

# Chapter 5

## Landscape and Visual Impact Assessment (LVIA)

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## Glossary

Term	Definition
The Applicant	The Applicant is "RWE Renewables UK Developments Ltd".
Proposed Development	The proposed Daer Wind Farm.
Proposed Development Area	The project development area within the site boundary.
Daer Land Portion	Scottish Water Land Ownership, comprising of land east and south of Daer Reservoir. Wholly within the South Lanarkshire Local Authority Area.
Kinnelhead Land Portion	The Kinnelhead Land Portion is situated wholly within the Dumfries & Galloway Local Authority Area.

Term	Definition
Rivox Land Portion	This Forestry and Land Scotland (formerly Forestry Commission) owned area of commercial forestry sits to the east of the Daer Land Portion. Situated wholly within the Dumfries & Galloway Local Authority Area.

## List of Abbreviations

Abbreviation	Description
AOD	Above Ordnance Datum
LCT	Landscape Character Types
LVIA	Landscape & Visual Impact Assessment
NATS	National Air Traffic Services
RSA	Regional Scenic Area
RWE	the Applicant
SLA	Special Landscape Area
SNH	Scottish Natural Heritage (now NatureScot). *Please note that SNH and NatureScot are used interchangeably in this LVIA.
ZTV	Zone of Theoretical Visibility

## 5.1. INTRODUCTION

- 5.1.1. This Chapter of the EIAR provides a summary of the Landscape and Visual Impact Assessment (LVIA) of the proposed Daer Wind Farm (herein referred to as the Proposed Development) on the landscape resource and visual amenity within an identified study area. This assessment has been undertaken by Chartered Landscape Architects of the Landscape Institute (CMLI) in accordance with the *Guidelines for Landscape and Visual Impact Assessment, Third Edition 2013* (GLVIA3) (Landscape Institute and the Institute of Environmental Assessment) as detailed in Appendix 5.1.
- 5.1.2. The landscape and visual aspects of the proposed site have been a key consideration throughout the design process and fed into the design evolution of the Proposed Development as described in Chapter 2: Site Selection and Design Evolution. The scenario taken forward and assessed in this LVIA comprises up to 17 turbines up to 180 m to tip height. A full description of the Proposed Development is provided in Chapter 3: Project Description.
- 5.1.3. This Chapter of the EIAR should be read in conjunction with the following chapters:
- Chapter 4: Climate Change, Legislative and Policy Context;
  - Chapter 6: Ecology;
  - Chapter 9: Cultural Heritage;
  - Chapter 13: Infrastructure and Aviation; and
  - Chapter 14: Socioeconomics.
- 5.1.4. This Chapter is also supported by the following Technical Appendices, Figures and Visualisations.
- Appendix 5.1: LVIA Methodology;
  - Appendix 5.2: Landscape Impact Assessment;
  - Appendix 5.3: Wild Land Assessment;
  - Appendix 5.4: Visual Assessment;
  - Appendix 5.5: Residential Visual Amenity Assessment;
  - Volume 2B: LVIA Figures; and
  - Volume 2C: Visualisations.

## 5.2. SCOPE AND ASSESSMENT

### Study area

- 5.2.1. In accordance with the guidance provided in Visual Representation of Wind Farms Good Practice Guidance Version 2.2 (SNH, 2017), for the production of Zone of Theoretical Visibility (ZTV) figures, when defining a study area based on turbine height, an initial study area of 45 km is recommended for wind turbines exceeding 150 m in tip height. A ZTV for the 45 km study area was produced and landscape and visual receptors analysed to establish which receptors are likely to receive significant effects as a result of the Proposed Development in accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

### Consultation

- 5.2.2. An initial scoping request was submitted to the Energy Consents Unit (ECU), in December 2018. This contained detailed and focused questions pertaining to the overall methodology of the LVIA and the landscape, visual and cumulative receptors to be assessed in detail. Responses to these LVIA questions from the key landscape consultees are summarised below in Table 5.1, along with details of how these have been addressed.

Table 5.1: Summary of Consultation and LVIA Response to Scoping

Consultee	Comment	LVIA Response
<b>Scottish Ministers</b>	<i>Scottish Ministers have requested that a final list of viewpoints should be agreed with South Lanarkshire Council, Dumfries and Galloway Council and Scottish Natural Heritage in accordance with the guidance included in "Visual Representation of wind farms, Version 2.2.</i>	A final list of viewpoints was agreed with the ECU and South Lanarkshire Council on 8th of April 2020.
<b>South Lanarkshire Council</b>	<i>The proximity of the site adjacent to the Clyde Wind Farm and other existing or consented wind farm sites requires full and careful consideration of the cumulative impact of the proposals. Whilst the methodologies proposed for the Cumulative and Landscape and Visual Impact Assessments are acceptable it is particularly important that the suite of visual receptor location points for these assessments is agreed with South Lanarkshire Council as a Consulting Authority to any further application. These locations points should comprise of locations at a variety of distances from the site and include transport corridors, recreational routes and destinations, as residential receptors.</i>	A landscape and cumulative assessment has been undertaken and is detailed in Appendix 5.2 – 5.5 and summarised in this Chapter.
<b>Dumfries &amp; Galloway Council</b>	No comments provided.	
<b>*Scottish Natural Heritage</b>	<i>We are happy to comment on a draft list of viewpoints, but we do not supply lists for individual developments as that is for the developers consultant to do as they should have a more comprehensive understanding of the proposal and its visibility within the study area. We would be happy to comment on such a list once it is provided and particularly advise on the best location for the night time visualisations. In order to comment on the location of the night time visualisations we request a hub height ZTV to better identify those viewpoints where effects are likely to be significant.</i>	A final list of viewpoints was submitted to the ECU of 27 <sup>th</sup> of January 2020 and agreed with the ECU and South Lanarkshire Council on the 8 <sup>th</sup> of April 2020. Night-time visualisations have been produced for the following viewpoint locations: <ul style="list-style-type: none"> <li>• Viewpoint 11: Wintercleuch (Figure 5.27);</li> <li>• Viewpoint 12: Hods Hill (Figure 5.28);</li> <li>• Viewpoint 16: Kinnelhead (Figure 5.32); and</li> <li>• Viewpoint 17: Queensberry Hill (Figure 5.33).</li> </ul>
	<u>General Comments</u> <i>The 'Rivox' part of the proposal located within SLC appears to be wholly within the Leadhills and the Lowther Hills Special Landscape Area (SLA); particular sensitivities that relate to this location include the popularity of the Daer reservoir and the access that the Southern Upland Way provides through this area. The SLA report highlights within the Conservation and Opportunities for Change section, the need to 'Discourage large scale commercial windfarm developments that could lead to significant cumulative effects with Clyde windfarm...'</i>  <i>The part of the proposal that lies within DGC is adjacent to the Thornhill uplands Regional Scenic Area and again we would have concern in relation to the proposal affecting key characteristics of this area, an important concern will be whether the proposal would affect or impinge on the setting of Queensberry Hill and views available from its summit.</i>	The LVIA has considered the potential effects upon the Leadhills & the Lowther Hills SLA and the Thornhill Uplands RSA (see Appendix 5.2), the Southern Upland Way (see Appendix 5.4). Additionally, the summit of Queensberry Hill has been assessed in Appendix 5.4 and visualisations produced (see Figures 5.33a – 5.33g).

Consultee	Comment	LVIA Response
	<i>We would expect a full assessment of the proposal's effects upon these local landscape designations and in addition the landscape effects of lighting on these more remote /darker locations.</i>	The landscape assessment has included an assessment of landscape designations and the effects of aviation lighting on them.
	<i>Cumulative effects are likely to be of particular relevance given the proposals proximity to Clyde, Lion Hill, and Crookedstane Wind Farms to the north and Harestanes to the south.</i>	All of the developments listed have been included in the cumulative assessment.
	<i>Care will need to be taken that this proposal does not 'join up' these two clusters. We consider there is very little capacity remaining within this area to develop wind energy without impinging on the original design rationale for Clyde and increasing the intensity of wind development more widely within this area causing adverse effects on the underlying landscape character and visual amenity.</i>	During the design evolution of the Proposed Development, special attention has been applied to ensure that a separation distance is maintained between Clyde Wind Farm (operational), Lion Hill (consented) to the north and Harestanes Wind Farm (operational) to the south.

Source: Daer Wind Farm Scoping Opinion, March 2019

\*Please note Scottish Natural Heritage have recently changed name to NatureScot and will be referred to interchangeably in this Chapter.

5.2.3. Following the issuing of the Scoping Opinion by the ECU on 27 March 2019, further consultation was undertaken on the 27th of January 2020. This provided details of an update to the turbine layout, identified 17 viewpoints including 5 night-time viewpoints to represent aviation lighting and identify key developments to be included in the cumulative assessment. Table 5.2 provides the consultation response.

**Table 5.2: Summary of LVIA Consultation and Response**

Consultee	Comment	LVIA Response
South Lanarkshire Council	<i>South Lanarkshire Council doesn't have any additional comments outwith our previous scoping opinion with regard the site change and increased height and number of turbines. The only comment we would make at this time is we have had no details of the new battery storage element of the proposals and therefore reserve comment on this aspect of the amended project. We don't necessarily require details at this time but would wish to caveat that this and our previous response do not include this element.</i>	Details of battery storage are outlined in Chapter 3: Project Description.
Dumfries & Galloway Council	No comments provided.	
NatureScot (response 28 <sup>th</sup> February 2020)	<i>The proposed Daer Wind Farm would introduce 18 turbines, 180m to tip, into the South Lanarkshire &amp; Dumfries &amp; Galloway landscape. With turbines located between approx.. 10.5km to 15km from the Talla – Hart Wild Area (WLA), this is a very sensitive site for this scale of development. The applicant should be aware that should the proposal result in significant adverse effects on the qualities of the WLA which cannot be substantially overcome by siting, design or other mitigation, then we may object to the proposal.</i>	Noted, a Wild Land Assessment has been included in this LVIA (see Appendix 5.3).
	<i>We also advise that there would be likely to be significant cumulative impacts arising from the proposed scheme in combination with existing, adjacent developments.</i>	A cumulative assessment has been included in the LVIA (see Appendices 5.2 – 5.5).
	<i>The production of illustrative material to support the development proposal (e.g. visualisations and Zone of</i>	Noted, ZTVs and visualisations have been undertaken to the guidance mentioned.

Consultee	Comment	LVIA Response
	<i>Theoretical Visibility plans) should follow the guidance given in our Visual Representation of Wind Farms guidance (2017).</i>	
	<u>Study Area</u> <i>For turbines of the height proposed, we are content with the identification of a 45km study area, as shown on Figures 2 and 3.</i>	Noted.
	<u>Viewpoints</u> <i>The Talla – Hart Fell WLA is a nationally important asset valued for its wildness, to which the absence of human artefacts, including light pollution, and dark sky qualities contribute. A Wild Land Assessment should be provided to assess the effects of the wind farm, including the effects of turbine lighting, on the WLA. To do this, we advise that night time visualisation should be provided from Hart Fell within the WLA. A cumulative night time photomontage should be included which illustrates all wind farms at application stage and beyond where turbine lighting requirements are triggered.</i>	A Wild Land Assessment of the Talla-Hart Fells WLA has been undertaken (see Appendix 5.3). A site visit was undertaken but no visualisations have been captured from Hart Fell due to a combination of weather conditions during the survey window, COVID restrictions and Health and Safety. An aviation ZTV has been provided indicating the intensity of aviation lights likely to be experienced within the Wild Land Area. This is shown on Figure 5.4 and in Appendix 5.3.
	<i>Each viewpoint used in the LVIA should be micro-sited to show the worst case scenario. Baseline photography should be provided for all viewpoints and all viewpoints within 20km of the development should be illustrated with a photomontage. We would welcome clear numbering of all turbines on at least one wireline for each viewpoint.</i>	
	<u>Night-time assessment</u> <i>We note the selection of viewpoints that are proposed to be used in the assessment. In the absence of night-time ZTVs we are unable to agree with these at the moment. As such, we would highlight that our current advice regarding turbine lighting is that the assessment should include:</i>	Night-time visualisations have been produced for the following viewpoint locations:
	<ul style="list-style-type: none"> <li>- Clear information on the positions and intensity of lighting proposed for each turbine</li> <li>- Production of ZTV maps which shows the areas from which the nacelle and tower lights may be seen – e.g. nacelle lights visible, nacelle light plus one tower light, nacelle light plus two tower lights....etc</li> <li>- Annotation of the positions of turbine lighting (including intermediate tower lights) on all wirelines from every (daytime) viewpoint.</li> <li>- A table which lists how many lit turbines will be visible from each (daytime) viewpoint e.g.)</li> </ul>	<ul style="list-style-type: none"> <li>• Viewpoint 11: Wintercleuch;</li> <li>• Viewpoint 12: Hods Hill;</li> <li>• Viewpoint 16: Kinnelhead; and</li> <li>• Viewpoint 17: Queensberry Hill.</li> <li>• An aviation ZTV has been provided indicating the intensity of aviation lights likely to be experienced within the Wild Land Area. This is shown on Figure 5.4 and in Appendix 5.3.</li> <li>• Aviation lights are shown on wirelines for each of the night-time visuals noted above</li> <li>• Each of the viewpoints assessed include a table indicating the intensities of lights of each aviation light experienced at that location</li> <li>• Potential effects from aviation lighting are detailed in Appendix 5.3 -5.5 and include baseline descriptions of darkness and artificial lighting.</li> <li>• No night-time visuals have been produced from Hart Fell due to the reasons provided above.</li> </ul>

**Consultee Comment LVIA Response**

Turbine number (and height)	Viewpoints						
	VP1 Hillyside (2.6km)	VP2 Lochview (12.3km)	VP3 Glenburn (6.7km)	etc	etc.	etc	etc
T1 (150m)	Xx			Xx	Xx	Xx	Xx
T2 (175m)	Xx			X	Xx	Xx	Xx
T3(150m)	Xx		X	Xx	X	Xx	Xx
etc	Xx		X	Xx	Xx	X	X

  

Key	
Xx	Lights visible as pair on nacelle and tower
X	Light visible as single light on nacelle
	Lights currently screened by forestry

- Written assessment based on fieldwork for all relevant viewpoints (i.e. with potential visibility of lighting, and where effects may be significant). In worst case scenario this may involve all viewpoints, but judgement should be applied to ensure the assessment remains focussed on likely significant effects. The assessment should take into account the baseline darkness/artificial lighting characteristics and peoples likely use of different areas during darkness and low light (dusk/dawn) conditions. For viewpoints representing settlements edge of town locations are likely to be better than locations within towns/villages (i.e given the influence of existing street lighting, etc.).
- Night-time visualisations from a limited number of representative viewpoints. These may be selected on the basis of sensitivity or regular usage during low-light conditions and might include viewpoints not used in the day time assessment.

Cumulative sites

The status of schemes shown on Figure 4 should be confirmed with the relevant local authorities to ensure they are up to date (e.g. we would note that Leadhills has been refused). We further advise that sites at scoping should be included in visual representations where they are in close proximity to the site.

Cumulative data was provided by South Lanarkshire and Scottish Borders Councils. No response was provided by Dumfries & Galloway Council.

5.2.4. This iterative consultation process has informed the landscape, visual and cumulative baseline receptors ‘scoped in’ to the detailed assessment. The potential effects on these receptors are assessed in detail in Appendices 5.2 – 5.5 and summarised in this Chapter.

5.2.5. Those landscape, visual and cumulative receptors identified in the initial assessments and ‘scoped out’ of the detailed assessment are included in Appendices A5.2 and A5.4.

**5.3. METHODOLOGY**

5.3.1. A detailed description of the LVIA and Cumulative LVIA (CLVIA) process and methodology is included in Appendix 5.1.

5.3.2. This LVIA represents the second stage in the process of assessing likely significant landscape and visual effects as a result of the Proposed Development.

5.3.3. The first stage assessment was carried out as part of the preparation of the LVIA section of the scoping report in order to establish the landscape, visual and cumulative baselines for the LVIA. Potential Landscape and Visual receptors within the 45 km study area were identified using planning documentation and detailed analysis of the ZTV Figures 5.2a- 5.4, and site verification. These receptors were then assessed as detailed in Appendix 5.2, and Appendix 5.4.

5.3.4. The findings of these initial assessments determined the most relevant receptors with the potential to experience significant effects and comprise the landscape and visual baselines for this LVIA.

5.3.5. In addition, initial first stage assessments identified other relevant wind farm developments likely to pose significant cumulative effects when experienced together with the Proposed Development. These other wind farm developments are detailed in Table 5.7 of this chapter.

5.3.6. In addition to the GLVIA3, the initial and detailed assessment takes account of the following documents:

- GLVIA3 Statement of Clarification 1/13 10-06-13 (Landscape Institute, 2013);
- Landscape Character Assessment, Guidance for England and Scotland, (The Countryside Agency and Scottish Natural Heritage (SNH) 2002 Edition);
- Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity (The Countryside Agency and SNH, 2004);
- Landscape Sensitivity Assessment – Guidance for Scotland, Consultation draft (NatureScot, 2020);
- Siting and Designing Wind Farms in the Landscape, Guidance, Version 3a (SNH, August 2017);
- Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland. (SNH, Historic Environment Scotland, April 2018);
- Visual Representation of Wind Farms, Version 2.2, (SNH, February 2017); and
- Assessing the Cumulative Impact of Onshore Developments (SNH, 2012).
- Wild Land Area descriptions (SNH, 2017);
- Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19. Landscape Institute, 2019)
- Assessing impacts on Wild Land Areas (NatureScot, 2020);
- General pre-application and scoping advice for onshore wind farms, Guidance (NatureScot, 2020)

5.3.7. The assessment also takes cognisance of relevant national landscape planning policy detailed in earlier sections.

**Zone of Theoretical Visibility & Visualisation Production**

5.3.8. To aid the understanding of the visual impact of the Proposed Development ZTV analysis, wirelines and photomontages are generated, these are all completed to the standards requested by SNH in their guidelines on Visual Representation of Wind Farms Version 2.2 (SNH, 2017). Elevation data from Ordnance Survey (OS) at a resolution of 50 m was used within GIS software to complete Viewshed analysis. The tip height of the proposed turbines was used with an observer height of 2 m to determine the number of turbines visible within 45 km of the Proposed Development at the observer height. The tool outputs were coloured in bands to represent the number of turbines visible. This tool was run again using the turbine hub heights to determine the number of hubs visible within 45 km. Cumulative sites were assessed in the same manner to allow for an assessment of the complete visibility of all wind farm sites within the area.

5.3.9. To accompany the ZTV analysis wind farm modelling software was used to generate wirelines and photomontages. Again, the OS 50 m resolution elevation data was used, to generate the terrain model around the development within the software. The proposed turbine locations and dimensions are then used to draw a wire representation

of the turbines. Using this information, the software will then generate a horizontal view wireline of the Proposed Development from selected viewpoints. These are then exported as images at several viewcone angles, typically at 90° and 53.5° for the best representation of what a person will see. Additionally, photomontages can be generated for the same viewpoint locations. To complete this analysis photos are taken by a professional photographer at the viewpoint locations at a complete 360° view, these photos can then be imported and lined up to match the viewcone defined for the wireline. Once the photos are aligned with the view the turbines can be rendered onto the photo and again these can be exported as images.

5.3.10. For night-time visualisations, night-time photography was captured at dusk by a professional photographer to the standards set out in *Visual Representation of Wind Farms Version 2.2* (SNH, 2017). These then went through a similar process as described above with aviation lighting being rendered onto the appropriate turbines for a selected number of viewpoints.

## 5.4. PROJECT DESCRIPTION

5.4.1. The Proposed Development comprises 17 wind turbines up to a 180 m tip height. In order to produce the ZTV and visualisations, a candidate turbine of 102.5 m hub height, 155 m rotor diameter has been assumed. Ancillary development will include the utilisation where possible of existing access tracks with additional lengths of track required to the proposed turbine locations.

5.4.2. The Proposed Development would comprise the following phases:

- Construction Phase;
- Operational Phase; and
- Decommissioning Phase.

5.4.3. Based on the detailed description of the Proposed Development in Chapter 3: Project Description, the likely sources of landscape and visual effects that will occur during each phase are as follows:

**Table 5.3: Potential sources of landscape and visual effects during each development phase**

Construction	Operational	Decommissioning
Vehicular/personnel movements, including lighting on the site.	Tall vertical structures with moving parts (turbines and monitoring masts).	Dismantling and removal of wind turbines and anemometer masts, trimming of foundations to a depth of 1 m below ground surface levels, and restoration of turbine locations to match the character and appearance of the adjoining forested moorland landscape
The disturbance of areas of land and surface vegetation.	Access tracks and hardstanding areas at each turbine location at ground level.	Access tracks will either be left for use by the landowner or covered in topsoil.
The upgrading of existing site access tracks and formation of new tracks, crane hardstandings at each turbine location and the substation.	Additional Onsite substation.	Deplanting of grid infrastructure, removal of the grid connection compound, and reinstatement of the compound location to match the character and condition of the adjoining forested moorland where required.

Construction	Operational	Decommissioning
The construction and use of a works compound.	Reinstated of borrow pits.	Implementation of site restoration following an agreed Decommissioning Method Statement.
The gradual introduction of tall vertical structures (turbines and a monitoring mast) and the use of cranes	Occasional maintenance activity and vehicular/personnel movements around the site and on local roads	Removal of other above ground construction
Excavation of borrow pits;		
Reinstatement of temporary compounds, borrow pits and track sides following construction		
The turbines themselves would be erected over a short period, typically 1-2 days per turbine, and the appearance of the construction cranes in views of the site would therefore be of short duration.		
Installation of new Substation control building		

5.4.4. Post decommissioning of the Proposed Development, including the removal of all above ground structures and reinstatement works, the remaining effects would largely relate to the retained site entrance and site tracks, and the restored borrow pits. The site will be returned to open moorland.

5.4.5. Potential effects of the Construction and Decommissioning phases would include temporary effects on the landscape fabric of the Proposed Development Area and on the landscape character and visual amenity of the immediate area. The potential effects of the Construction and Decommissioning Phases have therefore been assessed for the Proposed Development area and the Landscape Character Type (LCT) and landscape designations containing the Proposed Development as follows:

- LCT 163: Middle Dale – Dumfries & Galloway.
- LCT 175: Foothills – Dumfries & Galloway;
- LCT 176: Foothills with Forest – Dumfries & Galloway;
- LCT 177: Southern Uplands – Dumfries & Galloway;
- LCT 217: Southern Uplands – Glasgow & Clyde Valley;
- Leadhills & the Lowther Hills Special Landscape Area (SLA); and
- Thornhill Uplands Regional Scenic Area (RSA).

5.4.6. The LVIA considers the residual effects of the construction and operational phases resulting from the introduction of the Proposed Development following the mitigation measures which have been embedded into the design of the proposed layout.

## 5.5. EMBEDDED MITIGATION

5.5.1. It is accepted that wind farms, by their nature and scale, generally result in some significant landscape and visual effects. The iterative design approach aimed to mitigate such significant effects through careful siting and design of developments. Whilst the element with greatest potential for significant effects will generally be the wind turbines, the associated infrastructure such as tracks, powerlines, substations and control buildings must also be carefully considered. NatureScot's current guidance *Siting and Designing Wind Farms in the Landscape* (version 3a August 2017 para 1.15) states that *'Wind farms should be sited and designed so that adverse effects on landscape and visual amenity are minimised and so that landscapes which are highly valued are given due protection. If wind farms are sited and designed well the capacity of our landscape to incorporate this type of development is maximised.'*

5.5.2. Paragraph 3.22 of NatureScot's guidance goes on to state that *'It is important to site and design a wind farm so that it relates directly to the qualities of a specific site. The main design elements are likely to include the following:*

- *Layout and number of wind turbines;*
- *Size, design, and proportion of wind turbines;*
- *Type, route and design of new and existing upgraded access tracks, including the amount of cut and fill required and the junctions with public roads;*
- *Location, design and restoration of hardstandings;*
- *Location, design and restoration of borrow pits;*
- *Location, design and restoration of temporary construction compounds;*
- *Location and size of wind monitoring masts;*
- *Positioning and mitigation of turbine lighting (if required);*
- *Visitor facilities, including paths, signs, parking and visitor centre (if proposed); and*
- *Land management changes, such as muirburn, woodland management or felling, fences, and stock grazing.'*

5.5.3. Based on NatureScot's guidance together with an analysis of the baseline context of the Proposed Development area and advice received from consultees, the embedded mitigation would include considerations of the following issues in relation to the landscape, visual and cumulative context:

### Site location and layout

5.5.4. The siting and layout of the Proposed Development was based on an iterative design process aimed at reducing environmental effects whilst achieving suitable technical and commercial objectives bearing in mind the recent and emerging changes to funding mechanisms and the requirement for wind energy to compete in a levelised cost of electricity market (as discussed further in Chapter 4: Climate Change, Legislative and Policy Context).

### Design Principles

5.5.5. The design strategy for the key elements of the Proposed Development has taken into account the following objectives:

- To maximise site efficiency and electricity production;
- To provide a turbine layout with simple form, which relates to the landform and landscape character of the site and its surroundings;
- Retain a suitable separation between operational / consented wind farms and the Proposed Development;
- To avoid areas of constraint where practical;
- To create a turbine layout which reflects the scale of the landscape in which it is located;

- To avoid an overly complex and visually confusing layout;
- To achieve a balanced composition of the turbines against the landscape and skyline from key viewpoint locations;
- To relate turbine height to topography;
- To give due consideration to turbine proportions; and
- To reflect the pattern of nearby existing and consented wind farms as far as practical.

### Proposed Turbines

5.5.6. The Proposed Development would make use of three bladed horizontal axis turbines with tubular steel towers. Care was taken to achieve a balanced ratio between tower height and blade length which also considered the nearby developments of Clyde, Harestanes and Minnygap Wind Farms.

5.5.7. With regard to the colour of the proposed turbines, *Siting and Designing Wind Farms in the Landscape* (Version 3a) SNH, 2017 states that *'Selecting the most appropriate colour for a turbine(s) is an important part of detailed windfarm design and mitigation. It has previously been assumed that wind turbines could be painted a colour that would camouflage them against their background. Experience has shown that it is not possible to 'hide' turbines'* (para 2.7).

5.5.8. Para 2.9 of this guidance goes on to state that *'As a rule for most rural areas of Scotland:*

- *A single colour of turbine is generally preferable;*
- *a light grey colour generally achieves the best balance between reducing visibility and visual impacts when seen against the sky, although this works less well when viewed against the land;*
- *light coloured turbines seen against a land backdrop may have greater prominence than light or dark turbines seen against the sky;*
- *paint reflection should be minimised. Texture is an important factor in reducing reflectivity, and matt or light absorbent finishes are preferable; and*
- *For multiple wind farm groups or wind farm extensions, cumulative colour effects will be a key consideration. A strategic to turbine colour is desirable and the colour of turbines should generally be consistent.'*

5.5.9. In cognisance of the guidance a simple pale grey colour and non-reflective render is therefore proposed for the Daer Wind Farm turbines.

5.5.10. Consideration of landscape and visual matters has also influenced the supporting infrastructure which has included locating the proposed Borrow Pits, Substation, Control Building, Energy Storage and Permanent Compound to the east of the site away from residential properties and footpaths.

### Aviation Lighting

5.5.11. Elements of the proposed development at 150m or greater in height would require lighting under Article 222 of the Air Navigation Order (ANO, 2016). This requires medium intensity 'steady' red aviation lights (emitting 2,000 candela) to be fitted at the wind turbine nacelle level. In addition, the CAA requires low intensity lights to be fitted at the intermediate level on the turbine tower (CAA, 2017). The intermediate lights will be 32 candela. It is proposed that visibility sensors are installed on relevant turbines to measure prevailing atmospheric conditions and visibility range. Should atmospheric conditions (for example an absence of low cloud cover, rain, mist, haze or fog) mean that visibility around the site is greater than 5 km from the Proposed Development, CAA policy permits lights to operate in a lower intensity mode of 200 candela (being a minimum of 10% of their capable illumination). If visibility is restricted to 5 km or less, by weather conditions, the lights would operate at their full 2,000 candela. In effect, the CAA policy allows 'dimming' of the lights depending on meteorological conditions, which has the effect of

reducing the perceived intensity of light in clear conditions. This dimming has been illustrated in the night-time visualisations, which indicate 2,000cd and 200cd intensity.

- 5.5.12. A reduced lighting scheme has been developed for the project to minimise the visual effects of aviation lighting on receptors. This has led to eight turbines being lit around the perimeter of the Proposed Development and includes turbines T1 / T2/ T6 / T7 / T1- / T14 / T15 / T17.

### Access Tracks

- 5.5.13. Approximately 19 km of new tracks would be required, including sections linking to proposed turbine locations. New tracks have been designed to avoid prominent slopes and summits to reduce the requirement for cut and fill.
- 5.5.14. During the construction phase of the Proposed Development all access tracks would be constructed/widened to a nominal width of 5 m and wider on bends and junctions to accommodate construction vehicles and abnormal load deliveries.
- 5.5.15. The proposed internal tracks are aligned so as to take advantage of the screening effect of intervening topography and/or vegetation. Consequently, the tracks are likely to be screened from most external viewpoints.

### Crane Pads

- 5.5.16. These would be surfaced to match the proposed track construction. Whilst crane pads would be retained for the duration of the Proposed Development, they are likely to be screened from the majority of external viewpoints by topography.

### Cabling, Substation, Control Building, Energy Storage and Permanent Compound

- 5.5.17. In order to avoid potential visibility of the grid connection cables these would be undergrounded within the site from each turbine to the substation and onsite grid connection. Undergrounded sections of cable would, wherever practicable, be placed beside proposed access tracks to reduce disturbance of the landscape and to ease future maintenance.
- 5.5.18. A new Substation, Control Building, Energy Storage and Permanent Compound would be constructed in the east of the Daer Land Parcel (see Figure 1.1: Site Layout) and will be used for the management of the Proposed Development. This has been situated away from residential properties and the Southern Upland Way as well as close to the main access track into the site to avoid further access tracks. These elements of the Proposed Development will be screened to some degree from the majority of external receptors by the rolling site landform and intervening topography.

### Construction Compound

- 5.5.19. During the construction phase of the Proposed Development, a temporary construction compound and laydown site will be required, also to be in the east of the Daer Land Parcel. Upon completion of construction works, the compound would be removed and the ground reinstated. In order to ensure that the compound and laydown area can be returned to a condition consistent with the adjacent moorland, suitable construction methods and soil handling methods would be adopted. These would be specified in the Construction Method Statement (CMS) and agreed with South Lanarkshire Council, Dumfries & Galloway Council, NatureScot and SEPA prior to works commencing at the site.

### Borrow Pits

- 5.5.20. The aggregate required for the new tracks and for upgrading of existing tracks would be won from 4 principal borrow pit areas, three of these would be located in the eastern part of the Daer Land Parcel, and one in the Kinnelhead Land Parcel to the south (see Figure 1.1). These excavations are located to avoid prominent slopes

and summits in order to screen most excavation activities from visually sensitive locations reducing the potential effect on the landscape and visual resource. Site won aggregate would aid the access tracks to blend in with the surrounding landscape and reduce the requirement for importing foreign material to site. Each borrow pit would be restored during the construction phase of the Proposed Development and subject to suitable aftercare provisions.

### Construction Methods and Landscape Reinstatement

- 5.5.21. Throughout all phases of the Proposed Development, ground disturbance on site would be confined, as far as practicable, to access tracks, turbine base areas, lay-down areas, crane pads and underground sections of the grid connection cables. The proposed location of these elements is described in Chapter 3: Project Description (see Figures 3.1 – 3.10). Moreover, working widths would be restricted and carefully monitored and any existing landscape feature or materials arising from site operations that are to be retained would be safeguarded.
- 5.5.22. No significant stockpiles of aggregate would be retained on site during construction. Any aggregate arising from the proposed borrow pits would be placed directly in situ.
- 5.5.23. All soils stripped from construction areas and borrow pits would be retained in clearly demarcated stockpiles of no greater than 3 m height in locations immediately around the edges of borrow pit excavations and/or directly placed to reinstate track sides.
- 5.5.24. On completion of the construction phase, all areas subject to ground disturbance would be reinstated to match adjoining undisturbed ground. Additionally, the surface of the former temporary compound would be scarified to prepare the surface for subsoil base and seeded to match surrounding vegetation.
- 5.5.25. A detailed construction and reinstatement method statement would be agreed with South Lanarkshire, Dumfries & Galloway Councils, NatureScot and SEPA prior to commencement of construction activities.

### Decommissioning

- 5.5.26. During decommissioning of the Proposed Development, all above ground structures (including access tracks) would be removed and the ground reinstated. Subject to further assessment of site hydrology and soil cover depths, below ground structures and foundations would be left in place to avoid further disturbance.

## 5.6. LANDSCAPE PLANNING POLICY CONTEXT

- 5.6.1. Details of the National, Regional and Local planning policy of relevance to the Proposed Development is contained in Chapter 4: Climate Change, Legislative and Policy Context. The following details those policies of particular relevance to landscape and visual issues.

### South Lanarkshire Landscape Capacity Study for Wind Energy

- 5.6.2. The South Lanarkshire Landscape Capacity Study for Wind Energy, February 2016 (SLLCSWE) supports South Lanarkshire Council's Supplementary Guidance for Wind Energy (SG10). This study assesses the sensitivity and strategic capacity of the South Lanarkshire landscape to accommodate different levels of wind energy development and supports strategic wind energy guidance. Paragraph 6.27 of the Supplementary Guidance explains that South Lanarkshire Council considers that landscape character and capacity are key considerations in considering the impact of wind farm and wind turbine proposals.
- 5.6.3. Section 6 and Table 6.1 of the Landscape Capacity Study for Wind Energy assesses each LCT in relation to its sensitivity to change and capacity for further development and provides guidance on the scale and type of wind energy development, if any, that it considers may be appropriate.
- 5.6.4. SG10 also states that the guidance in Table 6.1 should be followed in the consideration of proposals for all scales of wind energy developments. Where proposals are located in areas of significant cumulative development, the

guidance in Table 6.2 of the landscape capacity study is also relevant. Of relevance in this case is Area 8 The Southern Uplands and Glens where the key development guidance/criteria are:

- other wind farms should be clearly separated from Clyde Wind Farm;
- limit further significant northward wind turbine development to avoid extension of Landscape with Wind Turbines into the Southern Upland Fault area and onto Culter Fell to avoid visual coalescence with Glenkerrie wind farm to the northeast in Scottish Borders;
- limit further significant southward development to maintain clear visual and physical separation from Harestanes Wind Farm in Dumfries and Galloway;
- any proposed wind farm to the west of Clyde Wind Farm should be separated from the latter by at least 10 kilometres or two ridges and valleys; and
- avoid further extension of Landscape with Wind Turbines/ Wind Turbine Landscape of Clyde Wind Farm down slopes into Upland Glen areas.

5.6.5. The SLLCSWE identifies turbines T1 – T11 and T17 of the Proposed Development as being located in the Lowther Hills (Around Daer Water) LCA of the LCT 13: Southern Uplands.

5.6.6. The study describes the LCA as “characterised by large scale rolling hills surrounding the Daer Reservoir and bordering Dumfries and Galloway. The area lies between two very large windfarm developments (Clyde to the north and Harestanes to the south in Dumfries & Galloway). The hills are largely unforested, are relatively remote and undeveloped and lie entirely within the Lowther Hills SLA. The Southern Upland Way passes through this area.”

5.6.7. The opinion of the authors of the SLLCSWE states that there is no capacity for turbines in excess of 120 m and describes the development capacity of the LCA as “Further development should be strictly limited to maintain differences in character from the much more developed area (i) around Clyde windfarm to the north and maintain a gap between Clyde windfarm and Harestanes windfarm to the south in Dumfries & Galloway. Developments lying between these two extensive schemes would reduce their separation, increasing the potential for visual coalescence of cumulative clusters.”

5.6.8. The South Lanarkshire Tall Wind Turbines: Landscape Capacity, Siting and Design Guidance: Addendum to Landscape Capacity Study for Wind Energy 2016 (June 2019) updates aspects of the SLLCSWE (Feb 2016). The addendum was produced to reflect the increasing size of commercial wind turbines being deployed in new wind farm applications as a result of economic changes for onshore wind in the UK.

5.6.9. Additionally, the repowering of existing wind farms is becoming more prevalent and, as such, this addendum provides an update to the Council’s landscape capacity guidance to reflect current development trends for taller turbines. The Supplementary Guidance also provides further guidance on local siting and design and should be read in conjunction with the SLLCSWE (Feb 2016) and the Council’s Supporting Planning Guidance on Renewable Energy 2019. Together, the three documents provide technical support and guidance to the South Lanarkshire Local Development Plan 2 and are material planning considerations.

#### Dumfries and Galloway Wind Farm Landscape Capacity Study

5.6.10. The Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWFLCS) is used to inform decision making and is referred to as Appendix C of Part 1 Wind Energy Development: Development Management Considerations Supplementary Guidance. The document seeks to set out the key characteristic and sensitivities to wind farm development within the Dumfries and Galloway administrative area. The document was updated in February 2020 prior to NatureScot releasing updated draft guidance on landscape sensitivity assessment in Scotland (July 2020)<sup>1</sup>.

5.6.11. The DGWFLCS identifies turbines T12 – T16 of the Proposed Development as being within the Lowthers sub-unit of Landscape Character Type 19: Southern Uplands.

5.6.12. The DGWFLCS described LCT 19 as having “no scope for larger development typologies (turbines >50m) to be sited within this character type without incurring significant impacts on a number of key characteristics.”

5.6.13. The DGWFLCS goes on to say “This landscape is sensitive to indirect effects from wind farm developments sited in nearby landscapes. Proposed extensions to existing wind farms, or new wind farm development within Dumfries and Galloway or neighbouring South Lanarkshire, should avoid impacting on views to these hills from Annandale, Nithsdale and Upland Glens (10). Wind farm development in other nearby landscape character types should be sited to avoid detracting from landmark hills and dominating backdrops and skylines in this landscape. This guidance will relate to any potential future proposals for extensions to the operational developments of Clyde, Harestanes or Dalswinton but also to any new developments in the adjacent Foothills (18), Foothills with Forestry (18a), Southern Uplands with Forest and Plateau Moorland (17) character types.”

## 5.7. BASELINE CONDITIONS

5.7.1. The assessment of landscape effects of the Proposed Development considers the effect on the landscape as a resource or a group of identifiable receptors. These include:

- Generalised Landscape Character Types (LCTs) as identified in NatureScots Landscape Character database;
- Landscape fabric and character of the Proposed Development area; and
- Designated landscapes, at international, national and local level.

#### Landscape Character

5.7.2. Landscape character is defined as a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. LCTs refer to distinct types of landscape that are relatively homogenous in character. They are generic in nature and can occur more than once in different parts of the country but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation, historic land use and settlement pattern.

5.7.3. Overall, the landscape character of the study area consists of upland landscapes which crosses the study area in an east to west direction. This ranges from distinctive open uplands with a rolling topography to broader forested moorland tops. To the south of the Proposed Development the landscape opens up towards the Solway Firth and includes a series of broad dales. To the north are the transitional landscapes of rolling farmland, some areas with key distinctive features such as Tinto Hill, and a greater concentration of settlement situated amongst rolling farmland landscapes with different characteristics. A series of valley landscapes cuts through this general landscape pattern ranging between the narrow-wooded valleys to the broader valleys containing the main routes such as the M74 and A74 roads.

5.7.4. The following sources have been used to identify the LCTs of the study area and to assist with their baseline description:

- The Borders landscape assessment (ASH Consulting Group, 1998);
- Dumfries and Galloway landscape assessment (Land Use Consultants, 1998);
- SNH National Landscape Character Assessment, Landscape Character Type 95: Southern Uplands – Borders (NatureScot, 2019);
- SNH National Landscape Character Assessment, Landscape Character Type 162: Lower Dale – Dumfries & Galloway (NatureScot, 2019);

<sup>1</sup> NatureScot (2020) Landscape Sensitivity Assessment – Draft Guidance for Scotland, Consultation draft. NatureScot. Battleby. <https://www.nature.scot/sites/default/files/2020-12/Landscape%20Sensitivity%20Assessment%20Guidance.pdf>

- SNH National Landscape Character Assessment, Landscape Character Type 163: Middle Dale – Dumfries & Galloway (NatureScot, 2019);
- SNH National Landscape Character Assessment, Landscape Character Type 172: Upland Fringe – Dumfries & Galloway (NatureScot, 2019);
- SNH National Landscape Character Assessment, Landscape Character Type 175: Foothills – Dumfries & Galloway (NatureScot, 2019);
- SNH National Landscape Character Assessment, Landscape Character Type 176: Foothills with Forest – Dumfries & Galloway (NatureScot, 2019);
- SNH National Landscape Character Assessment, Landscape Character Type 177: Southern Uplands – Dumfries & Galloway (NatureScot, 2019); and
- SNH National Landscape Character Assessment, Landscape Character Type 217: Southern Uplands – Glasgow & Clyde Valley (NatureScot, 2019).

5.7.5. This complex landscape character baseline is illustrated on Figure 5.5.

5.7.6. The first stage initial assessment of potential effects on this landscape character baseline was carried out in Table A5.2.1 of Appendix 5.2 in order to identify those LCTs with the potential to experience significant effects and therefore requiring detailed assessment.

5.7.7. A total of 52 LCTs were identified within the 45 km study area, of these eight LCTs have been identified at initial assessment as landscape receptors with the potential to experience significant landscape effects and are taken through to be assessed in detail in the LVIA (see Appendix 5.2). These are as follows:

- LCT 163: Middle Dale – Dumfries & Galloway;
- LCT 175: Foothills – Dumfries & Galloway;
- LCT 176: Foothills with Forest – Dumfries & Galloway;
- LCT 177: Southern Uplands – Dumfries & Galloway;
- LCT 217: Southern Uplands – Glasgow & the Clyde Valley;
- LCT 95: Southern Uplands – Scottish Borders;
- LCT 172: Upland Fringe – Dumfries & Galloway; and
- LCT 209: Upland Glen – Glasgow & Clyde Valley.

5.7.8. Turbines 1 – 11 and 17 of the proposed development area lie within the Southern Uplands – Glasgow & Clyde Valley LCT, and Turbines 12 – 16 within the Southern Uplands – Dumfries and Galloway LCT, as identified by NatureScot in their Landscape Character database (SNH, 2019). Sharing similar characteristics, the LCTs have been distinguished separately in NatureScot’s Landscape Character database (2019) owing to previously being covered by separate Landscape Character Assessments published by SNH in the late 1990s<sup>2</sup>.

5.7.9. Descriptions of the location, key characteristics and landscape sensitivity for each of the LCTs is set out in Tables A5.2.2 – A5.2.9 of Appendix 5.2. Table 5.4 provides a summary of the landscape value, susceptibility and overall sensitivity of each LCT.

Table 5.4: Summary of LCT Sensitivity

LCT	Landscape Value	Landscape Susceptibility	Overall Landscape Sensitivity
LCT 217: Southern Uplands – Glasgow & the Clyde Valley	High	Medium	High
LCT 177: Southern Uplands – Dumfries & Galloway	High	Medium	High
LCT 163: Middle Dale – Dumfries & Galloway	Medium	Medium	Medium
LCT 175: Foothills – Dumfries & Galloway	Medium	Medium	Medium
LCT 176: Foothills with Forest – Dumfries & Galloway	Medium	Medium	Medium
LCT 95: Southern Uplands – Scottish Borders	High	High/medium	High
LCT 172: Upland Fringe – Dumfries & Galloway	Medium	Medium	Medium
LCT 209: Upland Glen – Glasgow & Clyde Valley	High/medium	High/medium	High/medium

Source: Appendix 5.2: Landscape Assessment

### Designated & Protected Landscapes

5.7.10. The criteria used to define designated landscapes varies greatly and these are generally defined within landscape planning policy and documentation. The level of designation also varies between internationally acclaimed landscapes, nationally recognised landscapes and local landscape designations, identified by each Local Planning Authority. There are no internationally recognised landscape designations within the study area.

5.7.11. The national and local landscape designations present within the 45 km study area are identified on Figure 5.6.

5.7.12. The first stage initial assessment was undertaken to identify those designated landscapes with the potential to experience significant effects and therefore requiring detailed assessment in the LVIA (see Table A5.2.10, Appendix 5.2).

5.7.13. A total of 3 National Scenic Areas (NSA), 18 Gardens and Designed Landscapes (GDL) and 14 local designations (Special Landscape Areas / Regional Scenic Areas) were identified within the study area. Of these, the following have been taken forward to the detailed assessment:

- Leadhills & Lowther Hills Special Landscape Area (SLA);
- Thornhill Uplands Regional Scenic Area (RSA); and
- Moffat Hills Regional Scenic Area.

5.7.14. Additionally, the Talla – Hart Fells Wild Land Area (WLA) is located approximately 9.3 km to the north east of the Proposed Development and is assessed separately according to best practice guidance (NatureScot, 2020<sup>3</sup>) in Appendix 5.3.

<sup>2</sup> Glasgow and the Clyde Valley Landscape Character Assessment (SNH, 1999) and Dumfries & Galloway Landscape Character Assessment (SNH, 1998) / Dumfries and Galloway landscape assessment (SNH, 1998).

<sup>3</sup> NatureScot. 2020. Assessing impacts on Wild Land Areas, Technical Guidance

5.7.15. Descriptions of the location, special qualities and landscape sensitivity for each of the landscape designations is set out in Appendix 5.2 and 5.3. Table 5.5 provides a summary of the landscape value, susceptibility and overall sensitivity of each landscape designation.

**Table 5.5: Summary of Protected & Designated Landscape Sensitivity**

Designation	Landscape Value	Landscape Susceptibility	Overall Landscape Sensitivity
<b>Leadhills &amp; Lowther Hills SLA</b>	High	Medium	<b>High</b>
<b>Thornhill Uplands RSA</b>	High	Medium	<b>High</b>
<b>Moffat Hills RSA</b>	High	Medium	<b>High</b>
<b>Talla – Hart Fells WLA</b>	High	High	<b>High</b>

Source: Appendix 5.2: Landscape Assessment & Appendix 5.3 Wild Land Assessment

### Visual Baseline

5.7.16. The assessment of visual effects of the Proposed Development considers the effect on visual receptors or viewers throughout the study area. Visual receptors are people who will be affected by changes in views or visual amenity at different places. They are usually grouped by what they are doing at these places and include:

- people living and working in the area, such as residents and farm workers;
- people who view the Proposed Development sequentially such as those travelling through the area on road, rail or other forms of transport;
- people visiting promoted tourist attractions and landscapes; and
- people pursuing other recreational activities.

5.7.17. These visual receptors comprise the visual baseline.

**Zone of Theoretical Visibility Mapping**

- 5.7.18. Computer generated ZTV mapping has been undertaken to assist in determining the likely extent of visibility of the Proposed Development within the study area and the likely landscape and visual receptors affected by the Proposed Development. ZTVs have been prepared in accordance with the guidance included within *Visual Representation of Wind Farms Good Practice Guidance Version 2.2* (SNH, 2017).
- 5.7.19. Analysis of the detailed ZTV Figures 5.2a – 5.4 identified areas where all parts of the Proposed Development were visible (full visibility) and those areas from where not all of the proposed turbines were visible (partial visibility). This process also identified those areas where no visibility occurred, which allowed some receptors to be scoped out of the various selected receptor lists, to be no longer considered for further assessment.

**Selected Viewpoints**

- 5.7.20. Analysis of the ZTVs, together with site knowledge and verification were used to identify a provisional list of viewpoints which were investigated during scoping stage consultation with the Planning Authorities and other stakeholders such as community groups and NatureScot. The scoping report identified a list of provisional selected viewpoints to be included in the finalised LVIA assessment. Following a review of the scoping opinion, further consultation was undertaken to confirm viewpoint locations to be included in the LVIA. This finalised list of 18 viewpoints has been chosen to represent the views experienced towards the Proposed Development throughout the study area by various groups of people or receptors.
- 5.7.21. The finalised list of selected viewpoints includes a variety of different types of view. These are referred to as representative views, specific views and exemplifying views from publicly accessible locations, which are defined as:
  - *Representative viewpoints*: selected to represent the experience of different types of visual receptors, where larger number of viewpoints cannot all be included individually and where the significant effects are unlikely to differ. For example, certain points may be chosen to represent the views of users of particular public footpaths and bridleways;
  - *Specific viewpoints*: chosen because they are key views and sometimes promoted viewpoints within the landscape, including for example scenic viewpoints from roads, specific local visitor attractions, viewpoints in areas that are particular noteworthy for visual and/or recreational amenity, such as landscapes with statutory landscape designations, or viewpoints with particular cultural landscape associations; and
  - *Exemplifying viewpoints*: chosen specifically to demonstrate a particular effect or specific issue, which might be the restricted visibility at certain locations.
- 5.7.22. Viewpoints are selected to take account of the viewing experience (such as static views from settlements and sequential views from routes) cumulative views of other developments and as far as possible are representative of the range of key visual receptors and view types (including panoramas, vistas, glimpsed views), as well as being located at varying distances, elevations and orientations from the Proposed Development.
- 5.7.23. Although these selected viewpoints primarily represent visual receptors, their location within certain designated landscapes or particular character types illustrate potential changes in the experiences from these landscapes, giving an indication of potential landscape effects. The predicted views from the selected viewpoints may therefore be cited as examples of such landscape effects within Landscape Assessment detailed in Appendix 5.4.
- 5.7.24. The selected viewpoints assessed in the LVIA are as follows:

**Table 5.6: Selected Viewpoints**

VP No.	VP Name	Coordinate	Distance from nearest turbine	Viewpoints located within Landscape Receptors	Visual Receptors
1	Tinto Hill	295324 634367	26.4 km	LCT 218: Rounded Landmark Hills Upper Clyde Valley SLA	Walkers
2	Pykestone Hill	317293 631271	29.0 km	LCT 95: Southern Uplands – Borders Tweeddale NSA Tweedsmuir Uplands SLA	Walkers
3	Culter Fell	305280 629061	21.6 km	Southern Uplands – Glasgow & Clyde Valley Upper Clyde Valley SLA	Walkers
4	A702 Road	295865 615648	8.2 km	LCT 209: Upland Glen -Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Road Users
5	Unclassified Road at Watermeetings	295049 613262	6.3 km	LCT 209: Upland Glen – Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Road Users
6	Annanhead Hill – Annandale Way	305847 613249	7.8 km	LCT 177: Southern Uplands – Borders Tweedsmuir SLA	Walkers
7	Chalk Rig Edge	307643 613441	9.3 km	LCT 177: Southern Uplands – Dumfries & Galloway Tweedsmuir SLA	Walkers
8	Green Lowther	290039 612027	9.1 km	LCT 217: Southern Uplands – Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Walkers
9	Lowther Hill	288987 610403	9.5 km	LCT 217: Southern Uplands – Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Walkers

VP No.	VP Name	Coordinate	Distance from nearest turbine	Viewpoints located within Landscape Receptors	Visual Receptors
10	Comb Head	290505 609196	7.8 km	LCT 217: Southern Uplands – Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Walkers
11	Wintercleuch	29652 610020	2.7 km	LCT 209: Upland Glen - Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Residents
12	Hods Hill – Southern Upland Way	300477 609480	1.6 km	LCT 177: Southern Uplands – Dumfries & Galloway Leadhills & the Lowther Hills SLA	Walkers
13	Southern Upland Way – Daer Reservoir	297412 608654	1.1 km	LCT 217: Southern Uplands – Glasgow & Clyde Valley Leadhills & the Lowther Hills SLA	Walkers
14	Moffat, Old Carlisle Road	309148 604984	9.4 km	LCT 163: Middle Dale – Dumfries & Galloway Moffat Hills RSA	Residents
15	Southern Upland Way / Roman Reivers Route	311109 603954	11.3 km	LCT 166: Upland Glens – Dumfries & Galloway Moffat Hills RSA	Walkers
16	Kinnelhead	302905 601792	3.6 km	LCT 176: Foothills with Forest – Dumfries & Galloway	Residents
17	Queensberry Hill	298911 599747	3.3 km	LCT 177: Southern Uplands – Dumfries & Galloway Thornhill Uplands RSA	Walkers
18	Hart Fell	311344 613574	12.6 km	LCT 177: Southern Uplands – Dumfries & Galloway Talla – Hart Fells WLA	Walkers

VP No.	VP Name	Coordinate	Distance from nearest turbine	Viewpoints located within Landscape Receptors	Visual Receptors
				Moffat Hills RSA	

Source: Figures 5.17 – 5.34.

5.7.25. Appendix 5.4 of this LVIA sets out the sensitivity, magnitude of change and effects associated with each viewpoint.

**Settlements**

5.7.26. Settlement receptors throughout the study area were identified as defined in the South Lanarkshire, Dumfries & Galloway and Scottish Borders Local Development Plans as key centres. Initial first stage assessment included desktop analysis of OS mapping and the ZTV to identify which settlements were likely to receive theoretical visibility of the Proposed Development.

5.7.27. The distribution of settlements throughout the study area generally correlates to the key valleys and consequently the key transportation routes. To the north, settlement is widespread set within rolling farmland and moorland reducing to along dales as the study area progresses southwards. Within 10 km of the Proposed Development are numerous individual residential properties, farmsteads and hamlets/building groups and scattered small villages. Site work verified the selection of 2 settlements to be assessed in detail for potential effects, in the event of the addition of the Proposed Development.

5.7.28. The 2 settlements identified by the initial assessment to have the potential to experience significant effects both lie within 10 km of the Proposed Development and comprise:

- Elvanfoot; and
- Moffat.

**Sequential routes**

5.7.29. The main transportation routes generally follow the broad valleys and dales with some minor routes along narrow wooded valleys. The principal routes include the M74/A74 road which travels through the study area in a north to south direction and several ‘A’ roads including the A701 and A702 connected by a network of ‘B’ roads and minor roads which cut across the upland farmland, forested hills and the rolling uplands to provide access to the larger villages, small hamlets and building groups.

5.7.30. Several long-distance footpaths also cross the study area, the closest of these to the Proposed Development is the Southern Upland Way (SUW) in which Stage 7 Wanlockhead to Beattock crosses in an east to west direction around the northern boundary of the proposed site. To the east, lies the Annandale Way and Roman Reivers Route long distance routes at 6.9 km from the Proposed Development.

5.7.31. As a viewer moves through the landscape along these linear routes, this can lead to a series of viewpoints and experiences which may include other developments in addition to the Proposed Development, together with ever changing views of the Proposed Development itself. These are known as sequential effects.

5.7.32. Analysis of the ZTVs and OS based mapping identified theoretical visibility of the Proposed Development from several sections of sequential road and recreational routes within the study area. Initial first stage assessment was undertaken on road routes, long distance footpath and cycle routes throughout the study area. Site work verified the selection of 5 sequential routes to be taken forward to be assessed in the LVIA for potential effects, in the event of the addition of the Proposed Development as follows:

- A701 road;
- A702 road;
- Southern Upland Way;
- Annandale Way; and
- Roman Reivers Route.

5.7.33. Table 5.7 summarises the sensitivity of each route receptor assessed.

**Table 5.7: Summary of Route Receptor Sensitivity**

Route Receptor	Visual Value	Visual Susceptibility	Overall Visual Sensitivity
A701 road	Medium	Medium	Medium
A702 road	Medium	Medium	Medium
Southern Upland Way	High	High	High
Annandale Way	High	High	High
Roman Reivers Route	High	High	High

Source: Appendix 5.4: Visual Assessment

**Residential Receptors**

5.7.34. Residential receptors are divided into individual residential properties close to the Proposed Development and whole settlements within the study area.

**Individual residential properties**

5.7.35. The Landscape Institute has published a guidance note to support landscape professionals in undertaking Residential Visual Amenity Assessment (Landscape Institute, 2019) for developments<sup>4</sup>. This document promotes a logical approach to the assessment of views of developments from residential receptors. Table 1 of Scottish Planning Policy (SPP) states a distance of 2 km for the consideration of visual impact.

5.7.36. Using OS and GIS data mapping, a total of 5 properties/property groups were identified within a 2km radius of the proposed turbines.

5.7.37. A review of aerial photography was undertaken to ascertain the access or approach to the property, the orientation of the property, the extent of its curtilage and the presence of vegetation and buildings around the property. A ZTV was then prepared and the properties plotted as shown in Figures A5.5.1 – A5.5.6. This would allow for any properties outwith the ZTV to be scoped out of the Residential Visual Amenity Assessment. All 5 properties were within the ZTV for the Proposed Development. Site survey was then carried out to verify these desktop studies and to ascertain whether all 5 properties were indeed inhabited.

5.7.38. The following individual residential properties are assessed in detail in the RVAA in Appendix 5.5 and listed below:

- Property 1 – Sweetshaw Foot;
- Property 2 – Kirkhope Cleuch;
- Property 3 – Crookburn;
- Property 4 – Kirkhope; and
- Property 5 – Blairmack.

5.7.39. All properties were considered to have a **High** value and susceptibility resulting in a **High** sensitivity.

**Cumulative Baseline**

5.7.40. The Cumulative Landscape and Visual Impact Assessment (CLVIA) has been undertaken concurrently with the Landscape and Visual Impact Assessment (LVIA) and like the LVIA deals with cumulative effects on landscape and visual receptors separately. The aim of the CLVIA is to identify, predict and evaluate potential key effects arising from the addition of the Proposed Development to a theoretical landscape baseline which includes cumulative developments currently present in the landscape and that may or may not be present in the landscape in the future. Cumulative developments consist of other wind farm developments only.

5.7.41. The difference between LVIA and CLVIA is the different baseline conditions in terms of other wind farm developments that are assumed to be present in the landscape. The LVIA baseline conditions consider the introduction of Proposed Development to a landscape with other operational wind farm developments and those under construction. The CLVIA baseline conditions consider the introduction of the Proposed Development to a landscape with other wind farm developments at more speculative stages of the planning system, such as:

- Consented wind farms which have been granted planning consent but are not yet constructed; and
- Submitted valid wind farm applications awaiting determination, including those at appeal.

5.7.42. For clarity, the cumulative assessment separates out these different speculative stages of development by identifying different 'cumulative' baseline scenarios. The existing scenario of operational wind farms and those under construction is assessed in the LVIA and is referred to as Scenario 1.

5.7.43. The CLVIA considers the following scenarios:

- Scenario 2: considers the addition of the Proposed Development in the context of operational wind farms, those under construction and additionally those developments currently consented. This represents the likely future scenario; and
- Scenario 3: considers the addition of the Proposed Development in the context of operational, under construction, consented, undetermined planning applications and wind farm developments currently at appeal (i.e. a less certain future scenario.)

5.7.44. Scenario 3 also has included Harestanes South which is currently at Scoping due to its proximity to the Proposed Development.

5.7.45. The detailed cumulative assessment will comprise the assessment of the introduction of the proposed scheme into each scenario baseline. In the CLVIA, cumulative effects will be reported as the additional effects of the introduction of the Proposed Development, should other cumulative schemes be present in the different baseline scenarios, over and above the effects identified in the LVIA. For each receptor, it is clarified as to whether the effect has increased or decreased relative to the LVIA assessment or whether the effects will be the same as in the LVIA assessment.

5.7.46. An initial cumulative search area of 60 km from the Proposed Development was delineated. The broad distribution of wind farm developments and their status within the planning system within 60 km of the Proposed Development is illustrated in Figure 5.10. This includes all typologies of wind turbine development above 50 m to blade tip in height up to 5 km from the Proposed Development, and all known wind farm developments consisting of more than 3 turbines and above 50 m to blade tip in height up to 60 km from the Proposed Development. These include all operational schemes, those schemes under construction, consented schemes, those schemes in the planning system as valid applications (including schemes at appeal) and those at the scoping stage within this search area. Recently withdrawn sites have not been included and those sites registered with a Proposal of Application Notice (PoAN), are not finalised applications and have therefore not been included as a valid application but have been included as a pre-application/scoping scheme.

<sup>4</sup> Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19.

5.7.47. The cumulative baseline identifies those developments that the assessor considers require detailed cumulative assessment in the CLVIA. These include all operational, consented and valid planning applications within an approximate 45 km radius from the proposed site and are illustrated in Figure 5.11 and listed in Table 5.8 below.

**Table 5.8: Cumulative Baseline Developments**

Wind Farm Name	Development Stage	Turbine No.	Blade Tip Height (m)
Andershaw	Operational	11	126
Clyde	Operational	152	125
Clyde Extension	Operational	54	142
Crossdykes	Operational	10	176.5
Dalswinton	Operational	15	121
Glenkerrie	Operational	11	100/120
Hagshaw Hill	Operational	26	55
Hagshaw Hill II	Operational	20	80
Harestanes	Operational	68	126.5
Middlemuir	Operational	15	136 / 149.9
Minnycap	Operational	10	125
Sanquhar	Operational	12	130
Sunnyside	Operational	2	62
Wether Hill	Operational	14	91
Crookedstane	Consented	4	126.5
Lion Hill	Consented	4	126.5
Glenmuckloch	Consented	8	133.5
Glenkerrie II	Consented	6	100
Priestgill	Consented	7	145
Sandy Knowe	Consented	24	125
Sanquhar Six	Consented	6	130
Twentysilling	Consented	9	125
Ulzieside	Consented	10	125
Whitelaw Brae	Consented	14	126.5
Glentaggart	Application	5	132
Hagshaw Hill Repowering	Application	14	200
Harestanes South	Scoping	15	200
Little Hartfell	Application	12	159.9
North Lowther	Application	30	149
Sanquhar II	Application	50	150 / 185
Scoop Hill	Application	75	180 / 200 / 250

Source: South Lanarkshire & Scottish Borders Cumulative Databases

5.7.48. The wind farm developments identified in the Cumulative Baseline are constantly evolving and all information is supplied to the best of our knowledge and up to date as of 30 November 2020. The continually evolving nature of the cumulative baseline requires a reasonable end date beyond which any further changes to the baseline would not need to be considered in the CLVIA. Through scoping consultation, a 'cut-off' date of 3 months prior to the submission of the LVIA has been agreed as a reasonable timeframe.

5.7.49. It should be noted that since the cumulative cut-off date, North Lowther Wind Farm has been refused consent following PLI, and an application for Harestanes has been submitted.

5.7.50. Potential effects on landscape and visual receptors are assessed for each cumulative baseline scenario separately.

## 5.8. LANDSCAPE ASSESSMENT

5.8.1. The aim of the Landscape Impact Assessment (LIA) is to identify, predict and evaluate potential key effects arising from the addition of the Proposed Development on the landscape as an environmental resource in its own right. Landscape effects may be caused by changes to the constituent features or elements of the landscape, its aesthetic or perceptual qualities and overall character. Landscape effects on designated landscapes are also considered in this assessment. This involves the assessment of changes to the special landscape qualities, which determine its reason for designation and the overall integrity of the designation.

5.8.2. Assessing the significance of landscape effects requires the identification of the landscape receptors, the consideration of the nature of the landscape receptors (sensitivity) and the nature of the effect (magnitude) which would be experienced by each landscape receptor as a result of the Proposed Development. The methodology for the landscape assessment is detailed in Appendix 5.1, including the method of identifying the susceptibility of landscape receptors. The lower the susceptibility, the greater the ability of the landscape character area/landscape designation to accommodate the Proposed Development without undue adverse effects.

5.8.3. A Cumulative Landscape Impact Assessment (CLIA) is also included in the following LIA and considers the level of effect as a result of the addition of the proposed development into each cumulative baseline scenario separately.

5.8.4. The following provides a summary of the effects on the landscape character of the proposed site and landscape character within the wider study area.

### Effect on Landscape Fabric and character of the Proposed Development Area

#### Proposed Site During Construction

5.8.5. Turbines 1 – 11 and 17 of the Proposed Development Area lie within the LCT 217: Southern Uplands – Glasgow & Clyde Valley, and Turbines 12 – 16 within LCT 177: Southern Uplands – Dumfries and Galloway.

5.8.6. During the construction phase of the Proposed Development, there will be potential for short-term direct effects of activities associated with the construction of infrastructure and turbines. Potential effects during this phase are reversible unless otherwise stated (e.g. creation of permanent new features such as earthworks, access tracks, hardstanding's and components of the development that will be retained post decommissioning).

5.8.7. The construction stage of the Proposed Development would result in direct physical effects to the proposed site. The following provides a summary of activities related to the construction phase specific to the Daer Land Portion in the Southern Uplands – Glasgow & Clyde Valley LCT:

- Construction/decommissioning of access tracks (including upgrades) and crane pad hardstandings;
- Creation of 4 borrow pits (3 within Daer Land Portion, and 1 within the Kinnelhead Land Portion) and the extraction of material followed by reinstatement;
- Construction/restoration of a temporary construction compound (within the Daer Land Portion);
- Construction/Decommissioning of a control building, energy storage and compound (within the Daer Land Portion);
- Construction/decommissioning of 17 wind turbines (12 within the Daer Land Portion and 5 within the Kinnelhead Land Portions) and associated crane operations;

- Excavation/reinstatement of cable trenches;
  - Construction/decommissioning of 2 permanent met masts (located within each land portion);
  - General reinstatement works; and
  - Vehicular/personnel movements on site.
- 5.8.8. Such operations would result in direct effects on the landscape fabric of the Proposed Development Area. This will include excavation of ground vegetation, earthworks, the introduction of new elements and activity associated with construction which would contrast with the existing land use and moorland context.
- 5.8.9. It is considered the magnitude of change on the landscape resource of the site would be **Substantial** resulting from the direct physical effects and size and scale of proposed changes over a localised area within the Daer and Kinnelhead Land Portions. This would be temporary in nature and reversible in the long-term.
- 5.8.10. This will result in a **Major (significant)** on the physical landscape fabric of the proposed site. The nature of these effects would be short-term (reversible), direct and negative.

#### Proposed Site During Operation

- 5.8.11. Following reinstatement post construction, the site area would enter the operational stage with activity within the proposed site reducing to works associated with the operation and maintenance of 17 wind turbines. The nature of the effects on landscape character would be long term during the operational life of the Proposed Development and reversible beyond this period as a result of decommissioning. There are currently no consented or proposed wind farm developments located within, or in close proximity which could contribute to direct cumulative landscape effects for the site.
- 5.8.12. Magnitude of change on the landscape resource of the site would remain as **Substantial** during operation because of the size and scale of the changes including the introduction of 17 operational wind turbines, 2 met masts, access tracks, compound, battery storage and substation.
- 5.8.13. This would result in a **Major (significant)** effect on the physical landscape fabric of the proposed site. The nature of these effects would be long-term (reversible), direct and negative.

#### Proposed Access Track

- 5.8.14. The proposed access track linking the proposed site with the A701 would include sections of upgraded existing track and short sections of new track. This would be approximately 19.3 km in length predominantly through farmland and forestry crossing 3 LCTs as follows:
- **LCT 163: Middle Dale – Dumfries & Galloway:** A small portion of the existing access track and entrance adjacent to the A701 near Raeknowes Moss would be upgraded within this LCT;
  - **LCT 175: Foothills – Dumfries & Galloway:** The proposed access track would extend between Raeknowes Moss and Broadshaw Rig and travel in an east to west direction. This would utilise the existing track which passes through farmland and forestry for approximately 5.4 km within the LCT; and
  - **LCT 176: Foothills with Forest – Dumfries & Galloway:** The proposed access track would pass through this LCT between Broadshaw Rig and Shiel Rig in a north easterly to south westerly direction. This would occur in existing forestry for approximately 11.2 km and would utilise existing forestry tracks and create new short sections within the LCT.
- 5.8.15. During construction, existing tracks would be upgraded by widening and straightening sharp bends and short new sections created to allow access by abnormal loads with all three of the LCTs mentioned above. Works associated with the upgrading of access tracks and creation of new sections of tracks would involve the removal of vegetation, creation of a track sub-base and running surface which would include new drainage.

- 5.8.16. The overall scale of the change would be very limited in all three LCTs both in the overall land take required and construction works whilst not introducing any new features into the LCT. Magnitude of change is considered to be **Negligible**.
- 5.8.17. This would result in a **Negligible (not significant)** effect on the physical landscape fabric of the proposed site due to the very limited part of the LCTs affected. The nature of these effects would be short-term (reversible), direct and neutral.
- 5.8.18. On completion, any disturbed areas would be reinstated following best practice methods. During operation, there would be a slight increase in vehicle movements along the track from maintenance vehicles which would occur daily but of low frequency. Magnitude of change is considered to be **Negligible**.

### Effect on Landscape Character in the Wider Landscape

- 5.8.19. Of the eight LCTs assessed, three have been identified as potentially experiencing a **significant** landscape effect as a result of the Proposed Development as follows:

#### LCT 217: Southern Uplands – Glasgow & Clyde Valley

- 5.8.20. Covering a large part of southern South Lanarkshire, the Southern Uplands – Glasgow & Clyde LCT is characteristic of the land surrounding the Upland Glens LCT of the Daer and Culter Waters. The LCT extends from Coulter in the north, to Ganna Hill in the south and includes the Lowther Hills and part of the Southern Uplands. Occupying an area to the south of the Southern Upland Fault line, the LCT comprises a series of large, rounded hills divided by U-shaped valleys. Landcover is predominantly grass moorland with areas of heather, extensive coniferous forestry and the operational Clyde Wind Farm is situated in the central part of the LCT. Settlement is sparse and mainly confined to lower hill slopes within U-shaped valleys which also form the main transport corridors through the LCT and includes the M74/A74, West Coast Railway Line and the A702 road.
- 5.8.21. This LCT is considered to have a **High** landscape sensitivity

#### Scenario 1

- 5.8.22. This is an extensive landscape with large central areas that are relatively inaccessible due to main roads and settlement being located within surrounding valleys. Visibility of Scenario 1 wind farms is widespread generally as a result on the operational Clyde Wind Farm and Extension which is located within the LCT to the north of the Proposed Development.
- 5.8.23. The size and scale of the change to landscape character would be focussed on a localised area in the south of the LCT. The ZTV indicates that theoretical visibility would be confined to the immediate vicinity of the proposed site within the LCT as a result of rising landform to the north at Hods Hill and extend 4.3 km to the west by Comb Law and Ballinluech Law. Thereafter, theoretical visibility would be experienced from higher ground within Clyde Wind Farm to the north up to 21.5 km away, as well as to the north west covering Lowther Hill, Green Lowther and Wellgreen Dod.
- 5.8.24. There would also be a slight increase in visibility of turbines currently experienced within the proposed site boundary; however, this would be confined to a few small pockets covering hollows, south and west facing slopes where Clyde and Harestanes Wind Farms are screened by surrounding landform. To the north, the extent of theoretical visibility would reduce and would be experienced within Clyde Wind Farm which has a significant influence on the character of the LCT.
- 5.8.25. The introduction of the Proposed Development would alter the key characteristics and perceptual qualities of the LCT within a 5 km area surrounding the Proposed Development Area. Thereafter, the key characteristics and perceptual qualities would be less affected due to a combination of reduced visibility and distance.

5.8.26. The magnitude of change would be **Substantial** within 5 km of the Proposed Development, thereafter, reducing to a **Slight** level as distance and the influence of Clyde Wind Farm increases.

5.8.27. This would result in a **Major (significant)** effect within 5 km reducing to a **Moderate (not significant)** effect overall on account of the limited part of the whole LCT affected and areas being within Clyde Wind Farm. The nature of these effects would be long-term (reversible), cumulative, indirect and negative.

#### Scenario 2

5.8.28. Scenario 2 baseline would result in an additional 8 turbines being located within this LCT at two separate sites, namely Crookedstane and Lion Hill to the north west of the Proposed Development. Both developments, if constructed would appear as an extension to Clyde Wind Farm as a result of no separation distance between the operational and consented sites. The addition of these two sites would not increase the extent of theoretical visibility experienced of wind turbines within the LCT as a result of being located next to the much larger Clyde Wind Farm. Both developments would extend the influence of wind turbines westwards towards the edge of the LCT adjoining the neighbouring Upland Glen – Glasgow & Clyde Valley LCT.

5.8.29. Both Clyde and Lion Hill would be the closest wind farms to the Proposed Development with Crookedstane located further west and would have less of an influence due to intervening landform. Through the design evolution of the Proposed Development, a separation distance between Clyde and the proposed site has been a key objective. The addition of Lion Hill would extend turbines to the north west of the proposed site; however, the distance between the Proposed Development and Lion Hill would be broadly similar to Clyde Wind Farm.

5.8.30. The magnitude of change associated with the introduction of the Proposed Development would be similar to Scenario 1 and would remain as **Substantial** within 5 km, reducing to **Slight** overall as a result of the small increase in turbines of this Scenario in proximity to the Proposed Development which would be long-term reversible.

5.8.31. This would result in a **Major (significant)** effect reducing to a **Moderate (not significant)** effect overall.

#### Scenario 3

5.8.32. No further wind farms would be located within this LCT in Scenario 3 with the main changes occurring indirectly from North Lowther and Scoop Hill developments which would be experienced indirectly from parts of this LCT. Scoop Hill would have the biggest influence with the Proposed Development appearing in the foreground in elevated views from Green Lowther and Lowther Hill (see Figures 5.24a – 5.25f). Magnitude of change would remain as **Substantial** within 5 km, reducing to a **Slight** overall level beyond 8.5 km, and long-term reversible.

5.8.33. This would result in a **Major (significant)** effect reducing to a **Moderate (not significant)** effect overall.

#### LCT 177: Southern Uplands – Dumfries & Galloway

5.8.34. Covering a smaller part of the site than the Southern Uplands – Glasgow & Clyde Valley LCT, the Southern Uplands – Dumfries & Galloway LCT occupies the southern part of the proposed site. Located in several locations within the southern half of the study area, the LCT is predicted to receive theoretical visibility of the Proposed Development in 9 Units, although only the Lowther, North Moffat and East Moffat units are predicted to receive potential significant effects due to their proximity to the Proposed Development.

5.8.35. Three units of the Southern Uplands – Dumfries & Galloway LCT have been assessed as follows:

- Lowther unit (Proposed Development located within);
- North Moffat; and
- East Moffat.

5.8.36. All of the above units have been assessed as having a **High** landscape sensitivity.

#### Scenario 1

5.8.37. Theoretical visibility of the Proposed Development would extend for 3.5 km to Queensberry Hill and include the hill tops of Mid Height, Harestanes Heights and Earnscraig in the intervening area with 1 – 17 turbines being visible depending on elevation. Thereafter, theoretical visibility would be limited to summits and east facing slopes of Hard Hill, Haggie Hill, Crightons Cairn and Tod Craig Hill to the south where 1-8 turbines are predicted to be visible; and to the south west at Garroch Fell where 12 – 14 turbines would be seen from the summit; and 9 -11 turbines on Glenleith Fell.

5.8.38. Within the North Moffat unit, the ZTV shows that the western part of the unit would receive theoretical visibility of 15 – 17 turbines from the western side of Hart Fell including Cocklaw Knowe, Auldton Fell, Merecleuch Hill. Similarly, the East Moffat unit is predicted to receive theoretical visibility along the southern slopes of Moffat Dale including Yadburch Hill, Gathshaw, Croft Head and Cape Fell. The extent of theoretical visibility would be limited to above the tree line as there is extensive forestry on the mid to lower slopes of both Moffat units of the LCT.

5.8.39. The change in experience of wind farm development as a result of the addition of the Proposed Development would be very limited geographically in the Lowther unit of the LCT. A separation distance of 3.7 km would be maintained between the Proposed Development and Harestanes Wind Farm to the south.

5.8.40. The introduction of the Proposed Development would alter the key characteristics and perceptual qualities of the LCT within a 5 km area surrounding the Proposed Development Area. Thereafter, the key characteristics and perceptual qualities would be less affected due to a combination of reduced visibility and distance.

5.8.41. A **Substantial** change is considered to occur within 5 km of the Lowther unit between the Proposed Development and Queensberry Hill, thereafter, reducing to **Negligible** due to the very limited extent of Lowther unit affected.

5.8.42. Elsewhere, both the North Moffat and East Moffat units are predicted to experience widespread theoretical visibility; however, much of the area of the two units affected is covered by forestry plantation and changes would be experienced from higher ground resulting in a **Slight** magnitude of change.

5.8.43. This would result in a **Major (significant)** effect within the Lowther unit and **Moderate (not significant)** effect in the North and East Moffat units of the LCT. The nature of these effects would be long-term (reversible), cumulative, indirect and negative.

#### Scenario 2

5.8.44. The addition of consented schemes to the baseline would not result in further wind turbine developments within this LCT. The addition of Lion Hill will be experienced from the North and East Moffat Units of the LCT, but the change would be minimal and not alter the key characteristics. When the Proposed Development is added to this cumulative baseline, it is predicted that the magnitude of change would be **Negligible**.

5.8.45. This would result in a **Negligible (not significant)** effect within all three units due to the limited extent of theoretical visibility predicted within each unit of the consented sites, combined with distance.

#### Scenario 3

5.8.46. No further sites would be located within the 3 units of this LCT considered in cumulative Scenario 3 baseline. However, Scoop Hill would be located on the edge of the East Moffat unit and will result in further turbines being located closer to the LCT. Due to landform, only the elevated parts of the East Moffat unit would be affected with greater extent of theoretical visibility of Scoop Hill predicted in the North Moffat unit.

5.8.47. The addition of the Proposed Development into this baseline scenario would extend turbine development in the Lowther unit of the LCT increasing the number of turbines visible. However, the Proposed Development would be experienced over a small part of the overall LCT and it is not considered that their addition will change the overall

characteristics of this LCT to a predominantly wind farm landscape. Magnitude of change is considered to be **Substantial** within 5 km in the Lowther unit, and **Slight** in the North and South Moffat units of the LCT.

- 5.8.48. This would result in a **Major (significant)** effect within the Lowther unit and **Moderate (not significant)** effect in the North and East Moffat units of the LCT as above.

### LCT 209: Upland Glens – Glasgow & Clyde Valley

- 5.8.49. This LCT is located to the north west and directly to the west of the Proposed Development covering the River Clyde and its tributaries the Daer Water and Potrail Water.
- 5.8.50. The Upland Glens – Glasgow & Clyde Valley LCT has been assessed as having a **High** landscape sensitivity.

#### Scenario 1

- 5.8.51. Theoretical visibility would extend approximately between 100 – 19.7 km to the west and north west of the Proposed Development and cover the Daer Water directly to the west of the Proposed Development where the magnitude of change would be **Substantial** due to the close proximity of the Proposed Development to this part of the LCT.
- 5.8.52. To the north west, theoretical visibility would occur mostly high ground to the north west and limited to areas at Brown Knees, Watermeetings, White Hill, Brown Hill, Watermeetings Rig, Glenochar, and Elvanfoot. From here, 14-17 turbines would be visible. At Watermeetings, theoretical visibility would extend down into the valley where a reduced number of turbines are predicted to be visible located in the northern part of the Daer Land Portion. In this area, a **Moderate** magnitude of change is predicted due to the relatively close proximity to the proposed turbines which would be experienced at the head of the valley in an area heavily influenced by Clyde Wind Farm.
- 5.8.53. However, overall, magnitude of change is considered to be **Slight** for the LCT due to limited extent of theoretical visibility predicted and effect on the key characteristics.
- 5.8.54. This would result in a **Major (significant)** to the west of the Proposed Development due to its proximity, reducing to a **Moderate (significant)** effect to the north west around Watermeetings, and thereafter a **Minor (not significant)** effect overall due to distance and limited extent of theoretical visibility.

#### Scenario 2

- 5.8.55. The addition of Lion Hill and Crookedstane would have a large effect on this LCT as a result of extending turbines further down into the valley from Clyde Wind Farm. Crookedstane would occupy an area to the north of Brown Hill and form a prominent feature at a junction of the valley where the Potrail and Daer Waters meet. The Lion Hill development would extend turbines further to the south west from Clyde Wind Farm.
- 5.8.56. The introduction of the Proposed Development into this cumulative baseline would result in further turbines extending over the horizon southwards from Clyde Wind Farm with Lion Hill occupying the gap between the Proposed Development and Clyde Wind Farm. However, this would occur in a localised area near Watermeetings to the north west of the Proposed Development resulting in a **Moderate** magnitude of change, but **Slight** overall, long-term reversible.
- 5.8.57. This would result in a **Major/moderate (significant)** to a small area at Watermeetings reducing to **Minor (not significant)** overall due to the limited part of the LCT affected.

#### Scenario 3

- 5.8.58. The Scoop Hill development would increase the number of turbines that can be experienced from this LCT. However, combined visibility would be confined to the edges of the LCT in very limited areas. Magnitude of change is predicted to remain **Slight** overall, long-term reversible.

- 5.8.59. This would result in a **Moderate (significant)** due to its proximity to the Proposed Development, overall **Minor (not significant)**.

### Non-Significant Effects – Landscape Character

- 5.8.60. The remaining five LCTs are all predicted to receive non-significant effects due to a combination of limited theoretical visibility, screening from landform and forestry, and distance from the Proposed Development.
- 5.8.61. The south western extent of the Southern Uplands – Scottish Borders LCT is located within the Talla – Hart Fells WLA which would increase sensitivity to **High** and when combined with a **Slight** magnitude of change result in a **Moderate** effect. This effect is considered to be **not significant** owing to the limited part of the LCT affected and distance between the Proposed Development and LCT.
- 5.8.62. Theoretical visibility within the Foothills – Dumfries & Galloway and Foothills with Forestry – Dumfries & Galloway LCTs are predicted to be prevalent throughout both units of the LCT assessed. Within the Beattock unit, it would be widespread in the west reducing eastwards and, be smaller due to screening by forestry in the neighbouring LCT to the west. Within the Annandale unit, theoretical visibility of 14-17 turbines is predicted from west facing slopes. The presence of forestry would reduce this somewhat; nevertheless, all 17 turbines are likely to be visible situated between Clyde and Harestanes/Minnygap Wind Farms at distances of 4.5 – 21.1 km. Magnitude of change is considered to be **Slight** within the Annandale and Beattock units, for a **Medium** sensitivity receptor resulting in a **Moderate/minor (not significant)** effect.
- 5.8.63. The Middle Dale – Dumfries & Galloway LCT is predicted to receive theoretical visibility mainly in the eastern side of the dale extending between Moffat in the north to the outskirts of Lockerbie in the south. In this location 14-17 turbines are predicted to be visible. Elsewhere, theoretical visibility is predicted around Lochwood although screening from forestry to the west located in the neighbouring LCT is likely to reduce the extent of visibility at this location. To the south, where the dale broadens, theoretical visibility is predicted to be widespread.
- 5.8.64. The size and scale of the change would be experienced mostly in the north of the LCT due to its closer proximity to the Proposed Development where the proposed turbines would occupy an area between Clyde and Harestanes Wind Farms. However, the proposed turbines would be set back from the dale and would have limited impact upon the small-scale characteristics of the LCT and its backdrop. Magnitude of change is **Slight** resulting in a **Moderate/minor (not significant)** effect.
- 5.8.65. The Upland Fringe – Dumfries & Galloway LCT is predicted to receive a **Minor (not significant)** effect as a result of a **Slight to Negligible** magnitude of change combined with a **Medium** sensitivity. This is due to the widespread theoretical visibility predicted in the Annandale unit of the LCT although the change would not be uncharacteristic to the present experience of turbines in neighbouring LCTs.
- 5.8.66. Table A5.9 provides a summary of the landscape assessment on LCTs.

Table A5.95.: Summary of Landscape Character Assessment

Landscape Character Type	Landscape Effects			
	Direct Effects	Scenario 1	Scenario 2	Scenario 3
<b>LCT 217: Southern Uplands – Glasgow &amp; Clyde Valley</b>	<b>Major (significant)</b>	<b>Major (significant)</b> Minor overall (not significant)	<b>Major (significant)</b> Minor overall (not significant)	<b>Major (significant)</b> Minor overall (not significant)
<b>LCT 95: Southern Uplands – Dumfries &amp; Galloway</b>	<b>Major (significant)</b> Negligible (not significant)	<b>Major (significant)</b> Negligible (not significant)	<b>Major (significant)</b> Moderate overall (not significant)	<b>Major (significant)</b> Moderate overall (not significant)
<b>LCT 163: Middle Dale – Dumfries &amp; Galloway</b>	Negligible (not significant)	Moderate/minor (not significant)	Negligible (not significant)	Moderate/minor (not significant)
<b>LCT 175: Foothills – Dumfries &amp; Galloway</b>	Negligible (not significant)	Moderate/minor (not significant)	Negligible (not significant)	Moderate/minor (not significant)
<b>LCT 176: Foothills with Forest – Dumfries &amp; Galloway</b>	<b>Negligible (not significant)</b>	Moderate/minor (not significant)	Negligible (not significant)	Moderate/minor (not significant)
<b>LCT 172: Upland Fringe – Dumfries &amp; Galloway</b>	N/A	Moderate (not significant)	Negligible (not significant)	Moderate (not significant)
<b>LCT 209: Upland Glen – Glasgow &amp; Clyde Valley</b>	N/A	<b>Major (significant)</b> Moderate overall (not significant)	<b>Major/moderate (significant)</b> Moderate overall (not significant)	<b>Moderate (significant)</b> Minor overall (not significant)

**Effect on Designated and Protected Landscapes**

- 5.8.67. The four landscape designations that were identified as requiring further detailed assessment are summarised below.
- 5.8.68. Significant effects are predicted for two of the local designations assessed. Similar to the direct effects on landscape fabric, the Leadhills and Lowther Hills SLA and Thornhill Uplands RSA would receive significant effects associated with the Proposed Development being located within these two local designations.

**Leadhills & the Lowther Hills SLA**

- 5.8.69. Covering an extensive area in the Southern Uplands to the north west of the study area, the Proposed Development is located within this SLA.
- 5.8.70. The Leadhills & Lowther Hills SLA is assessed as having a **High** sensitivity to change.

**Scenario 1**

- 5.8.71. Visibility of Scenario 1 wind farms is widespread generally as a result on the operational Clyde Wind Farm and Extension which is located within the SLA to the north of the Proposed Development.
- 5.8.72. The size and scale of the change would be focussed on a localised area in the south of the SLA. The ZTV indicates that theoretical visibility would be confined to the immediate vicinity of the proposed site within the SLA as a result of rising landform to the north at Hods Hill and extend 4.3 km to the west by Comb Law and Ballincluech Law. Thereafter, theoretical visibility would be experienced from higher ground within Clyde Wind Farm to the north up to 21.5 km away, as well as to the north west covering Lowther Hill, Green Lowther and Wellgreen Dod.

5.8.73. There would also be a slight increase in visibility of turbines currently experienced within the proposed site boundary; however, this would be confined to a few small pockets covering hollows, south and west facing slopes where Clyde and Harestanes Wind Farms are screened by surrounding landform. To the north, the extent of theoretical visibility would reduce and would be experienced within Clyde Wind Farm which has a significant influence on the character of the SLA.

5.8.74. The introduction of the Proposed Development would alter the special qualities of the SLA within a 5 km area surrounding the Proposed Development Area. Thereafter, the special qualities would be less affected due to a combination of reduced visibility and distance.

5.8.75. The magnitude of change would be **Substantial** within 5 km of the Proposed Development, thereafter, reducing as distance and the influence of Clyde Wind Farm increases to a **Slight** level, long-term reversible.

5.8.76. This would result in a **Major (significant)** within 5 km reducing to a **Moderate (not significant)** overall on account of the limited part of the whole SLA affected and areas being within Clyde Wind Farm. The nature of these effects would be long-term (reversible), cumulative, indirect and negative.

**Scenario 2**

5.8.77. Scenario 2 baseline would result in an additional 8 turbines being located within close proximity in this SLA at two separate sites, namely Crookedstane and Lion Hill to the north west of the Proposed Development. Both of these developments, if constructed would appear as an extension to Clyde Wind Farm as a result of no separation distance between the operational and consented sites. The addition of these two sites would not increase the extent of theoretical visibility experienced of wind turbines within the SLA as a result of being located next to the much larger Clyde Wind Farm. Both developments would extend the influence of wind turbines westwards.

5.8.78. Through the design evolution of the Proposed Development, a separation distance between Clyde and the proposed site has been a key objective. The addition of Lion Hill would extend turbines to the north west of the proposed site; however, the distance between the Proposed Development and Lion Hill would be broadly the same as Clyde Wind Farm.

5.8.79. The magnitude of change associated with the introduction of the Proposed Development would be similar to that experienced in Scenario 1 and would remain as **Substantial** within 5 km, reducing as distance and the influence of Clyde Wind Farm increases to **Slight** overall, long-term reversible.

5.8.80. This would result in a **Major (significant)** effect reducing to a **Moderate (not significant)** effect overall.

**Scenario 3**

5.8.81. No further wind farms would be located within this SLA in Scenario 3 with the main changes occurring indirectly from North Lowther and Scoop Hill developments which would be experienced from parts of this LCT. Scoop Hill would have the biggest influence with the Proposed Development appearing in the foreground in elevated views from Green Lowther and Lowther Hill (see Figures 5.24a – 5.25f). Magnitude of change would remain as **Substantial** within 5 km although it should be noted that Scoop Hill would have a limited influence due to landform screening, reducing to a **Slight** overall level beyond 8.5 km.

5.8.82. This would result in a **Major (significant)** effect reducing to a **Moderate (not significant)** effect overall.

**Thornhill Uplands RSA**

5.8.83. This RSA is centred on the Middle and Upper Dale of the Nith from Mennock south to Auldgirth, and the series of glaciated Upland Glens of the Mennock, Dalveen, Scar, Shinnel, Dalwhat and Castlefairn.

5.8.84. The Thornhill Uplands RSA is assessed as having a **High** sensitivity to change.

**Scenario 1**

5.8.85. Theoretical visibility of the Proposed Development would extend for 3.5 km to Queensberry Hill and include the hill tops of Mid Height, Harestanes Heights and Earnscraig in the intervening area with 1 – 17 turbines being visible depending on elevation. Thereafter, theoretical visibility would be limited to summits and east facing slopes of Hard Hill, Haggie Hill, Crightons Cairn and Tod Craig Hill to the south where 1-8 turbines are predicted to be visible; and to the south west at Garroch Fell where 12 – 14 turbines would be seen from the summit; and 9 -11 turbines on Glenleith Fell.

5.8.86. The introduction of the Proposed Development would alter the special qualities of the RSA within a 3.5 km area surrounding the Proposed Development Area. Thereafter, the special qualities would be less affected due to a combination of reduced visibility and distance.

5.8.87. A **Substantial** change is considered to occur between the Proposed Development and Queensberry Hill, thereafter, reducing to **Negligible** due to the very limited extent of the RSA affected.

5.8.88. This would result in a **Major (significant)** reducing to **Minor (not significant)** effect due to the limited extent of the RSA affected.

#### Scenario 2

5.8.89. The addition of consented schemes to the baseline would not result in further wind turbine developments within this RSA. When the proposed development is added to this cumulative baseline, it is predicted that the magnitude of change would be **Negligible** resulting in a **Negligible** effect.

#### Scenario 3

5.8.90. No further sites would be situated within this RSA considered in cumulative Scenario 3 baseline. The addition of the Proposed Development into this baseline scenario would extend turbine development in the RSA increasing the number of turbines visible. However, the Proposed Development would be experienced over a small part of the overall LCT and it is not considered that their addition will change the overall characteristics of this LCT to a predominantly wind farm landscape. Magnitude of change is considered to be **Slight** long-term reversible on account of the presence of Scoop Hill further to the east.

5.8.91. This would result in a **Major (significant)** effect within 3.5 km, reducing to a **Minor** effect overall due to the very limited part of the RSA affected.

#### Moffat Hills Regional Scenic Area

5.8.92. This RSA is located 5.7 km to the east of the Proposed Development and extends eastwards to 22.6 km.

5.8.93. The Thornhill Uplands RSA is assessed as having a **High** sensitivity to change.

#### Scenario 1

5.8.94. The ZTV shows that the western part of the RSA would receive theoretical visibility of 15 – 17 turbines from the western side of Hart Fell including Cocklaw Knowe, Auldton Fell, Merecleuch Hill. Similarly, the East Moffat unit is predicted to receive theoretical visibility along the southern slopes of Moffat Dale including Yadburch Hill, Gateshaw, Croft Head and Cape Fell. The extent of theoretical visibility would be limited to above the tree line as there is extensive forestry on the mid to lower slopes.

5.8.95. The RSA is predicted to experience widespread theoretical visibility in the south west of the designation; however, much of the area is covered by forestry plantation and would be limited to higher ground and therefore the special qualities of the RSA would not be altered. This would result in a **Slight** magnitude of change, long-term reversible.

5.8.96. This would result in a **Moderate (not significant)** effect for the RSA which would be long-term, indirect and reversible.

#### Scenario 2

5.8.97. The addition of consented schemes to the baseline would not result in further wind turbine developments within this RSA. When the Proposed Development is added to this cumulative baseline, it is predicted that the magnitude of change would be **Negligible** due to the limited influence that the consented sites have on this RSA. This would result in a **Negligible** effect.

#### Scenario 3

5.8.98. No further sites would be located within the RSA although Scoop Hill would be situated on the edge of the RSA and will result in further turbines being located closer to the designation. Due to landform, only the elevated parts of the RSA would be affected by Scoop Hill. Magnitude of change would remain as **Negligible**, be long-term reversible resulting in a **Negligible** effect.

#### Talla – Hart Fells Wild Land Area

##### Scenario 1

5.8.99. The Proposed Development would occupy an area between Clyde and Harestanes Wind Farms with turbines being viewed just beyond forestry at Rivox. The proposed turbines would be seen to the west of Queensberry and backclothed by the hills beyond including Cairnsmore of Carsphairn and Shiel Dod. The foreground landform at Rivox would help reduce the vertical extent of turbines by partially screening some turbine towers which would reduce their prominence when compared to the nearby operational Clyde Wind Farm.

5.8.100. The cumulative ZTV for Scenario 1 shown on Map A5.3.6 shows the theoretical extent of visibility of operational wind farms within the WLA. This indicates extensive theoretical visibility across the western half of the WLA, the exception being the more enclosed glens, cleuchs and watercourses, particularly on the western side of the WLA. The introduction of the Proposed Development would lead to a slight increase in visibility of turbines within the WLA. However, this would be very limited to cleuchs on the south western side near Arthur's Seat, Billsleuch Moor as well as the upper slopes of Crown of Scotland and Garelet Dod.

5.8.101. No physical attributes of the WLA would be affected by the Proposed Development. Potential effects would be on the perceptual qualities of the WLA in association with views beyond its boundary and how the perception of wildness and tranquillity is affected. The size and scale of the change would be small in comparison to the panoramic views obtained from the summits and upper hill slopes within the WLA. The Proposed Development would be viewed beyond an area of forestry with nearby wind turbines which already influences the perceptual attributes of wildness in the areas predicted to receive visibility of the proposed turbines. This would be experienced at distances ranging between 9.2 km and 19.7 km with the changes being long term but reversible, resulting in a **Slight** magnitude of change for Scenario 1, resulting in a **Moderate (not significant)** effect.

##### Scenario 2

5.8.102. There are several consented wind farms within 10 km of the WLA in the vicinity of Clyde Wind Farm (Crookedstane & Lion Hill), and Glenkerrie Wind Farm (Glenkerrie Extension). Additionally, Whitelaw Brae has also been consented and is located approximately 750 m from the north western boundary of the WLA. These developments as well as others in the wider landscape form the basis of Scenario 2 Cumulative Baseline.

5.8.103. The addition of these sites will extend turbine development closer to the WLA in the form of Whitelaw Brae Wind Farm and add an additional 8 turbines to Clyde Wind Farm appearing as one development overall. The addition of the Proposed Development into this baseline would result in an additional wind farm located between Clyde and Harestanes / Minnygap Wind Farms.

5.8.104. However, not all of the developments would be viewed at the same time due to nature of the landform which provides some screening, especially in the case of Crookedstane and Lion Hill which would be partially screened

by topography. None of the consented schemes exceed 150 m in tip height and would not require aviation lighting. Magnitude of change would remain as **Slight** for Scenario 2, resulting in a **Moderate (not significant)** effect.

**Scenario 3.**

- 5.8.105. The addition of Cumulative Scenario 3 to the baseline would result in several wind farms being added to the baseline scenario. In relation to the WLA, Scoop Hill is the closest of these lying approximately 8.0 km to the south. Whilst the visual envelope of the Proposed Development would be limited within the WLA, it would be very prominent from the south western extent of the WLA. From here, the turbines would be concentrated with significant stacking, and due to landform screening, the intervening landscape would appear close to Hart Fell.
- 5.8.106. The addition of the Proposed Development would not lead to an increase in magnitude of change due to the Proposed Development being located in an area between two wind farms and beyond forestry which already influences the perception of wildness in the areas predicted to receive theoretical visibility. Therefore, magnitude of change would remain as **Slight**, resulting in a **Moderate (not significant)** effect.

**Aviation Lighting**

- 5.8.107. The aviation lighting ZTV shown on Figure 5.4 and Map A5.3.7 shows the extent of theoretical visibility and intensity of turbine lighting in the WLA from the Proposed Development. The extent of theoretical visibility of aviation lighting is broadly similar to that shown on Map A5.3.5, albeit a slightly smaller visual envelope as a result of aviation lighting being installed on 8 of the 17 turbines. This would occur on the summits and south west facing slopes around Hart Fell, extending to the north west and south east, and from the summits of Garelet Dod, White Coombe and Molls Cleuch Dod. No other turbines are lit within the vicinity of the WLA.
- 5.8.108. The intensity of lighting within the area identified would predominantly be 200 candela during periods of good visibility, increasing to 2000 candela during poor visibility. Lower slopes in the south west of the WLA are also predicted to receive between 2000 and 750 candela intensity lighting during periods of poor visibility, dropping to 200 – 75 during clear visibility.
- 5.8.109. The lit turbines would be viewed in the existing artificial lighting baseline described in Step 2 and would not be as bright as other artificial lighting experienced in the surrounding area.
- 5.8.110. At night-time, the Proposed Development would introduce 8 additional sources of lighting into the landscape. This would be viewed within the existing lighting context described in Step 2 with the intensity being controlled, unlike the other light sources identified. The magnitude of change is considered to be **Slight** due to the areas predicted to be affected by the ZTV already experiencing artificial lighting from the surrounding area, resulting in a **Moderate (not significant)** effect.
- 5.8.111. The Scoop Hill turbines would also require aviation lighting as a result of exceeding 150 m tip height although it is unclear as to which method will be applied such as a reduced lighting scheme, or transponder if authorised for use by the CAA for UK airspace.
- 5.8.112. Aviation lighting would be long term, albeit only switched on during periods of low visibility or during the hours of darkness, and reversible.

**Table A5.105.: Landscape Designations Assessment**

Landscape Character Type	Scenario 1	Scenario 2	Scenario 3
<b>Leadhills &amp; The Lowther Hills SLA</b>	Major (significant) Moderate (not significant)	Major (significant) Moderate (not significant)	Major (significant) Moderate (not significant)
<b>Thornhill Uplands RSA</b>	<b>Major (significant)</b> Minor (not significant)	Negligible (not significant)	<b>Major (significant)</b> Minor (not significant)
<b>Moffat Hills RSA</b>	Moderate (not significant)	Negligible (not significant)	Negligible (not significant)
<b>Talla – Hart Fell WLA</b>	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)

**5.9. VISUAL IMPACT ASSESSMENT**

- 5.9.1. The aim of the Visual Impact Assessment (VIA) is to identify, predict and evaluate potential key effects arising from the addition of the Proposed Development on people’s views and visual amenity. Effects on views and visual amenity as experienced by people can be caused by changes in the appearance of the landscape resulting from the Proposed Development. A description of the visual baseline and analysis of ZTVs is contained in Appendix 5.4.
- 5.9.2. Assessing the significance of visual effects requires the identification of the visual receptors, the consideration of the nature of the visual receptors (sensitivity) and the nature of the effect (magnitude), which would be experienced by each visual receptor as a result of the Proposed Development. The methodology for the visual assessment is detailed in Appendix A5.1.
- 5.9.3. A Cumulative Visual Impact Assessment (CVIA) is also included in the following VIA and considers the level of effect as a result of the addition of the Proposed Development into each cumulative baseline scenario separately. The baseline scenarios are described in Appendix 5.4.

**Effect on Selected Viewpoints**

- 5.9.4. The 18 selected viewpoints that were identified to represent the general visual amenity throughout the study area are assessed in detail in Tables A5.4.2 – A5.4.19.
- 5.9.5. Nine out of the eighteen selected viewpoints have been identified as potentially experiencing a significant effect as follows:
  - Viewpoint 5: Unclassified Road at Watermeetings;
  - Viewpoint 8: Green Lowther;
  - Viewpoint 9: Lowther Hill;
  - Viewpoint 10: Comb Head
  - Viewpoint 11: Wintercleuch;
  - Viewpoint 13: Southern Upland Way, Daer Reservoir;
  - Viewpoint 15: Southern Upland Way / Roman Reviers Route near Craig Fell
  - Viewpoint 16: Kinnelhead; and
  - Viewpoint 17: Queensberry.

### Viewpoint 5: Unclassified Road at Watermeetings

- 5.9.6. This viewpoint is located close to the junction between the A702 road and the minor road leading to Daer Reservoir 6.3 km from the Proposed Development and is used by residents, employees at Daer Waterworks and visitors for recreation at Daer Reservoir.
- 5.9.7. Sensitivity to change is considered to be **Medium** for this viewpoint.
- 5.9.8. The Proposed Development would be viewed between Watermeetings Rig and Brown Knees where turbines will be visible both in front of and beyond Whiteside Hill. Within this part of the view, turbines would appear as a cluster with the more northerly turbines largely being screened by landform although several blades and one hub would be visible extending above the ridgeline.

#### Scenario 1

- 5.9.9. The size and scale of the change would be small overall with most of the turbines being screened by foreground landform resulting in a cluster being visible between hills. There would be a noticeable gap between Clyde Wind Farm and the Proposed Development with two blades being visible between the two developments but not discernible enough for the two developments to be perceived as one. Magnitude of change is considered to be **Slight**, long-term reversible.
- 5.9.10. This would result in a **Moderate (significant)** effect due to the extent of the development seen combined with distance.

#### Scenario 2

- 5.9.11. This cumulative scenario would include the following consented sites:
- Crookedstane; and
  - Lion Hill.
- 5.9.12. The addition of these two sites would result in Lion Hill turbines extending across the horizon within the view from Clyde Wind Farm with two notable outliers. Additionally, to the north west two turbines beyond Brown Hill comprising Crookedstane would be very prominent within the view from this location. The Proposed Development would be viewed behind Lion Hill and extend turbines across the horizon resulting in a cluster being visible. The addition of Lion Hill would infill the separation between Clyde and the Proposed Development helping to create a continuous line of turbines across the horizon ending at Watermeetings Rig, although the Proposed Development would not be as prominent. Magnitude of change would remain as **Slight**, long-term reversible.
- 5.9.13. This would result in a **Moderate (significant)** effect as described above with the addition of the Proposed Development being viewed in combination with Crookedstane and Lion Hill Wind Farms.

#### Scenario 3

- 5.9.14. No developments within this scenario are predicted to be visible resulting in a Negligible magnitude to change. This would result in a **Negligible** effect.

#### Night-time Assessment

- 5.9.15. Six of the eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be between 750 - 80 candela for T6/T10/T14, and 80 – 40 candela for T1/T2 during periods of poor visibility and darkness, reducing to 75 – 4 candela in clear visibility. These would be viewed in the context of lighting travelling along a road both via headlights of the vehicle travelling in and any other traffic on the road. Magnitude of change would be **Slight**, long-term reversible resulting in a **Moderate not significant** effect.

### Viewpoint 8: Green Lowther

- 5.9.16. This viewpoint is located close to the National Air Traffic Services (NATS) radar station on the summit of Green Lowther to the 9.1 km north west of the Proposed Development. The summit is accessed from a metalled road leading along the ridgeline from Lowther Hill to the south, and thereafter via the Southern Upland Way (SUW).
- 5.9.17. Sensitivity to change is considered to be **High** for this viewpoint.

#### Scenario 1

- 5.9.18. The Proposed Development would be visible to the south east beyond Hitteril Hill and to the right of Clyde Wind Farm. Turbines in the Daer Land Parcel would be the most visible with some partial screening occurring from the foreground Comb Head reducing visibility of turbines located in the Kinnelhead Land Parcel. The proposed turbines would be partially back clothed by Eskdalemuir with some turbines being skylined in the south due to their higher elevation. The Proposed Development would be seen within the existing context of Clyde Wind Farm but there would be a noticeable gap between the developments for them to appear as separate schemes.
- 5.9.19. The Proposed Development would occupy a smaller proportion of the view than Clyde Wind Farm and the turbines would not be as concentrated. Overall, the introduction of the Proposed Development would result in a medium scale change to the view from this location which would be experienced from the summit and upper slopes of the hillside. Magnitude of change is considered to be **Slight**, long-term reversible.
- 5.9.20. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy from an open elevated location.

#### Scenario 2

- 5.9.21. This cumulative baseline would result in the following sites being visible:
- Sandy Knowe;
  - Glenmuckloch;
  - Priestgill;
  - Glenkerrie II;
  - Whitelaw Brae;
  - Crookedstane;
  - Twentyshilling;
  - Ulzieside;
  - Sanquhar Six; and
  - Lion Hill.
- 5.9.22. The Lion Hill development would lead to a slight increase to the horizontal extent of turbines from Clyde; however, a separation distance between the Proposed Development and operational and consented schemes would be maintained. Magnitude of changes would remain as **Slight**, long-term reversible.

- 5.9.23. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented schemes of Lion Hill and Crookedstane.

#### Scenario 3

- 5.9.24. The cumulative baseline would result in the following developments being included:

- Little Hartfell;
- Sanquhar;
- Harestanes South;
- North Lowther;
- Hagshaw Hill Repowering; and
- Glentaggert.

5.9.25. Scoop Hill would be viewed to the south east and would occupy a large extent of the horizon. Alongside Little Hartfell, the developments will create a large cluster of turbines visible to the south east in conjunction with Crossdykes operational scheme.

5.9.26. The introduction of the Proposed Development into this context would lead to further wind turbines being seen to the south east but would be seen within an existing view influenced by wind turbines. Magnitude of change would remain as **Slight** and would be long-term reversible.

5.9.27. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented schemes of Lion Hill and Crookedstane.

#### Night-time Assessment

5.9.28. Seven of the eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be 200 candela during clear weather and 2000 candela during periods of poor visibility and darkness. This would introduce new artificial lighting into an unlit area adjacent to Daer Waterworks which is illuminated at night-time but viewed from a lit area associated with the NATs radar station. Magnitude of change would be **Slight**, long-term reversible resulting in a **Moderate (not significant)** effect.

#### Viewpoint 9: Lowther Hill

5.9.29. This viewpoint is located on the SUW and is accessed from Wanlockhead in the west, or Comb Hill to the south east 9.5 km to the north west of the Proposed Development. The hill is a popular location with hill walkers either on day trips or walking along Stage 7 of the SUW.

5.9.30. Sensitivity to change is considered to be **High** for this viewpoint.

#### Scenario 1

5.9.31. The Proposed Development would be visible to the south east beyond Hitteril Hill and to the right of Clyde Wind Farm. Turbines in the Daer Land Parcel would be the most visible with some partial screening occurring from the foreground Comb Head reducing visibility of turbines located in the Kinnelhead Land Parcel. The proposed turbines would be partially back clothed by Eskdalemuir with some turbines being sky lined in the south due to their higher elevation. The Proposed Development would be seen within the existing context of Clyde Wind Farm but there would be a noticeable gap between the developments for them to appear as separate.

5.9.32. The Proposed Development would occupy a smaller proportion of the view than Clyde Wind Farm and the turbines would not be as concentrated. Overall, the introduction of the Proposed Development would result in a medium scale change to the view from this location which would be experienced from the summit and eastern slopes of the hillside. Magnitude of change is **Slight**, long-term and reversible.

5.9.33. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy from an open elevated location.

#### Scenario 2

5.9.34. This cumulative baseline would result in the following sites being visible:

- Sandy Knowe;
- Glenmuckloch;
- Glenkerrie II;
- Whitelaw Brae;
- Crookedstane;
- Twentyshillig;
- Ulzieside;
- Sanquhar Six; and
- Lion Hill.

5.9.35. The Lion Hill development would lead to a slight increase to the horizontal extent of turbines from Clyde; however, a separation distance between the Proposed Development and operational and consented schemes would be maintained. Magnitude of changes would remain as **Slight**, be long-term and reversible.

5.9.36. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented schemes of Lion Hill and Crookedstane.

#### Scenario 3

5.9.37. The cumulative baseline would result in the following developments being included:

- Scoop Hill;
- Little Hartfell
- Sanquhar II; and
- North Lowther.

5.9.38. Scoop Hill would be viewed to the south east and would occupy a large extent of the horizon. Alongside Little Hartfell, the developments will create a large cluster of turbines visible to the south east in conjunction with Crossdykes operational scheme. The introduction of the Proposed Development into this context would lead to further wind turbines being seen to the south east but would be viewed within an existing view influenced by wind turbines. Magnitude of change would remain as **Slight** and would be long-term and reversible.

5.9.39. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented schemes of Lion Hill and Crookedstane.

#### Viewpoint 10: Comb Head

5.9.40. This viewpoint is located on the SUW and is situated between Lowther Hill and the A702 road. The viewpoint location can be accessed via Lowther Hill or Over Fingland on the A702 road and is 7.8 km to the west of the Proposed Development.

5.9.41. Sensitivity to change is considered to be **High** for this viewpoint.

#### Scenario 1

5.9.42. Seven of the proposed turbines would be visible to the east located on the Daer Land Parcel with the blades of the remaining 3 turbines being visible. The Proposed Development would be seen within the existing context of Clyde Wind Farm but there would be a noticeable gap between the developments for them to appear separate.

5.9.43. The Proposed Development would occupy a small part of the view and would not be as concentrated as the nearby Clyde Wind Farm. Overall, the introduction of the Proposed Development would result in a medium scale change

to the view from this location which would be experienced from the summit and eastern slopes of the hillside. Magnitude of change is **Slight**, long-term and reversible.

- 5.9.44. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy from an open elevated location.

#### Scenario 2

- 5.9.45. This cumulative baseline would result in the following sites being visible:

- Whitelaw Brae;
- Crookedstane;
- Twentyshilling;
- Ulzieside;
- Sanquhar Six; and
- Lion Hill.

- 5.9.46. The Lion Hill development would lead to a slight increase to the horizontal extent of turbines from Clyde; however, a separation distance between the Proposed Development and operational and consented schemes would be maintained. Magnitude of changes would remain as **Slight**, be long-term and reversible

- 5.9.47. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented schemes of Lion Hill and Crookedstane.

#### Scenario 3

- 5.9.48. The cumulative baseline would result in the following developments being included:

- Scoop Hill; and
- Sanquhar II.

- 5.9.49. Scoop Hill would be viewed to the south east but would be largely screened by topography. Sanquhar II would partially be seen further to the south west but distant.

- 5.9.50. The introduction of the Proposed Development into this context would lead to further wind turbines being seen to the south east but would be viewed within an existing view influenced by wind turbines. Magnitude of change would remain as **Slight** and would be long-term and reversible.

- 5.9.51. This would result in a **Moderate (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented and application schemes.

#### Viewpoint 11: Wintercleuch

- 5.9.52. Located close to the Daer Water, this group of properties includes Wintercleuch, Daerside and Hitterill which lie to the north west of Daer Reservoir Waterworks 2.7 km to the north west of the Proposed Development.

- 5.9.53. Sensitivity to change is considered to be **High** for this viewpoint.

#### Scenario 1

- 5.9.54. The proposed turbines would be visible to the south east of the properties with most of the turbines located within the Daer Land Parcel being visible between Hods Hill and Hitteril and above Daer Reservoir embankment. The introduction of the Proposed Development would extend turbines in the view from Clyde Wind Farm although there would be a noticeable gap between the two sites.

- 5.9.55. The magnitude of change is **Substantial** due to the proximity of the proposed turbines which will be viewed at the head of the valley containing the Daer Water. At night-time, four lights would be visible although this would be viewed within the existing context of the Daer Waterworks which emits its own light glow on account of security and street lighting. The change in view would be long-term and reversible.

- 5.9.56. This would result in a **Major (significant effect)** due to the proximity of the Proposed Development to this viewpoint.

#### Scenario 2

- 5.9.57. This cumulative baseline scenario would result in Lion Hill being added which would have an influence on the views from properties. This 4-turbine development would be located approximately 1.1 km to the north of the properties and seen as an extension to Clyde Wind Farm but also extend wind turbines into the valley and closer to the properties. The addition of the Proposed Development into this baseline context would alter the views to the south east by extending turbines into this area but would mainly be viewed from side windows and gardens; whereas, Lion Hill will be visible from the front of properties. Magnitude of change would remain as **Substantial**.

- 5.9.58. This would result in a **Major (significant)** effect due to the proximity of the Proposed Development to this viewpoint and the consented schemes.

#### Scenario 3

- 5.9.59. No application sites would be visible from this location and magnitude of change would be **Negligible** resulting in a **Negligible** effect.

#### Aviation Lighting

- 5.9.60. Three of the eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be between 80 – 40 for two turbines (T6/T10) during periods of poor visibility and darkness reducing to 8 – 4 candela during clear spells.

- 5.9.61. Magnitude of change would be **Slight**, long-term, and reversible resulting in a **Moderate (not significant)** effect.

#### Viewpoint 12: Southern Upland Way, Hods Hill

- 5.9.62. This viewpoint is located on top of Hods Hill on the SUW on the northern boundary of the proposed site.

- 5.9.63. Sensitivity to change is considered to be **High** for this viewpoint.

#### Scenario 1

- 5.9.64. The proposed turbines met mast and short sections of access tracks would be visible to the south occupying the eastern side of Daer Reservoir and seen below the viewpoint location. Turbines 13 and 14 would be viewed in front of Queensberry. All eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be 200 candela during clear spells and 2000 candela during periods of poor visibility.

- 5.9.65. Magnitude of change would be **Substantial** for this viewpoint as a result of the size and scale of the change experienced from this local highpoint on the SUW which is near the Proposed Development. This section of the SUW would pass between Clyde Wind Farm and the Proposed Development although both are far enough back that there is a clear distinction between the two developments.

- 5.9.66. This would result in a **Major (significant)** due to the proximity of the Proposed Development to this viewpoint.

### Scenario 2

5.9.67. This cumulative baseline would result in the following sites being visible:

- Whitelaw Brae;
- Glenkerrie II;
- Priestgill;
- Twentyshilling;
- Ulzieside;
- Sanquhar Six; and
- Lion Hill.

5.9.68. The addition of consented schemes to the baseline would increase the number of turbines viewed in existing clusters such as Ulzieside and Sanquhar Six to the west, Glenkerrie II to the north east. Whitelaw Brae would be viewed separately to the north east whilst Priestgill and Lion Hill would be largely screened within the view. It is not considered that the introduction of the Proposed Development into this baseline would alter the magnitude of change experienced which would remain as **Substantial**.

5.9.69. This would result in a **Major (significant)** effect due to the proximity of the Proposed Development to this viewpoint and the consented schemes.

### Scenario 3

5.9.70. The cumulative baseline would result in the following developments being included:

- Scoop Hill;
- Harestanes South;
- Sanquhar II; and
- North Lowther.

5.9.71. Similar to Scenario 2, most of the application sites would be associated with existing clusters with Harestanes South being viewed behind Harestanes and Minnygap to the south, and Sanquhar alongside the consented schemes to the west. To the south, Scoop Hill would be viewed to the south east and would occupy a large extent of the horizon. The introduction of the Proposed Development into this context would lead to further wind turbines being seen to the south east but would be viewed within an existing view influenced by wind turbines. Magnitude of change would remain as **Substantial** and would be long-term and reversible.

5.9.72. This would result in a **Major (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented and application schemes.

### Aviation Lighting

5.9.73. Eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be 200 candela during clear weather and 2000 candela during periods of poor visibility and darkness. These would be viewed at close distances and introduce artificial lighting to an area currently unaffected. Magnitude of change would be **Substantial**, long-term reversible resulting in a **Major (significant)** effect.

### Viewpoint 13: Southern Upland Way, Daer Reservoir

5.9.74. This viewpoint is located close to the gate leading onto the reservoir embankment which forms part of the SUW, 1.1 km to the nearest turbine. This location is used as an unofficial car parking space for people walking along the

minor road on the western side of the reservoir, or to access the section of the SUW crossing the reservoir embankment.

5.9.75. Sensitivity to change is considered to be **High** for this viewpoint.

### Scenario 1

5.9.76. Close views of the proposed turbines would be experienced from this location and would include all 17 turbines, 2 met mast and sections of access tracks which would occupy a considerable part of the view to the south east.

5.9.77. Magnitude of change is considered to be **Substantial** due to the close proximity of the viewpoint location to the Proposed Development resulting in a large part of the view being occupied in conjunction with Clyde Wind Farm further to the north. The extent of the change would be long-term and reversible.

5.9.78. This would result in a **Major (significant)** due to the proximity of the Proposed Development to this viewpoint.

### Scenario 2

5.9.79. An additional 4 turbines at Lion Hill and the blades of 2 of Crookedstane will be visible to the north and viewed within the context of Clyde Wind Farm appearing as part of one large development. The addition of the Proposed Development to this cumulative baseline would not alter the **Substantial** magnitude of change discussed for Scenario 1.

5.9.80. This would result in a **Major (significant)** effect due to the proximity of the Proposed Development to this viewpoint and the consented schemes.

### Scenario 3

5.9.81. No application sites would be visible from this location and magnitude of change would be **Negligible** resulting in a **Negligible** effect.

### Aviation Lighting

5.9.82. Five of the eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be between 80 – 40 for two turbines (T14/T15) during periods of poor visibility and darkness reducing to 8 – 4 candela during clear spells. Turbines TT6, T10 and T17 would be experienced at light intensities of 40-10 candela in poor visibility and hours of darkness and 4 – 1 candela in clear spells.

5.9.83. Magnitude of change would be **Slight**, long-term, and reversible resulting in a **Moderate (not significant)** effect.

### Viewpoint 16: Kinnelhead

5.9.84. This viewpoint is located to the 3.6 km south east of the Proposed Development in the Kinnelhead area and is representative of views obtained from the nearest residential properties within this area.

5.9.85. Sensitivity to change is **High** for this viewpoint.

### Scenario 1

5.9.86. The Proposed Development would be seen to the north east between Craighoar Hill and Tarnis Head where three turbines including hubs will appear above Hoarlaw with the tips of a further three turbines viewed beyond. One aviation light installed on Turbine 14 would be visible from this location at an intensity of 10 candela during clear visibility, and 40 candela during periods of poor visibility.

5.9.87. The size and scale of the change within the view would be limited to the three turbines viewed above Hoar Hill which would be prominent within views, while the blade tips of the other three turbines being less noticeable. Magnitude of change is **Moderate**, long-term and reversible.

5.9.88. This would result in a **Major (significant)** due to the proximity of the Proposed Development to this viewpoint.

### Scenario 2

- 5.9.89. No consented schemes would be visible from this location resulting in a **Negligible** magnitude of change resulting in a **Negligible** effect.

### Scenario 3

- 5.9.90. The cumulative baseline would result in the following developments being included:

- Scoop Hill; and
- Little Hartfell.

- 5.9.91. Scoop Hill and Little Hartfell would have the most influence on this location if consented. Both sites would be viewed to the west with Scoop Hill being the most prominent due to its closer proximity to the viewpoint and the number and size of the turbines being considered. The introduction of the Proposed Development to this baseline scenario would result in turbines being viewed successively from this location. Magnitude of change is **Moderate** long-term and reversible.

- 5.9.92. This would result in a **Major (significant)** effect when viewed successively with Scoop Hill.

### Aviation Lighting

- 5.9.93. No aviation lights would be visible from this location and magnitude of change and effect are considered to be **Negligible**.

### Viewpoint 17: Queensberry

- 5.9.94. Located to the north of the Forest of Ae and 9.3 km west of Beattock, Queensberry Hill is the highest summit in the southern Lowther Hills and 3.3 km to the nearest turbine.

- 5.9.95. Sensitivity to change is considered to be **High** for this viewpoint.

### Scenario 1

- 5.9.96. The whole of the Proposed Development would be seen from this summit directly to the north with Clyde Wind Farm beyond in the distance.

- 5.9.97. Magnitude of change would be **Substantial** for this viewpoint as a result of the size and scale of the change experienced from this summit which is near the Proposed Development. This would be viewed with Clyde Wind Farm beyond and successively with Harestanes and Minnygap Wind Farms to the east, and south east, long-term and reversible.

- 5.9.98. This would result in a **Major (significant)** due to the proximity of the Proposed Development to this viewpoint.

### Scenario 2

- 5.9.99. This cumulative baseline would result in the following sites being visible:

- Crookedstane;
- Lion Hill;
- Whitelaw Brae;
- Glenkerrie II;
- Priestgill;
- Twentyshilling;
- Ulzieside;

- Sanquhar Six; and
- Sandy Knowe.

- 5.9.100. The addition of consented schemes to the baseline would increase the number of turbines viewed in existing clusters such as Ulzieside and Sanquhar Six to the south west, Whitelaw Brae, Glenkerrie II, Lion Hill and Crookedstane to the north. It is not considered that the introduction of the Proposed Development into this baseline would alter the magnitude of change experienced which would remain as **Substantial**.

- 5.9.101. This would result in a **Major (significant)** effect due to the proximity of the Proposed Development to this viewpoint and the consented schemes.

### Scenario 3

- 5.9.102. The cumulative baseline would result in the following developments being included:

- Scoop Hill;
- Little Hartfell;
- Harestanes South;
- Sanquhar II; and
- North Lowther.

- 5.9.103. Similar to Scenario 2, most of the application sites would be associated with existing clusters with Harestanes South being viewed behind Harestanes and Minnygap to the south, and Sanquhar alongside the consented schemes to the south west. To the south east, Scoop Hill would occupy a large extent of the horizon behind Harestanes and Minnygap. The introduction of the Proposed Development into this context would lead to further wind turbines being seen to the north but would be viewed within an existing view influenced by wind turbines. There is also potential for a cumulative lighting effects alongside Scoop Hill although this is dependent on whether a reduced lighting scheme or transponder method is agreed at Scoop Hill. It is anticipated that more lights would be required for Scoop Hill than the Proposed Development. Magnitude of change would remain as **Substantial** and would be long-term and reversible.

- 5.9.104. This would result in a **Major (significant)** effect due to the extent that the Proposed Development will occupy in combination with the consented and application schemes.

### Aviation Lighting

- 5.9.105. Eight turbines fitted with aviation lights would be visible from this viewpoint with light intensities predicted to be 200 candela during clear weather and 2000 candela during periods of poor visibility and darkness. These would be viewed at close distances distance and introduce artificial lighting to an area currently unaffected. Magnitude of change would be Substantial, long-term reversible resulting in a **Major (significant)** effect.

- 5.9.106. Table A5.11 provides a summary of the viewpoints assessed.

Table A5.115.: Viewpoint Assessment

Viewpoint	Scenario 1	Scenario 2	Scenario 3	Night-time Assessment
VP1: Tinto Hill	Moderate/minor (not significant)	Moderate/minor (not significant)	Moderate/minor (not significant)	Minor (not significant)
VP2: Pykestone Hill	Moderate/minor (not significant)	Moderate/minor (not significant)	Moderate/minor (not significant)	Minor (not significant)
VP3: Culter Fell	Moderate/minor (not significant)	Moderate/minor (not significant)	Moderate/minor (not significant)	Minor (not significant)
VP4: A702 Road	Moderate (not significant)	Moderate (not significant)	Negligible (not significant)	Minor (not significant)
VP5: Unclassified Road at Watermeetings	<b>Moderate (significant)</b>	<b>Moderate (significant)</b>	Negligible (not significant)	Moderate (not significant)
VP6: Annanhead Hill – Annandale Way	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)
VP7: Chalk Rig Edge	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)
VP8: Green Lowther	<b>Moderate (Significant)</b>	<b>Moderate (Significant)</b>	<b>Moderate (Significant)</b>	Moderate (not significant)
VP9: Lowther Hill	<b>Moderate (Significant)</b>	<b>Moderate (Significant)</b>	<b>Moderate (Significant)</b>	Moderate (not significant)
VP10: Comb Head	<b>Moderate (significant)</b>	<b>Moderate (significant)</b>	<b>Moderate (significant)</b>	Moderate (not significant)
VP11: Wintercleuch	<b>Major (significant)</b>	<b>Major (significant)</b>	Negligible (not significant)	Moderate (not significant)
VP12: Hods Hill – Southern Upland Way	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>
VP13: Southern Upland Way – Daer Reservoir	<b>Major (significant)</b>	<b>Major (significant)</b>	Negligible (not significant)	Moderate (not significant)
VP14: Moffat, Old Carlisle Road	Negligible (not significant)	Negligible (not significant)	Negligible (not significant)	Negligible (not significant)
VP15: Southern Upland Way / Roman Reivers Route	<b>Moderate (significant)</b>	Negligible (not significant)	Negligible (not significant)	Negligible (not significant)
VP16: Kinnelhead	<b>Major (significant)</b>	Negligible (not significant)	<b>Major (significant)</b>	Negligible (not significant)
VP17: Queensberry Hill	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>
VP18: Hart Fell	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)	Moderate (not significant)

**Summary of Effects on Residential Receptors**

5.9.107. There are five scattered properties within 2 km of the proposed turbines, the assessment of these properties is set out in Appendix 5.5. These are located surrounding Daer Reservoir and are associated with farms, the exception being Kirkhope Cleuch Cottage which is an individual property only. Four of the properties are financially involved with the Proposed Development (Properties 1,3, 4 and 5):

- Property 1: Sweetshaw Foot;
- Property 2: Kirkhope Cleuch Cottage;
- Property 3: Crookburn;
- Property 4: Kirkhope; and
- Property 5: Blairmack.

5.9.108. The sensitivity of each property is judged to be **High** as residential receptors represent **High** value receptors with a **High** susceptibility to visual change owing to their fixed position. The visibility of the Proposed Development includes visibility from the property and its curtilage and immediate parts of the access road/driveway to each property.

5.9.109. **Significant** visual effects have been predicted for all five properties ranging between **Major** and **Major/moderate** due to their proximity and open views towards the proposed turbines and effects associated with aviation lighting. However, none have been identified to be affected to such a degree that they would become ‘widely regarded as an unattractive place where to live and/or the development is inescapably dominant or unpleasantly overwhelming’, the test applied by many Reporters when considering residential visual amenity.

5.9.110. **Major (significant)** visual effects have been identified for Properties 1-2 and 4-5 would receive open views of the Proposed Development over a large area and include wind turbines, met mast and sections of access tracks. This would result in a **Substantial** magnitude of change which would be long-term and reversible.

5.9.111. A **Major/moderate** visual effect has been identified for Crookburn however intervening screening from foreground landform would reduce the extent of the Proposed Development visible, reducing the magnitude of change to **Moderate (significant)**, permanent and reversible.

Table A5.125.: Residential Properties Assessment

Property	Effect
Property 1: Sweetshaw Foot	<b>Major (significant)</b>
Property 2: Kirkhope Cleuch Cottage	<b>Major (significant)</b>
Property 3: Crookburn	<b>Major (significant)</b>
Property 4: Kirkhope	<b>Major (significant)</b>
Property 5: Blairmack	<b>Major (significant)</b>

**Summary of Effects on Settlements**

5.9.112. No significant visual effects have been identified from any of the two assessed settlements (see Appendix 5.4). Elvanfoot has been assessed as receiving a **Negligible** effect from the Proposed Development on account of the very limited part of the settlement predicted to receive visibility and screening on the western side of the settlement by vegetation.

5.9.113. Moffat has been predicted to receive a **Slight** magnitude of change resulting in a **Moderate (not significant)** effect for Scenarios 1 and 3. From this settlement, the eastern side is predicted to receive visibility of the Proposed Development although views would be mixed with some screening occurring from foreground buildings.

Settlement	Scenario 1	Scenario 2	Scenario 3	Night-time Assessment
Elvanfoot	Negligible (not significant)	Negligible (not significant)	Negligible (not significant)	Negligible (not significant)
Moffat	Moderate (not significant)	Negligible (not significant)	Moderate (not significant)	Minor (not significant)

### Summary of Effects from Sequential Routes

5.9.114. One out of the five sequential routes assessed have been identified as potentially experiencing a significant effect, namely the Southern Upland Way.

#### Southern Upland Way

5.9.115. Stage 7 of the Southern Upland Way between Wanlockhead and Beattock passes around the red line boundary to the north of the Proposed Development.

5.9.116. This is a popular long-distance footpath and sensitivity is assessed as **High**.

#### Scenario 1

5.9.117. Magnitude of change would be Substantial as a result of the size and scale of the change experienced in Section 7. This section of the SUW would also pass between Clyde Wind Farm and the Proposed Development although both are far enough back that there is a clear distinction between the two developments.

5.9.118. The section between Lowther Hill and the A702 Road would receive elevated views of the Proposed Development when travelling in an eastern direction. As the path descends, foreground landform provides screening of the Proposed Development which would be seen in conjunction with Clyde Wind Farm. Magnitude of change for this section of the footpath would be **Slight**, long-term reversible leading to a **Moderate (significant effect)** (see Viewpoints 9 and 10).

5.9.119. The section between Meikle Shag and Hitteril Hill is located at a lower elevation and Hitteril Hill would provide screening resulting in blades being visible on the western extent of this section reducing to being fully screened until rounding the lower slopes of Hitteril. From this section the northern turbines start to emerge within the view when travelling eastwards. Magnitude of change from this section would be **Slight** resulting in a **Moderate (not significant)** effect.

5.9.120. The section between the Daer Dam and Beld Knowe would pass around the northern boundary of the Proposed Development and receive close views ranging from low-level to elevated locations across the site. Magnitude of change for this section would be **Substantial** resulting in a **Major (significant)** effect.

5.9.121. The section between Easter Earshaig and Beattock would largely be screened by a combination of forestry and landform within the Rivox Land Portion and magnitude of change for this section is considered to be **Slight** resulting in a **Moderate (not significant)** effect.

5.9.122. The section of footpath from the M74 motorway leading to Damsal Shoulder crosses Annandale. The proposed Development gradually becomes more visible from the western part of this footpath as the elevation rises allowing views of the proposed turbines above the ridgeline of the Rivox Land Portion. From this section of footpath, magnitude of change would be **Slight** resulting in a **Moderate (not significant)** effect.

#### Scenario 2

5.9.123. This cumulative baseline would result in the following sites being visible mainly from the more elevated sections of the SUW:

- Whitelaw Brae;

- Glenkerrie II;
- Priestgill;
- Twentyshilling;
- Ulzieside;
- Sanquhar Six; and
- Lion Hill.

5.9.124. The addition of consented schemes to the baseline would increase the number of turbines viewed in existing clusters such as Ulzieside and Sanquhar Six to the west, Glenkerrie II to the north east. Whitelaw Brae would be viewed separately to the north east whilst Priestgill would be largely screened within the view. Both Lion Hill and Crookedstane would be visible but appear as part of the overall Clyde cluster. It is not considered that the introduction of the Proposed Development into this baseline would alter the magnitude of change experienced which would remain as **Substantial** resulting in a **Major (significant)** effect for the section between Daer Dam and Beld Knowe.

#### Scenario 3

5.9.125. The cumulative baseline would result in the following developments being included:

- Scoop Hill;
- Harestanes South;
- Sanquhar II; and
- North Lowther.

5.9.126. Similar to Scenario 2, most of the application sites would be associated with existing clusters of turbines with Harestanes South being viewed behind Harestanes and Minnygap to the south, and Sanquhar alongside the consented schemes to the west. To the south east, Scoop Hill would be visible and occupy a large extent of the horizon. The introduction of the Proposed Development into this context would lead to further wind turbines being seen sequentially to the south east but would be viewed within an existing view influenced by wind turbines. There is also potential for a cumulative lighting effects alongside Scoop Hill although this is dependent on whether a reduced lighting scheme or transponder method is agreed at Scoop Hill. It is anticipated that more lights would be required for Scoop Hill than the Proposed Development. Magnitude of change would remain as **Substantial** and would be long-term and reversible resulting in a **Major (significant)** effect for the section between Daer Reservoir and Beld Knowe.

#### Aviation Lighting

5.9.127. All eight turbines fitted with aviation lights would be visible from short sections of this route with light intensities predicted to be 200 candela during clear spells and 2000 candela during periods of poor visibility between Daer Reservoir. This would result in a **Substantial** magnitude of change and a **Major (significant)** effect from this section of footpath.

#### Non-significant Route Receptors

5.9.128. The remaining four routes which are not considered to receive a significant effect are:

- A701 road;
- A702 road;
- Annandale Way; and
- Roman & Reivers Route.

5.9.129. All of these routes are predicted to receive theoretical visibility of the Proposed Development. However, a combination of the short sections of route affected, distance and screening from landform and forestry reduces the magnitude of change to a **Slight** level. This would result in a **Moderate (not significant)** effect to short sections of both the Annandale Way and Roman Reivers Route where open views from elevated locations can be obtained. Overall, magnitude of change is considered to be **Negligible** on account of screening, distance and the short sections of the routes affected for both the Annandale Way and Roman Reivers Route, combined with a **High** sensitivity results in a **Negligible (not significant)** effect.

5.9.130. The A701 road would obtain views of the Proposed Development for a very short section north of the Devils Beeftub. However, this would be seen beyond Clyde Wind Farm and would appear as part of Clyde when travelling southwards. The Proposed Development would be screened from the overall route leading to a **Negligible** magnitude of change and **Negligible (not significant)** effect.

5.9.131. The A702 would receive views of the Proposed Development between to southern edge of Elvanfoot and junction for Watermeetings when travelling southbound. This would occur for a short section where the Proposed Development would be viewed beyond Clyde Wind Farm but not as prominent owing to foreground screening by landform. This would result in a **Slight** magnitude of change for a short section of a **Medium** sensitivity receptor leading to a **Moderate (not significant)** effect. Overall, the route would receive a **Negligible** magnitude of change resulting in a **Negligible (not significant)** effect due to the limited visibility experienced.

Table A5.4.295.:Route Receptor Assessment

Sequential Route	Scenario 1	Scenario 2	Scenario 3	Night-time Assessment
<b>A701 Road</b>	Localised Minor (not significant) Negligible overall	Negligible (not significant)	Localised Minor (not significant) Negligible overall	Negligible (not significant)
<b>A702 Road</b>	Localised Moderate (not significant) Negligible overall	Localised Moderate (not significant) Negligible overall	Negligible (not significant)	Minor (not significant)
<b>Southern Upland Way</b>	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>	<b>Major (significant)</b>
<b>Annandale Way</b>	Moderate (not significant) Negligible overall	Negligible (not significant)	Moderate (not significant) Negligible overall	Minor (not significant)
<b>Roman Reivers Route</b>	Moderate (not significant) Negligible overall	Negligible (not significant)	Moderate (not significant) Negligible overall	Minor (not significant)

## 5.10. CONCLUSIONS

### Landscape Fabric

5.10.1. The Proposed Development would be located within two LCTs as follows:

- LCT 217: Southern Uplands – Glasgow & Clyde Valley; and
- LCT 177: Southern Uplands – Dumfries & Galloway.

5.10.2. The construction and decommissioning stages of the Proposed Development would result in ground disturbance operations, track upgrades and new track/crane pad/hardstanding construction and decommissioning removal, construction of wind turbines and removal during decommissioning and general reinstatement works, together with vehicular/personnel movements on site. Such operations would result in direct effects on the landscape fabric of the development site area. This will include ground vegetation and soil removal and the introduction of new elements into the moorland context. It is considered the magnitude of change on the landscape resource of the site would be **Substantial**, resulting from a large geographical extent and major size and scale of proposed changes but for a short period of time. This results in a **Major (significant)** effect on the landscape resource of the proposed site area during the construction and decommissioning stages of the Proposed Development.

5.10.3. Following reinstatement post construction, the site area would enter the operational stage. The magnitude of change on the landscape resource of the site would remain **Substantial**, resulting from the large geographical extent of the site area affected, the size and scale of proposed changes including the introduction of 17 vertical elements into the moorland and the long term, theoretical reversible nature of the changes. This is considered to result in a **Major (significant)** effect on the proposed site area during the operational stage of the Proposed Development.

### Wider Landscape

5.10.4. Three out of the eight identified LCTs has been identified as potentially experiencing significant landscape and cumulative effects as follows:

- LCT 177: Southern Uplands – Dumfries & Galloway;
- LCT 209: Upland Glens – Glasgow & Clyde Valley; and
- LCT 217: Southern Uplands – Glasgow & Clyde Valley.

#### Scenario 1

5.10.5. All of the LCTs are predicted to receive localised **Major (significant)** effects as a result of the Proposed Development. This is due to the small part of the overall LCT that would be affected within 8 km from the proposed site. This would result in a locally **Substantial** magnitude of change for **High** sensitivity receptors. Overall, all three LCTs are predicted to receive a **Moderate/minor to Negligible (not significant)** effect as a result of the very limited theoretical visibility predicted resulting in a **Slight to Negligible** magnitude of change.

#### Scenario 2

5.10.6. Three of the LCTs listed above are predicted to receive localised **Major (significant)** effects as a result of the addition of the Proposed Development experienced in a cumulative baseline that includes the consented schemes of Crookedstane and Lion Hill. This is due to the likely cumulative effects that would occur within 5 km of the Proposed Development. Within this area, a locally **Substantial** magnitude of change for **High** sensitivity receptors would occur. Overall, all three LCTs are predicted to receive a **Moderate/minor to Negligible (not significant)** effect because of the very limited theoretical visibility predicted within the wider LCTs resulting in a **Slight to Negligible** magnitude of change.

### Scenario 3

- 5.10.7. All three would also receive a **Major (significant)** effect for cumulative baseline Scenario 3 due to the influence of Scoop Hill located to the east. This would be experienced from the Kinnelhead Land Portion and from elevated ground to the north west of the Proposed Development leading to a **Substantial** magnitude of change. Overall, the magnitude of change would be **Slight** to **Negligible** resulting in a **Minor (not significant)** effect.

## Protected & Designated Landscapes

### Scenario 1

- 5.10.8. The Proposed Development would be located within the Leadhills, & the Lowther Hills SLA and Thornhill Uplands RSA and it is predicted that the special qualities would be affected within the proposed site extending out to around 5 km. Magnitude of change would be **Substantial** for a **High** sensitivity receptor resulting in a **Major (significant)** effect. Overall, the magnitude of change would be **Slight-Negligible** as a result of the limited part of the overall designations affected. This would result in a **Moderate – Negligible (not significant)** effect.
- 5.10.9. Talla – Hart Fells WLA is predicted to receive a **Slight** magnitude of change to its key wild attributes resulting in a **Moderate (not significant)** effect on account of the existing context of wind farms to the west in which the Proposed Development would be experienced in.

### Scenario 2

- 5.10.10. The addition of Scenario 2 to the baseline would lead to one significant effect occurring within the Leadhills & Lowther Hills SLA due to proximity to the consented schemes of Crookedstane and Lion Hill. This would result in a **Substantial** magnitude of change occurring to a small area resulting in a **Major (significant)** effect. No other Scenario 2 wind farms would influence the special qualities leading to a significant effect due to a combination of distance and screening from landform.

### Scenario 3

- 5.10.11. The addition of Scoop Hill to Scenario 3 would result in two **significant** effects of **Major** occurring within the Leadhills & Lowther Hills SLA and the Thornhill Uplands RSA. This would extend over a small area within these two LCTs resulting in a **Substantial** magnitude of change.

## Visual Amenity

### Viewpoints

#### Scenario 1

- 5.10.12. Of the 18 selected viewpoints that were identified to represent the general visual amenity throughout the study area, nine are predicted to receive significant effects. These include locations extending up to 9.5 km from the Proposed Development that obtain open views towards the proposed turbines. This would include nearby hill tops and views from within the valley containing the Daer Water to the west and north west of the Proposed Development. From these locations, the turbines would be viewed in conjunction with Clyde or Harestanes/Minnygap developments and extend turbines into the area between the operational sites. Turbines would be prominent and the change in view would be large resulting in **Substantial** to **Moderate** levels of magnitude of change. This would result in **Major – Moderate (significant)** effects for **High** sensitivity receptors.

#### Scenario 2

- 5.10.13. Eight of the viewpoints listed above are also predicted to receive a **Substantial** magnitude of change resulting in a **Major (significant)** effect when the Proposed Development is added to Cumulative Scenario 2. This is due to

the inclusion of Crookedstane and Lion Hill in views from each location but would occur within a small area close to the Proposed Development.

### Scenario 3

- 5.10.14. Six of the viewpoints listed above (VPs 8, 9, 10, 12, 13 and 17) are predicted to receive a **Substantial - Moderate** magnitude of change resulting in a **Major to Moderate (significant)** effect. This is due to the addition of Scoop Hill to the cumulative baseline in which the addition of the Proposed Development would be viewed in combination. This would be from elevated viewpoints in proximity to the proposed site.

### Residential Receptors

- 5.10.15. All five of the residential receptors assessed are predicted to receive a significant effect. This would be due to the openness of the view obtained from each property within 2 km of the proposed turbines and supporting infrastructure would be visible. None were identified as receiving an effect to the extent that the Proposed Development would be overbearing and result in it being an unattractive place to live.

### Settlements

- 5.10.16. Of the two settlements assessed, none were considered to receive a significant effect.

### Route Receptors

- 5.10.17. One route receptor has been assessed as receiving significant effects for all three cumulative scenarios. This includes the Southern Upland Way which passes close to the northern boundary of the Proposed Development. This route would receive close open views towards the Proposed Development which would occupy a considerable part of the view but for a relatively short section of the overall length of the walk. This would be experienced along side Clyde Wind Farm (Scenario 1), Crookedstane and Lion Hill Wind Farms (Scenario 2), and Scoop Hill Wind Farm (Scenario 3). Magnitude of change is predicted to be **Substantial** for a **High** sensitivity receptor resulting in a **Major (significant)** effect.

### Aviation Lighting

- 5.10.18. The addition of eight aviation lights mounted on turbines T1 / T2 / T6 / T7 / T10 / T14 / T15 / T17 would result in significant effects to two viewpoints, Hods Hill (VP12) and Queensberry Hill (VP17). This would result in a **Substantial** magnitude of change and a **Major (significant)** effect. This is due to their relatively close proximity to the Proposed Development combined with elevation where all eight lights would be visible at light intensities of 2000 candela during periods of poor visibility, reducing to 200 candela during clear spells during night time hours.

## Conclusion

- 5.10.19. The LVIA has considered several landscape and visual receptors and established that there would be several significant effects to both landscape and visual receptors. However, these would affect a relatively small number of landscape and visual receptors as a result of the Proposed Development overall. This is due firstly to the small number of landscape and visual receptors that are predicated to receive theoretical visibility of the Proposed Development. Secondly, higher ground surrounding the site restricts the extent of theoretical visibility experienced within the surrounding area, highlighted by the number of hill tops that have been assessed as significant in the viewpoint assessment. Generally, the introduction of the Proposed Development into this baseline of operational developments is mitigated by the prominent occurrence of operational developments or the landscape fit of the proposed development within the proposed site Proposed Development Area. Similarly, the introduction of the Proposed Development into the cumulative baseline of consented developments is substantially mitigated by the presence of consented developments such as Lion Hill and Crookedstane. Such mitigating effects are detailed throughout the LVIA and combined CLVIA.

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