Solway Firth. The ZTV indicates intermittent visibility along this section, which lies at between 20km-30km from the Proposed Development, would be further limited by vegetation and settlement pattern. There would be a Negligible to no scale of effect along this section. Annandale Way – Overall The nature of the Annandale Way is that it follows the river valleys which, except for the northern end within the Moffat Hills, are generally enclosed through landform and vegetation and views out to the wider landscape are infrequent. Between Beattock and Lochmaben/Lockerbie there would be the most potential for opportunities to see the Proposed Development, albeit intermittently, where it would be a noticeable feature within the context of

the operational windfarms and within a relatively narrow proportion of the overall views available. The overall magnitude of change would vary across the route from Medium-Low between Raehills and Lochmaben to Low-Negligible elsewhere
Significance of effect
As users of this route are considered to have a High-Medium sensitivity, the significance of effect would be at most Moderate and significant for the Raehills to Lochmaben section, and Minor to Negligible and not significant elsewhere.

Table 5.20: Visual Assessment – Annandale Way

Recreational Route – Core Paths	
Distance and Direction from nearest Proposed turbine:	<1km West
Route description	
The baseline identified that there are several core paths that lie within the Forest of Ae, generally between the A76 in the west and A701/A74(M) in the north east. These follow some of the same routes of the long distance paths assessed above, and others use the forest tracks.	
<ul style="list-style-type: none"> Ae Forest Large Circular, Path No 39 Closeburn to Moffat, Path No 521 South of Scotland Countryside Trail, Path no.265 Cauldholm to Ae Forest, Path No.260 Dalswinton to Ae, Path No. 92 	
These have been assessed together as they all have similar characteristics as walks within commercial forestry with windfarms.	
Relevant Representative Viewpoints:	Viewpoint 8 – SUW Beattock Viewpoint 11 – Roman & Reivers Route, Moffat
Landscape Character Type/Designation:	Foothills with Forest – Ae unit Foothills – Ae unit
Value	Susceptibility
Medium: Walkers on these paths would experience locally valued landscape types along the route.	Medium-Low: wind turbines in close proximity to Walkers on these paths are an existing characteristic.
Sensitivity	
Medium-Low	
Assessment	
Magnitude of change	
Users of these core paths within the Forest of Ae would have varying outlooks depending on the enclosure by the forestry and landform, which as an active commercial operation is constantly changing. The core paths also tend to be largely located within local valleys such that expansive views are not a particular feature. Due to the close proximity, the operational Harestanes, Minnygap and Dalswinton turbines are a prominent feature along many of the paths and in views from the paths. The Proposed Development would be noticeably larger than the operational turbines and would increase the influence of windfarms for slightly longer sections of the routes to the south west.	
It is considered that the scale of effect would be Low. The extent of effect across the core paths would generally be limited by the landform and forestry, so overall is considered Low. The magnitude of change would be Low.	

Future forestry felling and planting may change the visibility of the Proposed Development along the core paths, but as this is a characteristic of a path within a commercial forest, it is not considered that this would change the level of effect assessed for the baseline.
Significance of effect
As users of these routes are considered to have a Medium-Low sensitivity, the significance of effect would be Moderate-Minor and not significant.

Table 5.21: Visual Assessment – Core Paths

Recreational Route – Regional Cycle Route 10 Locharbriggs to Beattock	
Distance and Direction from nearest Proposed turbine:	0km at closest
Route description	
Dumfries and Galloway Council have designated a local cycle route between Locharbriggs and Beattock. From Locharbriggs it is an 'on-road' cycle route on a minor road that runs north to Ae. From Ae to Beattock it follows the same path as the Romans and Reivers route through the woodland tracks.	
Relevant Representative Viewpoints:	Viewpoint 1 – Ae Viewpoint 10 – A701 South of Ae Bridgend
Landscape Character Type/Designation:	Foothills with Forest – Ae unit Upland Fringe – Ae unit Lower Dale – Nithsdale unit
Value	Susceptibility
Medium: Cyclists on this regional route would experience a range of locally valued landscape types along the route.	Medium-Low: Wind turbines are an existing feature along the cycle route where the landform and vegetation does not enclose views.
Sensitivity	
Medium-Low	
Assessment	
Magnitude of change	
There would be intermittent views of the Proposed Development travelling north to Ae from Locharbriggs as it would lie almost directly ahead of the route to the north north east and would be similar in extent to that shown on Viewpoint 10 (Figure 5.32). In these views, the proposed turbines would be prominent features, with their large scale contrasting against the landform and views of operational wind turbines. However, the rolling landform and vegetation pattern along this stretch of road precludes sustained open views in this direction. Within this on-road section, there is potential to see Dalswinton Windfarm from this route in views towards the north west which may also include successional views of the Proposed Development.	
Within the Forest of Ae to Beattock section, as the route runs through the operational Harestanes Windfarm, the Proposed Development would not be a fundamental change to the character of the route. It would slightly extend the presence of turbines within one side of the route and within this area the larger scale of the proposed turbine would be noticeable. Elsewhere along the route, the Proposed Development would be seen as part of the operational windfarm and whilst noticeable it would not materially change the views from the route	
The Proposed Development would increase the influence of wind turbines along the open road sections of the southern half of the route in addition to Dalswinton and operational Harestanes and Minnygap turbines. The scale of effect is considered to be Medium within a medium extent of the route, resulting in a Medium magnitude of change.	
Significance of effect	
As users of these routes are considered to have a Medium-Low sensitivity, the significance of effect would be Moderate-Minor and not significant.	

Table 5.11: Visual Assessment - Regional Cycle Route no.10

5.12.7 Visitor Attractions

204. The Forest of Ae includes many opportunities for hiking, horse riding and particularly mountain biking with the 7stanes mountain bike trails set up within the western part of the Forest. Many of the routes extend into the operational Harestanes forestry area where it is possible to cycle, walk or ride in close proximity to the turbines. Facilities including café, toilets, parking, and bike hire are provided in Ae.
205. The Proposed Development would lie to the east of the 7Stanes trails and there would be only limited intervisibility with the proposed turbines due to the forestry and landform – notably Green Hill, Knockespen Hill and Wood Hill which lie between the proposed turbines and the 7stanes trails. There would be no visibility of the Proposed Development from the activity centres and amenities at Ae as demonstrated by Viewpoint 1 (Figure 5.23). Further into the Forest of Ae to the north, on the many trails, close views of the Proposed Development are likely to be unavoidable, but in the context of the existing operational Harestanes turbines which are an existing characteristic of the routes, often forming waymarkers and features for walkers and cyclists to reference within the otherwise monotonous commercial forestry.
206. It is considered the scale of effect on users of the Forest of Ae would be Negligible as the proposed turbines would not fundamentally change the existing characteristics of this area. The subsequent magnitude of change is Negligible, and significance of effect would be **Negligible and not significant.**

5.13 Summary of Residual Effects

Receptor	Receptor Sensitivity	Operational Baseline Magnitude of Change	Significance of Effect
Landscape Character			
Foothills with Forest	Medium	High-Medium (within 5km) Low to Negligible elsewhere within the LCT	Major-Moderate Adverse Significant (within 5km) Minor Adverse and not significant (beyond 5km within the LCT)
Foothills – Beattock	Medium	Medium (within 4km) Low to Negligible elsewhere within the LCT	Moderate Adverse Significant (within 4km) Minor Adverse and Not significant (beyond 4km within the LCT)
Middle Dale – Annandale	Medium-Low	Medium (within 5km) Low to Negligible elsewhere within the LCT	Moderate-Minor Adverse and not Significant (within 5km) Minor Adverse and Not significant (beyond 5km within the LCT)
Upland Fringe – Ae Fringe	High-Medium	Medium (southern part of LCT) No effect within north and west area of LCT.	Moderate Adverse Significant (southern part of LCT) No effects within north and west section.
Upland Fringe – Torthorwald Fringe	High-Medium	Low	Moderate-Minor and Not significant
Southern Uplands – Lowthers	High-Medium	Negligible	Negligible Neutral and Not Significant
Landscape Designations			
Torthorwald Ridge RSA	High-Medium	Low	Moderate-Minor Adverse

Receptor	Receptor Sensitivity	Operational Baseline Magnitude of Change	Significance of Effect
			Not Significant
Visual Receptor Groups			
Parkgate/Kirkland/Burrance	High-Medium	Low	Moderate-Minor Adverse Not Significant
South of Site: Auchencairn, Riddingwood, Amisfield	High-Medium	Medium-Low	Moderate Adverse Significant
Annandale: Nethermill, Templand, Johnstonebridge, Torthorwald	High-Medium	Medium (within 8km) reducing to Low beyond.	Major-Moderate Adverse Significant (within approximately 8km) reducing to Moderate-Minor Adverse and Not Significant beyond.
Key Routes			
A701	Medium	Medium-Low	Moderate-Minor Adverse and Not Significant
Roman & Reivers	Medium	Low	Moderate-Minor Adverse Not Significant
Annandale Way	High-Medium	Medium-Low (Raehills to Lochmaben section) Low to Negligible elsewhere along the route.	Moderate Adverse Significant (Raehills to Lochmaben sections) Minor to Negligible elsewhere along the route.
Core Paths within Forest of Ae	Medium-Low	Low	Moderate-Minor Adverse Not Significant
Regional Cycle Route no.10	Medium-Low	Medium	Moderate-Minor Adverse Not Significant
Visitor Attractions			
Forest of Ae	Medium-Low	Negligible	Negligible Neutral Not Significant

Table 5.23: Summary of Residual Effects

207. There were no changes in addition to that assessed for the baseline to the cumulative magnitude of change for the 'Future Baseline' or 'Application' cumulative scenarios for any of the landscape and visual receptors.
208. No significant effects on landscape character or visual amenity was assessed for the Construction stage.

5.14 Summary

5.14.1 Summary of Effects

209. The LVIA has assessed the potential for significant landscape and visual effects across an initial area of 45km radius, focussing on a detailed assessment Study Area of 30km radius from the Proposed Development. **Table 5.23** provides an overview of the assessment.
210. The Proposed Development is located within the Foothills with Forest, a landscape character type which has a large scale, broad undulating plateau-like landform and uniform forestry landcover which are all attributes that are considered suitable for windfarm development, in addition to the presence of existing windfarms as a defining characteristic.

211. There would be no significant construction effects on the landscape fabric, landscape character or visual amenity due to the brief duration and that it would be contained within the active commercial forestry.
212. The physical effects on the landscape would be limited to areas of forestry removal for the turbine hardstandings and new tracks, of which the construction of would require areas of cut and fill. Use of existing infrastructure, compounds and borrow pits from the operational Harestanes Windfarm would minimise large areas of felling and new areas of hard surfacing. It is considered that effects on the physical elements of the landscape would not be significant.

5.14.2 Landscape Character Effects

213. The LVIA has assessed significant effects for landscape character types that the Site lies within and those that are immediately surrounding to the south and south east. The addition of the Proposed Development would increase the presence of wind turbines within the Ae unit of the Foothills with Forest, as a small extension with a relatively small increase in footprint compared to the operational Harestanes turbines. It would continue in a similar pattern within the forestry plantations, using existing infrastructure where possible so it would be perceived as a natural extension to the operational windfarm.
214. The scale difference of the proposed turbines over the operational turbines would provide the main potential for significant effects on landscape character where the contrast is directly apparent, and the larger turbines have a greater visual influence. This is most prevalent within the host LCT, and across the adjacent lower and settled dales landscapes to the south east, and south particularly the Ae Fringe unit of the Upland Fringe LCT, and the Beattock unit of the Foothills LCT. Whilst the proposed turbines are positioned behind the perimeter hills of the Site and appear associated with the foothills, the scale of proposed turbines means that they exert a greater visual influence over these immediately adjacent landscapes where scale comparisons are more readily perceived.
215. At further distances from the Site, particularly to the north west, north and north east, the effect on landscape character is not significant. This is due to the screening by the Southern Uplands that lie to the north of the Site, in addition to the enclosed valley landscapes and extent of commercial forestry in these areas. The undulating topography of the host LCT varies considerably so that parts of the operational windfarm are at higher elevations than the proposed turbines which limits the perceived contrast of scale and potential for significant effects particularly from landscapes to the north and north east.

5.14.3 Landscape Designations

216. There were no significant effects assessed of the Proposed Development on the qualities and characteristics of the regional scenic areas within the Study Area and on the Talla-Hart Wild Land Area (**Appendix 5.4**).

5.14.4 Visual Effects

217. The assessment of visual effects was informed by the scale of effect assessed at 21 viewpoints that were selected to represent visibility from a range of receptors and distances throughout the Study Area. This informed the assessment of significant effects on visual receptor groups within the settled areas south and south east of the site up to and within approximately 8km where the Proposed Development would become a notable feature in views towards the foothills, and where scale comparisons can be made against the landform and existing features.
218. Significant effects were assessed for short sections of the Annandale Way where it is in close proximity to the Site and the Proposed Development would be a prominent feature in views. No other significant effects were assessed on walkers on the long distance walking routes, local paths, and recreational users of the Ae Forest as the Proposed Development would be appear a small extension to the operational turbines which are an existing characteristic, and would not fundamentally change the visual amenity along these routes.

5.14.5 Residential Visual Amenity Assessment (RVAA)

219. A RVAA of properties within approximately 2km of the proposed turbines is presented in **Appendix 5.3 RVAA**. It found that there would be no potential for the Proposed Development to cause the Residential Amenity Threshold to be reached for residents at any of the properties assessed.

5.14.6 Lighting Effects

220. The necessary aviation turbine lighting has been considered within the assessment in **Appendix 5.5 LVIA of Turbine Lighting** and illustrated on three viewpoint night-time visualisations. The Proposed Development with turbine aviation lighting would be located within an unlit elevated undulating landform which rises above the settled dales and unavoidably would have significant effects on visual and landscape receptors within the immediate landscape and adjacent areas. However, it would not be within an entirely dark area and effects are moderated by the close influence of existing lighting associated with the settlement pattern and transport corridors to the east, south and south west. The containment by the Southern Uplands also limits the visual influence on the more sensitive darker rural areas further north and north east and to the west and north west. The assessment considered the worst case scenario of all turbines being lit to the required CAA guidance, but an outline of mitigation measures that could be implemented to reduce landscape and visual effects of the turbine aviation lighting is presented in **Appendix 13.1 Indicative Aviation Lighting Landscape and Visual Impact Mitigation Plan**.

5.14.7 Relationship of the Proposed Development to Cumulative Context

221. The LVIA has been based on the assessment of effects of the Proposed Development in addition to the operational windfarms within the Study Area. Significant effects were found to occur with the Proposed Development in addition to Harestanes, Minnygap and Dalswinton Windfarms, as the closest windfarms. Other operational windfarms within the Study Area lie beyond 18km from the Site and the assessment has found that there would be no significant combined or sequential cumulative effects with these windfarms.
222. Consented and Application windfarms within the Study Area generally fall within the same pattern as the operational sites at the edges of the Study Area, such that there are none closer than 18km from the Site, and no potential for significant combined or sequential cumulative effects with the addition of the Proposed Development.

5.14.8 Statement of Significance

223. The LVIA has identified that significant effects on landscape character would be contained within approximately 5km and visual effects would be contained within approximately 8km to the south and south east of the Site only.
224. The small number of proposed turbines appear positioned as a natural extension to the operational Harestanes Windfarm within the large scale, broad gently undulating foothills. They are set back behind the perimeter foothills, and while the large scale of the turbines cannot be screened entirely, they would largely appear grounded within the forested landscape, separate to the upland fringe and settled dales below. It is considered that as a viable extension to the operational Harestanes Windfarm it has limited the effects on the sensitive landscapes to the north west, north and north east, limited effects on recreational users of the Forest of Ae, and would have limited significant effects on residents and travellers on the key transport routes within the Study Area.

5.15 References

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Harestanes South Windfarm Extension Project Team

ScottishPower Renewables
9th Floor ScottishPower Headquarters
320 St Vincent Street
Glasgow
G2 5AD

HarestanesSouthWindfarm@scottishpower.com

