

6 Landscape and Visual Amenity

Introduction

- 6.1 This chapter considers the potential effects of the NLEI ('the Development') on landscape character and views and visual amenity. Landscape and visual impact assessment (LVIA) is used to identify and assess the effects of change resulting from development, on both the landscape as an environmental resource in its own right, and on people's views and visual amenity. Landscape and visual assessments are separate, though related processes.
- 6.2 Effects on the landscape as a resource may be caused by changes to the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape. Effects on views and visual amenity as experienced by people, may be caused by changes in the appearance of the landscape resulting from the Development.
- 6.3 This chapter sets out the common baseline for the landscape and visual assessment, but assesses them separately, followed by an assessment of cumulative effects with other windfarm developments. The chapter is supported by appendices relating to viewpoint selection (**Appendix 6.1**), visualisation methodology (**Appendix 6.2**), and the residential visual amenity assessment (**Appendix 6.3**).
- 6.4 Other relevant chapters include **Chapter 3: Site Selection and Design Strategy**, **Chapter 4: Scheme Description** and **Chapter 10: Cultural Heritage**. Planning policies of relevance to this assessment are provided in **Chapter 5: Policy Context**.
- 6.5 The landscape and visual assessment (LVIA) was undertaken by MVGLA.

Scope of the Assessment

Effects Assessed in Full

- 6.6 The following effects have been assessed in full. The following key issues were identified at the scoping stage for consideration in the assessment:
- Direct effects during construction on the landscape character of the site (hereafter referred to as 'Development Area');
 - Direct effects during operation on landscape character and views of the Development Area;
 - Indirect effects during operation on landscape character and views across the study area towards the Development Area, including:
 - views from key viewpoint locations identified through consultation;
 - views from settlements and sequential routes;
 - Cumulative effects during operation on landscape character and views across the study area.

Effects Scoped Out

- 6.7 Where receptors, i.e. people, are unlikely to be affected by the Development, through having little or no theoretical visibility, or being distant from the Development (i.e. outwith the study area), potential effects on these receptors have been scoped out. The exception to this is where a number of long distance viewpoints requested by consultees have been retained to provide evidence of likely visibility from these locations, even though effects are unlikely to be significant.

The Development

- 6.8 The Development is described in full in **Chapter 4**, but the elements that have the potential to create landscape and visual effects include:
- 35 turbines each of 149m to blade tip;

- tracks, external turbine transformers and other ground level infrastructure elements e.g. turning heads;
- five borrow pits;
- onsite substation;
- five temporary construction compounds;
- forest felling and replanting (including riparian planting).

Assessment Methodology

Legislation and Guidance

Legislation

- 6.9 This assessment is carried out in accordance with the principles contained within the following legislation:
- Scottish Government (2014) Scottish Planning Policyⁱ;
 - Scottish Government (July 2013) Web Based Renewables Advice: Onshore Wind Turbinesⁱⁱ;
 - The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000ⁱⁱⁱ.

Guidance

- 6.10 This assessment is carried out in accordance with the principles contained within the following documents:
- Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition ('GLVIA3')^{iv};
 - SNH (2004) Topic Paper 6. Techniques and Criteria for Judging Capacity and Sensitivity^v;
 - SNH (2017) Visual Representation of Windfarms^{vi}
 - SNH (2014 and 2017) Siting and Designing Wind Farms in the Landscape^{vii};
 - SNH (2015) Spatial Planning for Onshore Wind Turbines – natural heritage considerations^{viii}.
 - SNH (2012) Assessing the Cumulative Effects of Onshore Wind Energy Developments^{ix}.

Consultation

- 6.11 In undertaking the assessment, consideration has been given to the scoping responses and responses to the Scottish Government's Gatecheck Stage One process, set out **Chapter 2: Approach to the EIA**, as well as other consultation undertaken as detailed in **Table 6.1**. Consultation included two meetings with SNH at which site selection, local sensitivities and potential viewpoints for assessment were discussed.
- 6.12 Consultation focussed on the selection of viewpoints for inclusion in the visual assessment, with a total of 50 different locations suggested and considered. The LVIA aims to assess the visual effects on a representative selection of viewpoints, and key routes and settlements, but does not assess an exhaustive list of locations. A summary of the consultation undertaken regarding landscape and visual matters is set out in the table below, with a full list of all potential viewpoint locations considered set out in **Appendix 6.1: Viewpoint Selection**.

Table 6.1: Consultation Responses

Consultee and Date	Issue Raised	Response/Action Taken
Dumfries and Galloway Council Landscape Architect 16 th March 2016	The LVIA should be undertaken in accordance with GLVIA3 (2013 ^{iv}) and with special particular reference to SHN's Siting and Design Guidance (2014 ^{vii}) and up to date visualisation guidance.	LVIA has been undertaken according to current guidance
	Reference should be made to the DGWLCS ^x in the LVIA in terms of the	The DGWLCS and the emerging updated document ^{xi} have been used as key references for the

baseline assessments, the sensitivities (summary and detail assessments), opportunities and constraints, and development guidance it sets out.	landscape assessment
The LVIA should fully assess all scenarios of potential cumulative effects in accordance with SNH guidance.	The cumulative assessment has been undertaken in accordance with the SNH 2012 guidance.
The proposal should be assessed against the potential impacts on the objectives of the Thornhill Uplands RSA designation and demonstrate the extent to which these can be addressed. They should also be assessed against LDP policy NE2 with respect to the landscape character and scenic interest for which the area has been designated.	The implications for designated landscapes have been considered in the LVIA. The LVIA considers the reasons for designation for the RSA, and how the Development will affect it.
Dumfries and Galloway Council's Technical Paper on Regional Scenic Areas ^{xii} is a key reference and should be considered in the LVIA.	The Technical Paper has been used as a key reference for the assessment of landscape implications for designated landscapes.
The effects on Drumlanrig Inventory Designed Landscape (IDL) and Eliock and Craigdarroch Non Inventory Designed Landscapes (NIDLs) should be assessed in accordance with policy HE6.	These designed landscapes have been considered in the context of policy HE6, and assessed in the Cultural Heritage assessment in Chapter 10 .
The detailed study area should be 15km, taking in Upper Nithsdale and the surrounding uplands.	The LVIA focuses on the detailed study area of 15km.
<p>The LVIA should address:</p> <p>Landscape:</p> <p>Host landscape character units. Surrounding LCTs / LCUs within 15km.</p> <p>Local landscape characteristics and any aspects of local distinctiveness, including any direct impacts and indirect on the setting and experience.</p> <p>The setting of villages: Wanlockhead, Sanquhar.</p> <p>The setting, value and experience of designated landscapes; notably Thornhill Uplands RSAs, Drumlanrig IDL, Eliock and Craigdarroch NIDL.</p> <p>Forestry and woodland areas, including fell and restock areas and phasing, and planting associated with restoration.</p> <p>Visual:</p> <p>Residential receptors: Wanlockhead, the Nithsdale settlements of Kirkconnel and Kelloholm, Sanquhar, Mennock, Carronbridge, Thornhill, Closeburn; dispersed settlement and properties around Upper Nithsdale, associated tributary glens, transitional upland slopes, such as around Sanquhar and Auchentaggart Moors.</p> <p>SUW long distance route, key tourist</p>	<p>These landscape receptors and aspects have been considered in the LVIA, and in Chapter 10 in the case of designated landscapes.</p> <p>The visual receptors have been considered in the LVIA, and represented with a selection of 24 viewpoints, taken from a long list of 50 suggested locations.</p>

	<p>route.</p> <p>Travel: A76 main road and key tourist route, and Dumfries / Glasgow rail from Sanquhar west and partially through Mid Nithsdale. Quiet / minor road to south of valley between Mennock and Kelloholm.</p> <p>Tourist receptors, arts and education projects: Wanlockhead Mining Museum, Sanquhar town, including Museum, retail and accommodation facilities, Crawick Artland.</p> <p>Walking: Upper Nithsdale, the Lowther Hills, and Durisdeer are important areas for walking, including the SUW; a number of other core paths, promoted paths and heritage trails; quiet roads and lanes; and some key summits and high level viewpoints, Lowther, East Lowther Hills, and Cairnkinna Hills.</p> <p>Other recreation: horse riding, Sanquhar Golf Course, Drumlanrig Castle.</p> <p>Places of work: farmland, schools, mining areas, shopping streets and areas in Wanlockhead, Sanquhar, Kirkconnel and Kelloholm, Thornhill.</p> <p>Views from and to designated landscapes: Thornhill Uplands RSA, Drumlanrig Castle IDL, Eliock and Craigdarroch NIDLs.</p>	
	Provided comment on the viewpoints included within the Scoping Report and included a list of additional requested viewpoints.	The additional viewpoint locations requested by D&G were all considered for inclusion in the LVIA, as part of a long list of 50 possible viewpoint locations. The 24 viewpoints selected for inclusion as part of the LVIA best represent the wide range of visual receptors and viewing experiences.
	Visualisations must be provided in accordance with SNH (2014 ^{vi}) guidance and LI (2011 ^{iv}) guidance. Cumulative wirelines, with other existing, consented, in-planning windfarms / wind turbines labelled / numbered, and photomontages / cumulative photomontages, with existing and consented windfarms / wind turbines labelled / numbered to be provided in LVIA.	Visualisations will be produced according to SNH Representation of Wind Farms (December 2014) and LI (2011) guidance.
	Stated that inclusion of private residential properties is recommended within 2km of schemes as part of a residential visual amenity study.	The LVIA includes consideration of likely close views from locations such as residential properties within 2km of the nearest turbine (see Appendix 6.3).
<p>Scottish Natural Heritage (SNH)</p> <p>24 March 2016</p> <p>Consultation meeting following pre-scoping consultation in January</p>	<p>Eight further viewpoint locations suggested in response to an initial list of viewpoints.</p> <p>Wireline visualisations to represent the sequential experience of the Southern Upland Way (SUW).</p>	<p>Four of the locations suggested by SNH have been included in the final list for assessment as part of the LVIA, with agreement from SNH.</p> <p>A series of wirelines will be used to represent sequential views from along the SUW (see Figures 6.35-6.39).</p>
<p>9 June 2016</p> <p>Response to viewpoint list</p>	Content with final viewpoint list	Noted

17 October 2016 Meeting	Concerns regarding: <ul style="list-style-type: none"> suitability of site; sensitivity of the landscape around Leadhills and Wanlockhead; effects of turbines on ridge tops exaggerating vertical scale; 'respite' between windfarms for SUW; Sensitivity of the Mennock Pass; Extent of likely significant landscape effects. 	These issues are addressed in the LVIA and CLVIA.
South Lanarkshire Council Scoping Response	Requested consideration of Crawfordjohn and Leadhills Requested consideration of viewpoints in Gelpsin, Elvanfoot and Biggar, and potentially Green Lowther as an alternative to Lowther Hill. Up to date guidance should be used in LVIA and CLVIA Requested consideration of the Leadhills and Lowther Hills SLA	Crawfordjohn is considered in the assessment, there is no theoretical visibility from Leadhills. Viewpoints considered during selection process (Appendix 6.1), and found to have limited visibility. Lowther Hill (VP6) used to represent view from Green Lowther. Current guidance is used for the assessment and production of visualisations (see methodology section) The implications of the findings of the LVIA and CLVIA for the SLA are considered
South Lanarkshire Council Post scoping viewpoint consultation 29 June 2016, 30 June 2016,	Requested an additional viewpoint between Crawfordjohn and Leadhills Requested that the Crawfordjohn viewpoint be relocated to north of the village. Requested inclusion of viewpoint at B740/B7080 junction; and B797 overbridge of M74 or B797 between M74 and Lettershaws	ZTV indicates minimal visibility (1 tip) between Crawfordjohn and Leadhills, this route has been considered in the sequential assessment. Viewpoint relocated (VP13) B740/B7080 junction included as VP14. B797 overbridge of M74 and B797 between M74 and Lettershaws have minimal theoretical visibility, and M74 has been considered in the sequential assessment.
South Lanarkshire Council Post scoping viewpoint consultation 29 July 2016	Confirmed acceptance of final viewpoint list.	Noted
East Ayrshire Council 1 June 2016 Post scoping viewpoint consultation	Content with final viewpoint list	Noted

Study Area

- 6.13 In defining the study area for the assessment, different extents of study area were used as appropriate for different aspects of the assessment.
- 6.14 For LVIA, guidance^{vi} suggests that for turbines of over 130m to blade tip, an initial study area of 40km radius should be considered, followed by scoping down the study area to focus on potential significant effects. The study area was reduced to a 'wider study area' of 35km radius for the purpose of the broader landscape context, and a 'detailed study area' of 15km radius for the purpose of detailed

assessment. The wider study area and the detailed study area, as shown on **Figure 6.1**, both include land within three local authorities; Dumfries and Galloway, South Lanarkshire and East Ayrshire.

- 6.15 Identification of the cumulative assessment study area comprised a review of windfarm development across an area of 60km radius from the outermost turbines of the Development, in accordance with relevant guidance^{ix}. Cumulative data has been collected for schemes within 25km of the Development, but the assessment focusses on the cumulative relationships of the Development with windfarms within the detailed study area (15km), which are likely to form part of the key cumulative interactions with the Development.
- 6.16 The study area used in the assessment of effects on residential visual amenity focussed on properties within approximately 2km of the development turbines.

Desk Based Research and Data Sources

- 6.17 Desk studies were undertaken to provide information about the baseline landscape and visual resource and to inform field work and the assessment of effects. For this work, data sources included OS topographic and geological maps, as well as references specific to designated areas and landscape character.
- 6.18 The following data sources have informed the assessment:
- SNH (1994) Dumfries and Galloway Landscape Assessment^{xiii};
 - South Lanarkshire Council (2010) South Lanarkshire Landscape Character Assessment^{xiv};
 - SNH (1998) Ayrshire Landscape Character Assessment^{xv};
 - Dumfries and Galloway Council (2011) Dumfries and Galloway Wind Farm Landscape Capacity Study^x and the emerging update (consultation draft dated August 2016^{xi});
 - East Ayrshire Landscape Wind Energy Capacity Study^{xvi};
 - South Lanarkshire Landscape Capacity Study for Wind Energy^{xvii};
 - Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley^{xviii}
 - Dumfries and Galloway (2013) Technical Paper: Regional Scenic Areas^{xii};
 - Countryside Commission for Scotland (1978) Scotland's Scenic Heritage^{xix};
 - Historic Scotland (2007) Inventory of Gardens and Designed Landscapes (on website)^{xx 1};
 - Local Authority Development Plans to provide information on designated sites (see **Chapter 5**);
 - Council planning portals to provide cumulative data^{xxi}.

Field Survey

- 6.19 Field survey work was carried out during several visits under differing weather conditions, between December 2015 and September 2016. Records were made in the form of field notes and photographs. Field survey work included a walk-over of the Development Area, visits to viewpoints, and extensive travel around the study area to consider potential effects on landscape character and on experiences of views seen from routes and settlements.

Graphics Production

- 6.20 Graphics and visualisations are provided to support the assessment of effects. Visualisations for the assessment viewpoints have been produced in accordance with SNH visualisation guidance set out in Visual Representation of Wind Farms^{vi}. The methodology for graphics production is set out in **Appendix 6.2: Visualisation Methodology**.

Assessment Structure

- 6.21 This section sets out the methodology used for the LVIA. As noted above, consideration of potential effects on landscape and visual amenity are related but distinct components of LVIA². The methodologies

¹ Historic Gardens and Designated Landscapes are assessed in Chapter 10, but are used in this assessment as an indicator of value placed on the landscape.

² This distinction is emphasised and clearly defined in GLVIA3.

used to assess potential landscape and visual effects are broadly similar, but in order that the differences are clear, the methodologies for assessing significance for landscape and visual effects set out separately. However the principles underpinning the evaluation of the level of significance is the same for evaluating landscape, visual and cumulative effects.

Significance

- 6.22 GLVIA3 explains that conclusions with respect to significance of effect rely on linking judgements about the sensitivity of the receptor and about the magnitude of the effect (GLVIA3^{iv}, paragraph 3.24). Both sensitivity and magnitude are evaluated by considering multiple factors which underlie the 'nature of the receptor' and the 'nature of the effect'. This is illustrated in Figure 3.5 of GLVIA3.
- 6.23 Multiple factors require to be judged to evaluate 'sensitivity' which in this assessment is expressed as *high, medium or low* and multiple factors require to be judged to evaluate 'magnitude' which in this assessment is expressed as *large, medium, small* (and *negligible*).
- 6.24 Following the steps of judging 'sensitivity' and 'magnitude', a further judgement is required evaluating level of predicted effect which in this assessment is expressed as *major, moderate, minor* and *negligible* and this assessment considers moderate and major effects to be 'EIA significant'.
- 6.25 For each potential effect that is being assessed this process is followed and described in narrative, and final judgements are explained. Generally speaking effects on high or medium sensitivity receptors of large magnitude are significant, as are effects of medium magnitude on high sensitivity receptors. Effects of medium magnitude on receptors with medium sensitivity may or may not be significant, and careful balancing is required. Likewise an effect of large magnitude on a low sensitivity receptor may be significant in some circumstance and not in other situations and the difference could be the result of level of value or subtle differences in geographic extent or duration.
- 6.26 The LVIA considers the potential effects of the addition of the Development to the existing landscape, against a baseline that includes existing windfarms and those under construction as of February 2017 (see **Table 6.3** in the baseline section below). The cumulative landscape and visual impact assessment (CLVIA), set out later in the chapter, considers the potential changes in effects with the addition of the Development, relating to a baseline landscape that includes windfarms that may or may not be present in the landscape in the future (e.g. consented schemes, or undetermined applications).
- 6.27 The construction phase elements of the Development, i.e. borrow pits and temporary construction compounds are considered to be short-term elements as they will be reinstated at the end of the construction phase. The operational phase elements of the Development, i.e. turbines, tracks, substation, other infrastructure, and forest changes are considered to be long term elements as they will be in situ for 25 years before being removed during decommissioning, or repowered if a fresh application for consent is submitted and approved at the time.

Identification of Landscape Effects

- 6.28 Judging the significance of landscape effects requires consideration of the nature of the landscape receptors (sensitivity) and the nature of the effect on those receptors (magnitude). GLVIA3^{iv} states that the nature of landscape receptors, commonly referred to as their sensitivity, should be assessed in terms of the susceptibility of the receptor to the type of change proposed, and the value attached to the receptor. The nature of the effect on each landscape receptor should be assessed in terms of its size and scale, geographical extent, duration and reversibility. These aspects are brought together, to form a judgement regarding the overall significance of effect. The following sections set out the methodology used to evaluate landscape effects.

Sensitivity of Landscape Receptors

- 6.29 The sensitivity (or 'nature') of landscape receptors is assessed in terms of the susceptibility of the receptor to the type of change proposed and the value attached to the receptor.
- 6.30 The susceptibility of the landscape relates to "*the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue³ consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies*" (GLVIA3^{iv}, Page 88).

³ Undue can be interpreted as 'disproportionate'.

- 6.31 Aspects that inform judgements of landscape susceptibility to the type of development being proposed include landscape scale, landform, skylines, pattern and complexity, inter-visibility with adjacent landscapes, settlement and man-made influences, and perceptual influences, as can be illustrated in **Table 6.2**.

Table 6.2: Aspects to determine susceptibility of the landscape to wind turbines

Characteristic/attribute	Aspects indicating reduced susceptibility to wind energy development	↔	Aspects indicating greater susceptibility to wind energy development
Scale	Large scale	↔	Small scale
Landform	Absence of strong topographical variety - featureless, convex or flat/plateau	↔	Presence of strong topographical variety or distinctive landform features
Landscape pattern and complexity	Simple Regular or uniform	↔	Complex Rugged and irregular
Settlement and man-made influence	Presence of contemporary structures e.g. utility, infrastructure or industrial elements	↔	Absence of modern development Presence of small scale, historic or vernacular settlement
Skylines	Non-prominent /screened skylines Presence of existing modern man-made features	↔	Distinctive, undeveloped skylines Skylines that are highly visible over large areas or exert a large influence on landscape character Skylines with important historic landmarks
Inter-visibility with adjacent landscapes	Little inter-visibility with adjacent sensitive landscapes or viewpoints	↔	Strong inter-visibility with sensitive landscapes Forms an important part of a view from sensitive viewpoints
Perceptual aspects	Close to visible or audible signs of human activity and development	↔	Remote from visible or audible signs of human activity and development

- 6.32 Published landscape capacity studies covering Dumfries and Galloway and South Lanarkshire have also been used to inform the evaluation of sensitivity of the landscape receptors. The review, set out in the landscape baseline section below, includes an evaluation as to the relevance of the publication to the assessment (e.g. consideration of the purpose and scope of the published studies and whether they have become out of date).
- 6.33 The value of a landscape is recognised as being a contributing factor to the sensitivity of landscape receptors. Value is informed with reference to:
- a review of designations upon the landscape and the level of policy importance that they signify (such as landscapes designated at international, national, local or community level); and
 - other criteria that indicate value, including landscape quality, scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects, and artistic associations.
- 6.34 It should be noted that whilst landscape designations at an international or national level are likely to be accorded the highest value, it does not necessarily follow that such landscapes all have a high susceptibility to all types of change, and conversely, undesignated landscapes also have value and susceptibility to change (GLVIA3^{iv}, Page 90). There may be a complex relationship between the value attached to a landscape and its susceptibility to change. Therefore the rationale for judgements on the sensitivity of the landscape needs to be clearly set out for each receptor.
- 6.35 Susceptibility and value are combined to form a judgement as the overall sensitivity of the landscape receptor, recorded as high, medium or low.

Magnitude of Landscape Change

- 6.36 Judgements regarding the magnitude of landscape change consider the size, scale, and geographical extent of the landscape effect, and its duration and reversibility.
- 6.37 For landscape elements/features, the size and scale of change depends on the extent of existing landscape elements that will be lost or changed, the proportion of the total extent that this represents (i.e. rarity) and the contribution of that element to the character of the landscape. For landscape character areas/types, the size and scale of change depends on the degree to which the character of the landscape is changed through alteration of the key characteristics of the landscape.
- 6.38 Given that windfarms currently exist in the study area, the scale and size of change also considers the relationship between the Development and other windfarms in the landscape, including consideration of:
- the arrangement of windfarms in the landscape, e.g. developments that are clustered or dispersed;
 - the position of the windfarms in the landscape, e.g. in similar or differing landscape or topographical contexts;
 - how the proposal fits with the pattern of windfarm development in the baseline, and whether it intensifies the presence of windfarms or fills a gap, leading to a total effect that is greater than the sum of its parts, e.g. creating a 'windfarm landscape'.
- 6.39 The geographical extent of landscape change is the area over which the landscape change being described will occur. Geographical extent is described as being limited to the site, to the local area, or a wider area, which is defined in each case. Some landscape effects can affect whole landscape character areas/types.
- 6.40 The duration of landscape changes can be short-term (generally lasting 0-5 years, e.g. limited to during construction), medium-term (generally lasting 5-10 years) or long-term (generally lasting over 10 years, including changes that will persist for the 25 year operational lifespan of the Development).
- 6.41 Reversibility is related to whether the change can be reversed at the end of the phase of development under consideration (i.e. at the end of the construction or at decommissioning). Operational effects related to the presence of turbines are considered to be reversible as they will be removed during decommissioning.
- 6.42 Size/scale, geographical extent and duration/reversibility are combined to form a judgement as to the overall magnitude (nature) of the landscape change, recorded as high, medium or low.

Judging the Levels of Landscape Effect and Significance

- 6.43 In judging significance, sensitivity of receptors has to be considered in combination with predicted magnitude of change. As set out above, sensitivity and magnitude are evaluated by considering a range of aspects. Considering all aspects in a multifaceted assessment, and assigning more or less weight to individual aspects as appropriate, the overall level of effect is identified. This assessment of the level of effect draws on fieldwork, consultation and guidance provided in GLVIA3^{iv}.
- 6.44 Four levels of effect are used in this assessment, which identify whether effects are significant in the context of EIA regulations. Levels are described as:
- Significant (major or moderate)
 - Not Significant (minor or negligible)

Identification of Visual Effects

- 6.45 Visual effects are experienced by people from different locations around the study area, at static locations (for example settlements or viewpoints) and transitional locations (such as sequential views from routes). Visual receptors are the people who will be affected by changes in views at these places, and they are usually grouped by what they are doing at these places (for example residents, motorists, recreational users etc.).

Sensitivity of Visual Receptors or Views

- 6.46 The sensitivity (or 'nature') of visual receptors is assessed in terms of the susceptibility of the receptor to the type of change proposed and the value attached to the receptor.
- 6.47 The susceptibility of visual receptors to changes in views/visual amenity is related to the occupation or activity of people experiencing the view and the extent to which their attention is focused on views

(GLVIA3^{iv}, page 113). Viewers of higher susceptibility to changes in views are those whose attention or interest is focused on their surroundings, including:

- communities where views contribute to the landscape setting enjoyed by residents;
 - people engaged in outdoor recreation (including users of public rights of way whose interest is likely to be focused on the landscape); and
 - visitors to heritage assets, advertised viewpoints or other attractions where views of surrounding are an important contributor to experience.
- 6.48 Viewers of lower susceptibility to changes in views include travellers on road, rail or transport routes (not recognised as scenic routes); people engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views; people at their place of work whose attention is not on their surroundings.
- 6.49 Recognition of the value of a view is determined with reference to:
- planning designations (such as designated landscapes at a local/regional or national level);
 - importance in relation to heritage assets (such as designed views recorded in citations of designated landscapes); and
 - indicators of the value attached to views by visitors, for example through appearances in guide books or on tourist maps, provision of facilities for their enjoyment and references to them in literature and art.
- 6.50 The sensitivity of views and visual receptors may involve a complex relationship between a visual receptor's (people's) susceptibility to change and the value attached to a view. Therefore the rationale for judgements of sensitivity of visual receptors must be clearly set out for each receptor in relation to both susceptibility and value.
- 6.51 Susceptibility and value are combined to form a judgement as the overall sensitivity of the visual receptor, recorded as high, medium or low.

Magnitude of Visual Change

- 6.52 Judgements regarding the magnitude of changes to views consider the size and scale, and geographical extent of the visual effect, and its duration and reversibility.
- 6.53 The size and scale of a visual change depends on:
- the scale of the change in view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed Development;
 - the degree of contrast or integration of any new features or changes in the view with the existing elements in the view and their characteristics in terms of form, scale and mass, line, height, colour and texture; and
 - the nature of the view of the proposed Development, in terms of the relative amount of time over which it will be experienced along routes and whether views will be full, partial or glimpses.
- 6.54 All changes to views are considered as they will occur in winter conditions⁴, being the maximum case situation with minimal screening by vegetation and deciduous trees. Note that wireframes and Zone of Theoretical Visibility maps (ZTVs) are calculated on the basis of bare ground and therefore also demonstrate the maximum extent of visibility possible, in the absence of buildings or vegetation.
- 6.55 The scale of change also considers the relationship between the Development and other windfarms in the landscape, including consideration of:
- the arrangement of windfarms in the view, e.g. developments seen in one direction or part of the view (combined views), or seen in different directions (successive views in which the viewer must turn) or developments seen sequentially along a route;
 - the relationship between the scale of the windfarms, including turbine size and number;
 - the position of the windfarms in the view, e.g. on the skyline or against the backdrop of land;

⁴ Winter conditions without snow cover.

- the distances between windfarms, and their distances from the viewer, and
- how the proposal fits with the pattern of windfarm development visible.

- 6.56 The geographical extent of visual changes records the extent of the area over which the changes will be visible e.g. whether this is a unique viewpoint from where the proposed Development can be glimpsed, or whether it represents a large area from which similar views are gained. Some viewpoints used in the assessment have been selected to represent typical views from wider areas; others have been selected as specific views. The geographical extent of the visual effect is defined in each case.
- 6.57 The duration of changes to views can be short-term (generally lasting 0-5 years, e.g. limited to during construction), medium-term (generally lasting 5-10 years) or long-term (generally lasting over 10 years, including effects that will persist for the 25 year operational lifespan of the Development). Reversibility is related to the duration of the change, with permanent effects identified for views which remain altered after decommissioning.
- 6.58 Size/scale, geographical extent and duration/reversibility are combined to form a judgement as to the overall magnitude of the visual change, recorded as high, medium or low.
- Judging the Levels of Visual Effect and Significance*
- 6.59 As for landscape effects, visual effects are judged on the combined aspects of sensitivity and magnitude of change. In the same way, levels of effect used are:
- Significant (major or moderate)
 - Not Significant (minor or negligible)

Assessing Cumulative Effects

- 6.60 The methodology for the CLVIA follows that of the LVIA as set out above, as the LVIA baseline includes windfarms. The key difference between LVIA and CLVIA is that some of the windfarms considered in the CLVIA do not currently exist. The CLVIA includes windfarms that are consented but not yet built, and those that are undetermined applications (including those under appeal). These possible future developments are assumed to be present for the purposes of the CLVIA. Although not standard practice, the scoping stage Harryburn Windfarm is included in the cumulative assessment following agreement with consultees and given the likely similar submission and consenting timescales of the two proposals.
- 6.61 In the consideration of cumulative effects, particular attention is given to the relationships between windfarms in the baseline for each scenario, and how those relationships will change with the addition of the proposed Development.
- 6.62 The cumulative assessment reports on the change in effect should the baseline be altered to the cumulative situation, i.e. whether or not the effect of the introduction of the Development to the cumulative baseline will differ from what was identified for the LVIA assessment. If there is no cumulative effect, the level of effect of introducing the development will be as described in the LVIA assessment (i.e. no cumulative effect does not equate to no effect on the receptor, but that there will be no additional effect in the scenario being considered).

Assessment Limitations

- 6.63 Limitations to the LVIA include a reliance on bare-ground modelling for wireframes and ZTVs used in graphics, which does not take account of potential screening by buildings and vegetation. The theoretical visibility indicated by the bare-ground models is therefore an over-estimation of visibility. Actual visibility is described for receptors, and is illustrated in photomontages.
- 6.64 Whilst this issue has been identified, it is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant effects on landscape and visual amenity.

Existing Conditions

The Proposed Development Area

- 6.65 The Development Area (shown on **Figure 4.1**) is located in the North Lowther Hills, between the Crawick Water valley to the west and the Mennock Water to the south-east, and lies to the north-east of

Sanquhar and to the west of Wanlockhead. The Development Area is contained within Dumfries and Galloway (the border with South Lanarkshire forms the north-western boundary of the Development Area).

- 6.66 The Development Area includes a number of interlocking broad rounded ridges and incised valleys, typical of the Southern Uplands, including: the Conrig Hill (435m AOD) to Willowgrain Hill (515m AOD) ridge; the Brown Hill (476m AOD) to Bail Hill (540m AOD) ridge; the Stood Hill (587m AOD) to Duntercleuch Rig (377m AOD) and Wedder Dod (445m AOD) ridge; and the Snarhead Hill (511m AOD) to Slough Hill (433m AOD) ridge. The Development Area also includes the valleys between these ridges, and the south-western slopes down towards Auchentaggart Moor. The main valleys include the Mennock Pass (the valley of the Mennock Water), the Crawick Water Valley, the Glendyne Burn valley, the Cog Burn valley and the Wanlock Water valley. The highest point within the Development Area is Stood Hill at 587m AOD, to the west of Wanlockhead. The south-western area of the Development Area descends to approximately 200m AOD.
- 6.67 The majority of the Development Area lies within the Southern Upland Landscape Character Type (LCT) as set out in the Dumfries and Galloway Landscape Character Assessment published by SNH ^{xiii} (see **Figure 6.5**). This is a landscape characterised by large smooth domed or slightly conically shaped hills and covered by coarse grassland and heather moorland in the highest areas. The south-western part of the Development Area is covered by the Upper Dale LCT, and the south-eastern part lies within the Upland Glens LCT. The Dumfries and Galloway Landscape Wind Farm Capacity Study (2013) contains further description of these LCTs and information in relation to the sensitivity of the Dumfries and Galloway landscape, and is used as a background document for the assessment. The landscape character assessments and sensitivity/capacity studies that cover the wider study area, including parts of South Lanarkshire, East Ayrshire and the Scottish Borders, are also used as sources of information for the assessment.
- 6.68 The Development Area, at a local level, largely conforms to the descriptions of the landscape provided in these documents. The topography is predominantly undulating upland with deep incised valleys. There are areas of coniferous plantation in the western edge of the Development Area, generally on north facing slopes.
- 6.69 The land cover of the Development Area is predominantly open moorland used for rough grazing, with small areas of commercial forest plantation in the north-western part. The land cover is described in more detail in **Chapter 8: Ecology**.

The Wider Study Area

- 6.70 The Development Area is located in the Lowther Hills area of the Southern Uplands, a hill range which extends across Dumfries and Galloway and other parts of southern Scotland. Much of the wider study area is contained within the Southern Uplands, although it extends south-east to lower landscapes around Dumfries. The largest scale hills within the study area include Green Lowther (732m AOD), Queensberry (697m AOD), Hart Fell (808m AOD), Tinto Hill (707m AOD), Cairn Table (593m AOD), Blackcraig Hill (70m AOD), Cairnsmore of Carsphairn (797m AOD), Corse Hill (580m AOD), Benbrack (580m AOD) and Cairnkinna Hill (552m AOD). The major valleys within the study area are Nithsdale, Annandale and the Glenkens to the south, and the upper Ayr and Clyde valleys to the west and north respectively.
- 6.71 As a result of the topography of the area, views across the hills at a high level are often extensive, whilst views within the steep sided valleys can be very contained within visual envelopes, particularly where the valleys themselves are wooded, winding and narrow, such as experienced along the Crawick Water valley. Views from broader valleys and dales can be extensive, towards hills that form distant horizons.
- 6.72 Across the wider study area (35km), the land use is varied. On the higher ground, for much of the study area, land cover is typified by open grassland, moorland and bog, with some extensive areas of forest. In contrast, settled and farmed valleys have a more varied land cover and a smaller landscape scale.
- 6.73 The closest settlement to the Development is Wanlockhead, with Leadhills, Mennock, Sanquhar, Kirkconnel, Crawfordjohn, Elvanfoot, Crawford, Abington, Douglas, Glespin and Carronbridge within approximately 15km. Larger settlements in the wider study area include New Cumnock, Cumnock, Dalmellington, Lesmahagow, Lanark, Biggar, Moffat and Thornhill.

Windfarms, Communications and Infrastructure

6.74 There are currently several existing windfarms in the detailed study area (15km), and others that are currently under construction (as of February 2017). These are considered as part of the baseline for the LVIA, and are listed in **Table 6.3** and shown on **Figure 6.8**. Consented windfarms and undetermined proposals are included in the CLVIA baseline, and listed in that section.

Table 6.3: Windfarms within 15km considered as part of the baseline for the LVIA

Windfarm	Status (February 2017)	Number of turbines	Turbine tip height (m)	Distance ⁵ (km)
Sunnyside	existing	2	62	5
Andershaw	existing	14	120	7
Middle Muir	construction	15	152	7
Clyde	existing	152	126.5	11
Whiteside	construction	10	121.2	11
Sanquhar	construction	9	130	12
Galawhistle	existing	22	110	13
Hagshaw Hill Phase1	existing	26	55.5	14
Hagshaw Hill Phase2	existing	20	80	14
Hare Hill Phase1	existing	20	66	15

6.75 The pattern of windfarm development is one of clusters of turbines on different parts of the southern upland hill range, as illustrated by **Figure 6.7** which shows schemes within 15km of the Development. These clusters include Clyde Windfarm; the Hagshaw Group (Hagshaw Hill phases 1 and 2, Galawhistle, Nutberry); the Andershaw-Middle Muir group; and the south Nithsdale group (Hare Hill phases 1 and 2, Sanquhar and Whiteside). Further away to approximately 25km, Harestanes, Minnygap and Dalswinton windfarms are located in the Ae forest, Wether Hill and Windy Standard are located to the south-west, and Bankend Rig and Dungeval are located to the north-west.

6.76 The valleys across the study area often form communication routes, with the key communications corridors (with roads, railways, pylon lines etc), running north - south across this part of the Southern Uplands being Nithsdale, Annandale to the Upper Clyde valley and the Glenkens. Smaller valleys around the Development Area that form important communication corridors for local people include the Crawick Water valley from Sanquhar in Nithsdale via Crawfordjohn to the Upper Clyde valley (the B740), the Mennock Pass between Mennock in Nithsdale via Wanlockhead and Leadhills to Abington in Annandale (the B797), and the Dalveen Pass from Carronbridge in Nithsdale to Elvanfoot in the Upper Clyde valley (the A702). The Southern Upland Way and other paths also form routes through the landscape, used principally for recreation.

6.77 Telecommunications infrastructure is also noticeable in the landscape around the Development Area, including the NATS 'golf ball' dome on Lowther Hill, the collection of masts on Green Lowther, and other masts on Todholes Hill above Kirkconnel, Craighead Hill and Castle Hill by Abington. Transmission scale overhead electricity lines are carried by steel towers (pylons) through Annandale and the Upper Clyde valley and the Glenkens, and railways run along Annandale and the Upper Clyde Valley (the West Coast Mainline) and along Nithsdale (Dumfries to Kilmarnock).

6.78 The Leadhills and Wanlockhead area has a history of lead mining and the landscape around these settlements is greatly influenced by former mine workings, with excavations, bings, former buildings, structures such as the Beam Engine at Wanlockhead, and the former lead carrying railway that runs through Leadhills being notable. Part of the valley around Wanlockhead is a Scheduled Monument, and other industrial heritage features are designated as described in **Chapter 10**.

⁵ Distance is measured between the closest turbines of the Development to the closest turbine of the other windfarm.

Designated Landscapes in the Study Area

6.79 The proposed Development Area lies partly within the Thornhill Uplands Regional Scenic Area (RSA), and adjacent to the Leadhills and Lowther Hills Special Landscape Area (SLA), although no elements of the proposed development lie within the SLA. In addition, there are a number of designated landscapes within the wider study area (35km), including National Scenic Areas (NSAs) and locally designated RSAs and SLAs, which contribute to landscape value across the study area. The designated landscapes are shown in **Figure 6.4** and are listed below.

6.80 National Scenic Areas (NSAs)

- Upper Tweeddale NSA (c.28km north-east of the Development Area)

6.81 Locally designated areas

- Thornhill Uplands RSA (includes part of the Development Area)
- Moffat Hills RSA (c.20km east)
- Galloway Hills RSA (c.25km south-west)
- Terregles Ridge RSA (c.30km south)
- Torthorwald Ridge RSA (c.30km south)
- Leadhills and Lowther Hills SLA (adjacent to the north-east boundary of the Development Area)
- Douglas Valley SLA (c.10km north)
- Upper Clyde Valley and Tinto SLA (c.12km north-east)
- Middle Clyde Valley SLA (c. 25km north)
- Pentland Hills and Black Mount SLA (c.30km north-east)
- East Ayrshire SLA (c.10km west)
- Tweedsmuir Uplands SLA (c.18km east)

6.82 Gardens and Designed Landscapes of cultural importance are designated in Historic Environment Scotland's *Inventory of Gardens and Designed Landscapes in Scotland*⁶. While these are assessed in the Cultural Heritage chapter (**Chapter 10**), they are considered in the LVIA as contributing to landscape value.

6.83 In addition to the designated landscapes listed above, SNH has identified Wild Land Areas across Scotland⁷, one of which lies within the study area, the Talla-Hart Fell area, approximately 20km east of the Development Area.

Climate and Weather Conditions

6.84 In addition to the physical features of the landscape, climate and weather conditions affect perception and experience of the landscape. The Development Area is located on the Southern Uplands hill range, and can therefore expect frequent wet, cloudy conditions, often with deep snow on the hills in winter. However, Scotland can also have periods of excellent visibility, as the greater part of the country is remote from the more industrial and populous areas of Great Britain. However, these conditions are generally experienced for a limited time, due to the prevailing climatic influences.

Landscape Baseline

Landscape Character Assessments of the Study Area

6.85 The landscape character assessments carried out on behalf of SNH between 1996-1999 have been superseded by more recent studies carried out on behalf of Local Authorities, based on the original SNH reports, often using the same units of landscape, but generally including additional advice on landscape sensitivity and/or capacity. Those that cover the study area include:

- Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWLCS x)
- East Ayrshire Landscape Wind Energy Capacity Study ^{xvi}

⁶ Historic Scotland (2007) Inventory of Gardens and Designed Landscapes in Scotland, website: <http://portal.historic-scotland.gov.uk/designations>

⁷ SNH (2014) Wild Land Areas 2014.

- South Lanarkshire Landscape Capacity Study for Wind Energy ^{xvii}
- Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley ^{xviii}

- 6.86 The DGWLCS covers the Development Area. It was prepared in 2011⁸ and sought to identify the capacity of Dumfries and Galloway to accommodate wind energy. This document was used to inform the previous Interim Planning Policy (IPP)^{xxii} and is referred to in the Local Development Plan (LDP) as an appendix to the Supplementary Planning Guidance^{xxiii}. The DGWLCS was adopted by DGC as statutory Supplementary Guidance alongside Supplementary Guidance, Part 1 Wind Energy Development: Development Management Considerations.
- 6.87 The DGWLCS, defines 'capacity' (page 8) as '*the degree to which a particular landscape character type or area is able to accommodate change without significant effects..*'. This definition does not recognise that all commercial scale wind energy developments will have significant landscape effects. It therefore does not in practice help with identifying what size and volume of wind energy development is possible. Given this limitation, and that the Scottish planning policy context has moved on since that study was prepared, it is considered that the DGWLCS should be treated as a study of relative sensitivity of different landscapes to development of different scales. As a sensitivity study, it provides detailed information, and is a more comprehensive and up to date study than the SNH Landscape Character Assessment ^{xiii}. It is therefore used as an important source of background information to inform judgements about landscape sensitivity in this assessment. The DGWLCS does not, as clarified by the document itself, provide a tool for assessing whether or not there is capacity in the landscape for any given development.
- 6.88 The update to the DGWLCS (DGWLCS update 2016 ^{xi}) uses the same definition of capacity, but introduces an additional 'very large' typology of turbines over 150m. Not all LCTs are discussed in the 2016 study, only those which are affected by changes in the cumulative baseline since 2011. The Lowthers unit of Southern Uplands LCT is not included in the 2016 update.
- 6.89 Other capacity studies that cover the wider study area have been used as sources of information relating to landscape sensitivity.

Landscape Receptors

- 6.90 The landscape assessment focuses on Landscape Character Types (LCTs) that occur within 15km of the Development Area, with potential views of the Development as identified by the zone of theoretical visibility (ZTV) mapping. They include:
- Southern Uplands: Dumfries and Galloway LCT 19, South Lanarkshire LCT 13
 - Southern Uplands Leadhills: SL 13C
 - Rolling Moorland: SL 7
 - Foothills: D&G 18, SL 10
 - Upland Glens: D&G 10, SL 14
 - Upland River Valley: SL 8
 - Upper Dale: D&G 9
- 6.91 Southern Uplands with Forest (D&G 19a, SL 13A), Southern Uplands with Wind Farm (SL 13B), Plateau Moorlands (Ayrshire 19, SL 6), Plateau Moorlands with Forest Ayrshire 20) Rolling Moorland with Forest (SL 7A), Rolling Moorland with Wind Farm (SL 7B), Upland Fringe (D&G 16), Broad Valley Upland (SL 9), Upper River Valleys (Ayrshire 10), Upland River Valley Incised (SL 8A), and Upland River Valley with Opencast Mining (SL 8B) have limited theoretical visibility of the proposed development within 15km, and are therefore not considered further.
- 6.92 Baseline descriptions for LCTs are contained in the assessment section below.

Visual Amenity Baseline

- 6.93 As a result of the topography of the area, with rounded hills with steep side slopes and incised valleys, views from hills are often extensive, whilst views within the steep sided valleys can be very contained,

particularly where the valleys themselves are wooded, winding and narrow, such as experienced along the Mennock Pass. This pattern is illustrated with the ZTV maps in **Figures 6.1-6.3**.

- 6.94 The visual amenity of the study area as seen by people is assessed using representative viewpoints, as well as considering views from settlements and along sequential routes. The baseline description of the existing views at these locations is provided for each in the assessment section below, and visualisations are provided in **Figure 6.11** onwards.

The 'Do Nothing' Scenario

- 6.95 In the absence of the Development, it is likely that the land would continue under the same land use, and the character of the Development Area is therefore unlikely to change significantly. However, the surrounding landscape and visual amenity is likely to be influenced by a number of 'forces for change'. Forces for change are those factors affecting the evolution of the landscape and which may, consequently, affect the perception of the study area in the near or distant future. Although prediction of these is necessarily speculative, those of particular relevance are discussed briefly below.
- 6.96 Windfarm development is a clear force for change. There are currently a number of windfarms in the study area, as well as small single turbine schemes. Planning consent has been given for further schemes, and there are also a number of proposals for further windfarms (see cumulative section). Given the wind resource in this area, there is likely to be ongoing interest in windfarm development in this part of the Southern Uplands.
- 6.97 The present areas of forest in the Development Area will change in the future as tree growth, felling and restocking occur. Upland grazing, forestry and agriculture are the key land uses in the surrounding area and will continue to be so.

NLEI Design Considerations

- 6.98 The design process for the Development is set out in **Chapter 3**. The design process included detailed consideration of the appearance of the Development from key locations in the surrounding area (principally locations within the detailed study area), and the potential for mitigation of effects through, for example, locating turbines off the tops of the ridges, and minimising visibility from locations within Wanlockhead. The interactive stages of the design and its modifications for mitigation of effects are set out in detail in **Chapter 3**, with the considerations relevant to landscape and visual effects outlined here.
- 6.99 The design strategy for the Development aimed to provide a balance between achieving maximum energy yield and creating a legible layout which relates to the landform and scale of the Development Area and to limit where possible visual effects whilst at the same time avoiding effects on other environmental qualities. This has been informed by relevant design guidance^{vii}.
- 6.100 The starting points for the design development considered landform, scale, land use and the landscape and visual pattern. These factors influence how the proposed windfarm will be perceived by people from the surrounding area and to what extent the landscape is capable of accommodating the development. The design strategy also comprised a number of design objectives which are set out below. The design strategy has also been developed in accordance with the requirements of PAN 68 – Design Statements ^{xxiv}.

Objectives of the Design Strategy

- 6.101 The objectives of the design strategy were as follows:
- to develop a layout which would appear cohesive and be legible in key views as experienced from the surrounding landscape;
 - to develop a layout that reflects the landform of the Development Area where possible;
 - to develop a layout that seeks to match the perceived scale of the turbines, and the scale of the overall windfarm, with the scale of the landscape;
 - to develop a layout that relates well to other windfarms in the local area, as well as being coherent in its own right; and

⁸ An update to the DGWLCS was published for consultation in 2016. As a consultation draft it has no formal status, and as such, references to the DGWLCS in this assessment refer mainly to the 2010 version as adopted. The 2016 study has been referred to for additional information on the landscape of the Development Area and its immediate surroundings, identified as the Southern Uplands LCT.

- to develop a layout that fulfils the above objectives whilst respecting other environmental and technical constraints including ecological, hydrological and ground conditions (including peat) related constraints identified during the EIA process.

- 6.102 The design strategy sets out the overall aspiration underpinning the design of the Development. It describes the design starting point, as well as subsequent alterations to layout that were made in response to landscape and visual, hydrological, archaeological, ecological, ornithological, wind yield, ground conditions and other technical considerations, as information emerged through the EIA process.
- 6.103 During the development and evaluation of the layout design iterations, computer modelling was used as a tool to aid design. This included ZTV models generated and used as a proxy for potential visual effects, and wireframes generated to illustrate views from key locations around the Development Area, and used to consider the design iterations including the 'composition of turbines' in views from the surrounding area.
- 6.104 The main components of the Development considered in the design iterations were the turbines. Infrastructure features such as onsite access tracks, hardstanding areas and borrow pits, being less visible beyond approximately 2-5km and limited to locations where elevated views across the Development Area are possible. These were designed to meet civil engineering requirements taking account of onsite environmental constraints, whilst seeking to avoid/minimise visibility from the surrounding areas. Given the extent of the existing infrastructure currently used for farming and forestry within the Development Area, including access tracks and borrow pits, part of the design strategy was to make best use of these where practicable to reduce the footprint of new infrastructure. Further iterations to the turbine layout, following detailed engineering review involved minor alterations to turbine and infrastructure locations, which were reviewed against all constraints.

Design Principles

- 6.105 Based on a review of the Development Area and its landscape context and scoping consultation responses, as well as advice contained in good practice guidance, including SNH's *Siting and Designing Wind Farms in the Landscape*^{vii}, the following design principles were adopted and considered throughout the design process.

General Design Principles

- Avoid dense clusters of overlapping turbines. Arrange turbines as far as possible to form an evenly spaced group or array when seen from key viewpoints.
- Place turbines so as to mimic the profile of ridgelines when these are perceived as skylines from the surrounding area. Avoid outlying turbines or stray tips which stand apart from the rest.
- Select an appropriate wind turbine, or turbines (tower height and blade diameter) for the Development Area, which will generally appear to relate to the scale with the landscape.
- Remove, relocate or amend the turbine tower height of turbines which appear more elevated than the majority in key views, and those which appear as outliers, and thus, disproportionately, extend the horizontal spread of the Development.

Site Specific Design Principles

- 6.106 Following the identification of constraints and key issues identified through the EIA process and consultation, site specific design principles were identified and applied as part of the iterative design process. These included:
- To avoid on-site constraints, including hydrology, ecology, ornithology, archaeology, topography and other technical constraints.
 - To consider the underlying topography of the Development Area and elevated plateaux of the Southern Uplands.
 - Ensure turbines are located on ridges avoiding the steep sloping valleys which dissect the uplands.
 - To improve the appearance of the Development when seen from the wider area, but in particular from the following locations:
 - Crawick Multiverse;
 - Wanlockhead;
 - the B740;

- Sanquhar and Nithsdale; and
- Mennock Pass.
- To increase set-back from B740 valley to avoid the potential for visual dominance of turbines from the road and properties along it.
- To minimise visibility from Wanlockhead (all viewpoints, but particularly focussing on the museum viewpoint – VP3, which is considered to be at the centre of the village).
- To increase the setback from the Southern Upland Way (SUW) to at least 150m.
- To consider the wider cumulative scenario and reduce the overall visibility of the Development with other schemes from key viewpoints.

Scale

- 6.107 It is recognised by the Scottish Government that there is a pressing need to produce considerably more energy from renewable sources. As such, there is therefore a need to plan for considerably larger scale wind energy development, as well as other forms of renewable energy. With the need to 'think big', comes the need to think where development of such a scale could be accommodated. Given that the scale of the hills on the Development site is large, and the DGWLCS concludes that landscape characteristics potentially indicate capacity for large turbine typologies, it is considered that the Development Area has the ability to accommodate a large typology development, with a large number of large turbines, which could make a significant contribution to renewable energy needs.

Design Evolution

- 6.108 The design underwent a number of iterations during the design process. A summary of the modifications to the design of the Development which are relevant to landscape and visual considerations is provided in **Table 3.1** in **Chapter 3**.
- 6.109 During the design development and modification process, consideration was given to a revision to the design rationale with regards to number and tip height of turbines. A layout of 17 turbines with a 135m hub height and 198m tip height was developed to test a development with a fewer turbines of a greater capacity. This 17 turbine layout avoided visibility from Crawick, avoided most visibility from Wanlockhead and avoided all visibility from the Mennock Pass. However, the increased size of the wind turbines required presented significant challenges in delivering the turbines to the Development Area. Although some 'multi-part' turbine blades are available this is not a common design for wind turbines. Turbines of this height also represented a substantial increase in scale from those already under consideration and would be among the tallest onshore turbines proposed in Scotland. Whilst the landscape of the Development Area has features that lend themselves to accommodating large scale wind turbines, NLEI Ltd considered that this represented too great a step change in the design. Combined with the technical issues posed by the taller turbines and longer blades, turbines of this scale were not progressed further and efforts were focussed on the turbines around 150m to tip.

Assessment of Effects

- 6.110 The assessment of effects is based on the project description as outlined in **Chapter 4: Scheme Description**. Unless otherwise stated, potential effects identified are considered to be adverse to reflect a 'maximum adverse case' scenario.

Construction Effects

Predicted Construction Effects

- 6.111 The likely sources of landscape and visual effects that will occur during the construction phase (lasting approximately 24 months) are as follows:
- activities and vehicular/personnel movements, including lighting within the Development Area;
 - activities where the access tracks meet the public road (access points A and B);

- the disturbance of areas of land and surface vegetation, including limited felling of forestry (see **Chapter 4**);
- the extraction of rock from borrow pits;
- the introduction of tracks, crane hardstandings at each turbine location and a substation;
- the construction and use of five temporary construction compounds; and
- the gradual introduction of tall vertical structures (turbines) and the use of cranes.

6.112 In addition, some limited construction effects will occur offsite, including public highway modifications. Further information is set out in **Chapter 11: Traffic and Transport**. The modification proposed for the public road at Crawfordjohn, where the existing corner (of the B740 with Crawfordjohn, from Gateside Road to Main Street) is unsuitable for large vehicles carrying abnormal loads, will include creation of a short section of track across the field to the west of the junction. This will involve the temporary removal of short sections of drystone wall at either end of the section, creation of a short section of track with gates at either end. Wall material will be retained for restoration, and the track surface will also be restored following completion of construction.

6.113 Likely changes relating to construction activities include changes to the physical nature (landcover/vegetation) and the perceived landscape character of the Development Area as a result of all activities considered together.

Proposed Mitigation

6.114 Construction works will follow a Construction Method Statement (CMS) and/or a Construction and Decommissioning Environmental Management Plan (CDEMP) which will set out measures to avoid or mitigate potential effects associated with key construction activities. These will be agreed with DGC in consultation with other consultees as required. These will include post construction restoration plans to help to restore landscape, habitats, earthworks, soils and surface vegetation including alongside tracks, around turbine bases, at borrow pits and along cable trenches once the construction phase is complete. Excavated borrow pits will be restored after construction, using stripped and stored moorland turf. The temporary construction compounds will be fully restored once construction is complete and the turbines are operational. Following construction, restoration of disturbed areas will take time, particularly in areas of more sensitive vegetation, but with the implementation of the post-construction restoration plan, bare ground will soon become re-vegetated. Forested areas will be either replanted or retained as open ground, as set out in **Chapter 4**. In addition, the substation, tracks and surfaces will progressively weather and become an established part of the landscape.

Residual Construction Effects - Landscape

6.115 The proposed Development Area currently largely comprises undisturbed moorland grazing, although there are areas of forest plantations. The Development Area will be altered with construction activity and the gradual introduction of tracks followed by other infrastructure and cranes for the erection of turbines. The construction compounds will act as hubs for construction vehicles and materials, with temporary cabins and facilities. The activity around the Development Area will be a contrast to the current tranquil moorland, as will the introduction of the structures.

6.116 Landscape effects of construction activities, in particular effects on heather and moorland vegetation, may last up to about five years as heather and moorland vegetation will take about this length of time to become re-established but levels of effect will decline over this period. Over time, a species balance which is typical of less disturbed areas will become established. Felled forest areas will be replanted or left unplanted according to the forestry proposals (see **Appendix 4.2**), and vegetation will regrow accordingly. Planting of areas as riparian woodland will create native woodland on currently open moorland valley slopes.

6.117 The Development Area, of high landscape sensitivity (see below Southern Uplands Lowthers unit for discussion of landscape sensitivity), will experience a large scale of change, although this will be short term and localised. Overall the effect on the interior of the Development Area, where ground level infrastructure will be perceptible during construction, will be **significant (major)**.

6.118 The landscape effects of construction will not be significant where ground level elements on the Development Area are not visible, as although erection of turbines will be visible, this process is relatively brief. No significant effects are identified as a result of activities on the Development Area, for areas outside the Development Area (**not significant (negligible)**). The changes to the roadside wall and field at Crawfordjohn will alter the field boundaries and land use for a small area of field adjacent to

the road. This is located within, but not in the centre of the small village, and will run along the rear of some farm buildings of Crawfordjohn Farm. The alterations to this section of road are judged to be temporary and reversible, and will have **not significant (minor)** landscape effects at the road section.

Residual Construction Effects - Visual

6.119 Construction activities will change the open moorland hills with limited forest plantations, to a construction site with excavations and track construction, a construction compounds and gradual introduction of ground level infrastructure elements and the increasing presence of tall cranes and partially built towers, whilst turbines are erected.

6.120 The changes during construction will be seen from locations from many parts of the Development Area, and from nearby (c.2-2.5km away) where the ground surface is visible. Receptors will include local people and walkers on the SUW and other paths across or near the Development Area. Close-up views of construction activities will be seen by SUW walkers, on the route that passes through the Development Area. Areas such as within some of the valleys in and around the Development Area will not have visibility of construction activities.

6.121 Viewers, local people and recreational walkers on the SUW (high sensitivity) will see the construction activities, although these will be short term and localised. The visual effects of construction will be **significant (major)** yet temporary, for viewers on the SUW within the Development Area, where ground level infrastructure will be visible during construction. Effects on views seen from outside the Development Area will be more distant and will be **not significant (negligible)**.

Operational Effects

Predicted Operational Effects

6.122 The sources of landscape and visual effects that will occur during the operational phase of the proposed development, with a lifespan of 25 years, include the turbines and other ground level and infrastructure elements (as described in **Chapter 4**):

- tall vertical structures with moving parts (turbines);
- access tracks and hardstanding areas at each turbine location at ground level;
- onsite substation;
- restored borrow pit marks;
- new site entrances at access points A and B;
- altered forest patterns; and
- occasional maintenance activity and vehicular/personnel movements around the Development Area and on local roads.

Proposed Mitigation

6.123 Mitigation for landscape and visual effects was a key component of the design process for the Development, and as such, no additional mitigation measures are proposed for landscape and visual issues, beyond those set out above and in **Chapter 3**. As a result, all effects identified in this assessment are residual effects.

Landscape Effects

6.124 The assessment of landscape effects that will occur during the operational phase of the Development is set out below.

Landscape Receptors

6.125 Significant effects on landscape character are not considered likely to occur beyond 15km away⁹. The assessment therefore focuses on LCTs that occur within 15km of the Development Area. LCTs outside the ZTV or where the ZTV indicates very limited visibility are not assessed, as there is no likelihood of significant effects. Landscape character areas which have greatest potential to be affected by changes in views, and consequently their landscape character, as a result of the Development are listed below, and shown on **Figure 6.5**.

- Southern Uplands in Dumfries and Galloway and South Lanarkshire
- Rolling Moorland in South Lanarkshire
- Foothills in Dumfries and Galloway and South Lanarkshire
- Upland Glens in Dumfries and Galloway and South Lanarkshire
- Upland River Valley in South Lanarkshire
- Upper Dale in Dumfries and Galloway

Southern Uplands

6.126 The Southern Uplands type describes the hills that form part of the Southern Uplands hill range that crosses southern Scotland.

6.127 Key characteristics for the Southern Uplands LCT include “*large, smooth dome/conical shaped hills, predominantly grass covered; open and exposed except within incised valleys; distinctive dark brown/purple colour of heather on some of the higher areas; pockets of woodland in incised valleys; stone dykes occasionally define lower limit; the legacy of lead and other mining activity*” (Dumfries and Galloway Landscape Assessment^{xiii}, page 175).

6.128 The Southern Uplands LCT extends across the study area across Dumfries and Galloway and South Lanarkshire, but also into the Scottish Borders and Ayrshire. The Dumfries and Galloway Windfarm Landscape Capacity Study (DGWLCS^x) identified the units of this LCT that contains the Development Area as the ‘Lowthers’ unit. Other units within 15km of the Development Area are the ‘North West Lowthers’ on the other side of the Crawick Water Valley to the west of the Development Area, and the ‘Nithsdale’ unit south of Nithsdale. The type is also found in South Lanarkshire, south of the Duneaton Water Valley and Abington.

Southern Uplands Lowthers Unit

6.129 The Lowthers unit of the LCT extends from the Crawick Water valley south-eastwards along the DGC boundary to Queensberry, and north-east to Hod’s Hill above Daer Reservoir. In the DGWLCS, the Lowthers unit is considered amongst several units: “*These landscape units of the Southern Uplands Type have a generally consistent and homogenous character within Dumfries and Galloway, forming high hills with an often dramatic sculptural landform. ... While the scale of this character type could relate to larger typologies, the distinctive landform of these uplands, where hills are pronounced and often form steep, rugged edges to adjacent dales and upland glens, is a key constraint to development. The sparsely settled nature and simple land cover pattern reduces sensitivity although, conversely, these uplands are particularly valuable because of their openness and absence of built development and large-scale forestry. These units of the Southern Uplands Type have an overall High sensitivity to the large and medium typologies of wind farm development.*” (x, page 140). Large and medium typologies of windfarm development are defined in the study as being of 80m-150m turbines and 50-80m turbines respectively (x, page 23).

6.130 The guidance on development section in the DGWLCS states that “*There is no scope for the large development typology to be sited within this character type without incurring significant impacts on a number of key characteristics*” (x, Appendix).

Sensitivity

6.131 The DGWLCS^x concludes that the Lowthers unit of the LCT is of high sensitivity to large development typology partly because of its inclusion of the type as part of the Thornhill Uplands RSA. The 2016

update to the DGWLCS^{xi} does not cover the Lowthers unit of Southern Uplands LCT, as there have been no changes to the windfarms present since 2011. The study indicates that there are no changes to the findings of sensitivity since 2011 (xi, page 139). Given that there is no information regarding the ‘very large’ typology for this unit of the LCT, one has to assume that the sensitivity to the very large typology for the Lowthers unit would be high.

6.132 In this assessment, the criteria to indicate susceptibility of the landscape to accommodate wind turbines (**Table 6.2**) have been considered, and the following observations can be made about the Development Area and the Lowthers unit:

- Scale: large scale hills;
- Landform: smooth landforms with rounded plateaux and hills and steep sided valleys;
- Landscape pattern and complexity: simple and smooth;
- Settlement and man-made influence: little settlement, little forest plantations, historical industrial elements;
- Skylines: undeveloped skylines of rounded hills. Landmark structure of radar dome on Lowther Hill;
- Inter-visibility with adjacent landscapes: hills along southern edge of Development Area form backdrop to Nithsdale, other hills frame Mennock Pass; and
- Perceptual aspects: Variable perceived distance from human activity, with forest areas and historical mining works.

6.133 This analysis indicates that while some aspects of the landscape indicate low susceptibility to wind energy development, including the scale of the hills, and their simple landform, other aspects indicate higher susceptibility. Part of the Development Area lies within the Thornhill Uplands RSA, and part of it has been extensively mined in the past. This indicates medium (local) value. However, this assessment takes a precautionary approach and takes the sensitivity as high but notes this precaution before forming the overall judgement.

Magnitude of Change

6.134 A number of aspects of the landscape are included in the DGWLCS^x as constraints to development. These are discussed below.

6.135 *Scale and openness*: The Development will form a series of lines of turbines along ridges of hills within the Development Area. The DGWLCS states that “*tall turbines could relate to this generally open and large scale landscape without dominating the height of hills*” (x, page 371 of Appendix). The turbines will relate to the openness and scale of the hills, which are large with broad ridge summits, such that, when seen from within the hills, their size and spacing will add to the sense of a large scale landscape.

6.136 *Landform*: The valleys that cut through the Development Area, separating the hill ridges from each other also mean that different parts of the Development will be separated by 800m to 1km. While this is roughly double the turbine separation along the ridges (separation distance generally tends to be around 500m), and there are locations from which the Development is seen as a coherent group, there are also locations from which the Development as a whole will read as a series of turbine lines on different ridges, for example from Lowther Hill (See VP6).

6.137 The windfarm relates to the landform of the hills by following the ridges. At different elevations, the turbines will highlight the variations along the ridges. Distinctive hills in the study area include Lowther Hill and Green Lowther, whilst the hills of the Development area, are of lesser landmark status. They form part of the backdrop from Nithsdale, from which the Conrig Hill and Brown Hill skylines are recognisable. The lines of turbines along the Conrig Hill ridge and the Brown Hill ridge will be the most visible from Nithsdale. Turbines further north are more set back from roads and settlements, and will not affect the skylines of the Southern Upland type as seen by most people from lower areas.

6.138 The turbines will not affect the perception of the steep slopes of the Crawick Water valley, as during design iterations, turbines were drawn back away from the top of Craignorth Hill, away from the scarps down Brown’s Cleuch. The turbines on Wether Hill above the Mennock Pass will be visible from the road within the valley as glimpses only, with the view passing the Beer Burn valley by the Earthenwork Cross being the most prolonged (see VP7).

6.139 *Landcover and landmark features*: The turbines will follow the ridges, generally being placed a little down from the ridge tops. The tracks, will also follow just below the ridges and avoid steeper slopes. In many

⁹ Although this limit is not stated in guidance, it has been generally found that significant effects on the character of the landscape are unlikely to occur beyond 10-15km from commercial scale windfarms. As a result, this assessment is focussed upon potentially significant effects within 15km.

parts of the Development Area there are boundaries made of walls or fences, and several hills have contouring ditch lines that break up the open moorland, which is generally grassland rather than heather, except for the White Dod ridge, where existing built and worn tracks along the ridge will be followed by the access tracks.

- 6.140 Some commercial forest plantations occur in the northern part of the Development Area, and there is limited riparian woodland in the valleys. As part of the Development, the forest plantations will have areas felled and not replanted (see **Chapter 4**), and there will be riparian planting undertaken within the Wanlock, Glendyne and Glenclach valleys.
- 6.141 *Settlement and archaeology*: The settlement of Wanlockhead is surrounded by industrial and archaeological heritage features, as set out in **Chapter 10**. Whilst the Development will be visible from parts of Wanlockhead, turbines have been drawn back from the settlement during the design process, such that the closest turbine, on White Dod will not be visible from Wanlockhead, and those that are visible will be over 3km away.
- 6.142 *Landscape context and visual amenity*: As discussed above, the Conrig Hill and Brown Hill ridges form a part of the backdrop to Nithsdale. Visual effects on the views from Nithsdale are considered with several viewpoints (see VP8, VP9, VP10, VP16, VP17), from which the turbines will be seen on or behind the horizon formed by these hills.
- 6.143 *Perceptual qualities*: The Development Area has some parts that have a strong sense of naturalness, and other parts that have a history of disturbance through the lead mining activity around Wanlockhead, or have been modified by forestry. The introduction of turbines, tracks and infrastructure will alter the perception of undisturbed hills for open parts of the Development Area, although this change will be less distinct for forested parts of the Development Area. No turbines will be located close to Wanlockhead where the hills are more disturbed during the period of mining.
- 6.144 *Landscape values*: the values placed on the hills as part of the RSA is part of the consideration of sensitivity to change. The citation for the Thornhill Uplands RSA ^{xii} refers to aspects of landform, scale and landcover that are discussed above.
- 6.145 A further constraint identified in the DGWLCS ^x is the recreational use of the uplands. Although the DGWLCS does not mention the SUW in this context, the Development Area is crossed by the SUW. There are no other features in the Development Area that draw particular recreational attention, there are no Corbett hills that would draw walkers, and although there will be informal use by local people walking, most walkers will use the SUW. Effects on the walking experience of the SUW have been considered in the design process and are assessed later in this chapter, and are considered in **Chapter 13: Socio-Economics, Tourism and Recreation**.
- 6.146 Overall, the key characteristics of the Lowthers unit relate to the landform and the role of the hills as masses that form the backdrop to views from Nithsdale and frame views from the passes. The introduction of the turbines and tracks between them will affect the character and perception of the hills that they will be on, with a high magnitude of change occurring for the part of the Lowthers unit that includes the Development Area, from the Crawick Water to the Mennock Pass. For other parts of the unit, from the Mennock Pass to the Dalveen Pass, the Development will affect the perception of the Development Area hills when seen from high elevations, but the Development will be seen 'over there', and will not affect the character of the hills on which the viewer stands in the same way. The magnitude of change to landscape character between the Mennock Pass and the Dalveen Pass is judged to be medium. Within the Dalveen Pass the Development will not be visible. Beyond the Dalveen Pass, there is a greater sense of separation from the Development Area, and a lesser effect on landscape character.

Effect

- 6.147 The effect of the proposed development on the character of the Lowther unit is judged to vary with proximity to the Development. For the area that contains the Development Area, between the Crawick Water to the Mennock Pass, the effect is judged to be **significant (major)**. Between the Mennock Pass and the Dalveen Pass, the effect is judged to be **not significant (minor)**, and beyond the Dalveen Pass the effect will be **not significant (negligible)**.

North West Lowthers and Nithsdale units

- 6.148 The North West Lowthers unit of the Southern Uplands LCT lies on the western side of the Crawick Water Valley to the west of the Development Area, extending to the DGC boundary. Although the Sunnyside turbines are adjacent to the unit, and Hare Hill Windfarm is visible from the unit, there are no windfarms within the unit. The Nithsdale unit lies to the south of Nithsdale, including the open hills around the

Scaur Water valley, and is host to Sanquhar and Whiteside Windfarms (the latter under construction). The hills of these areas are of similar heights to the hills of the Development Area.

Sensitivity

- 6.149 The DGWLCS ^x refers to these areas as undulating plateaux and broad ridges with few pronounced peaks, and concludes that the sensitivity to large scale development within the units is medium. In this assessment, the sensitivity to development outside a unit is judged to be less than the sensitivity to development within the unit, as there will be separation from the unit. The sensitivity to development outside these units is therefore judged to be low.

Magnitude of Change

- 6.150 The Development will be perceptible as turbines on the hills across the Crawick Water from the North West Lowther unit, seen from east facing slopes and high tops, and it will be seen across Nithsdale from the Nithsdale unit. As the Development will be seen 'over there' with an intervening valley, it will not affect the character of the hills of these units. The magnitude of change to the character of the North West Lowthers and Nithsdale hills is judged to be low.

Effect

- 6.151 The effect of the proposed development on the character of the North West Lowthers and Nithsdale units is judged to be **not significant (negligible)**.

Southern Uplands in South Lanarkshire

- 6.152 Within South Lanarkshire, the Southern Uplands LCT occurs across the council area south of the Duneaton Water Valley and Abington. The South Lanarkshire Landscape Capacity Study for Wind Energy ^{xvii}, divides it into three broad areas, East of the Clyde/ Daer, the Lowther Hills around Daer Water and Lowther Hills west of Clyde/ Daer (west of the A702), within which there are three subtypes, Southern Uplands with Forest (13A), Southern Uplands with Windfarm (13B) and Southern Uplands Leadhills (13C).
- 6.153 East of the Clyde/ Daer, the type is largely taken up with the subtypes with Forest (13A) and with Windfarm (13B). Of this area, only the higher ridges fall within the ZTV, and those ridges are part of the Clyde Windfarm. The landscape subtype with Windfarm (13B) is of low sensitivity to windfarm development outside the type, as it is affected and characterised by windfarm development itself. There is therefore little likelihood of significant effects on the character of this subtype, and it has not been considered further.
- 6.154 The landscape area of the Lowther Hills around Daer has very limited theoretical visibility, on the north-west facing slopes of Ballencleuch law and Rodger Law. At around 10km distant, the Development will be seen as a small feature in the wider landscape beyond the Lowther ridge. For this area, Clyde Windfarm is closer to these hills, and the Development will not affect the character of the hills in this part of the Southern Uplands.

Lowther Hills west of Clyde/ Daer (west of the A702)

- 6.155 This area extends from the Dalveen Pass to the Duneaton Water valley, and from the M74 to the South Lanarkshire Council boundary along the edge of the Development Area. A small part of this area has forest and is described as Southern Uplands with Forest (13A), and much of the area is described as Southern Uplands Leadhills (13C). This subtype is used in the South Lanarkshire Character Assessment to define the areas of Southern Uplands affected by historic mining works. It extends from the council boundary to include the visual envelope around Leadhills, i.e. to the ridge between the Glengonnar Water and the Snar Water over Rake Law, to Wellgrain Don and the ridge across the Elvan Water up to Lowther Hill. The area includes the steep flanks of the valleys that drop down into Leadhills.

Sensitivity

- 6.156 The sensitivity of the landscape to development within the Southern Uplands type is described as medium in the South Lanarkshire Capacity Study ^{xvii} for all areas of the LCT, including the area west of the A702, with no distinction made for subtypes. It is generally considered that landscape sensitivity is reduced when considering developments outside the character area. For this assessment, although the Development is outside the LCT, the Development will be adjacent to the council boundary, therefore, using a precautionary approach the sensitivity is taken as medium for this assessment.

Magnitude of Change

- 6.157 The Development will be seen as a series of turbines on the hills to the south-west, when seen from the ridges of this subtype, and in particular from the hills and valleys close to the Development Area, including the Snar Water valley, Windy Dod and the Rake Law ridge. For these areas, the turbines on Slough Hill to Raecleuch Hill will be seen on the adjacent ridge, as features nearby. From further afield, including from Brown Dod, Broad Law and beyond Leadhills, the turbines, while visible on the higher slopes, will be seen with the separation of valleys and hills between. Clyde Windfarm is visible from many of these hill tops, such that the Development will introduce turbines onto hills in the opposite direction. This may give a sense of being in upland hills between windfarms. Overall the magnitude of change is judged to be high for the area north-west of Leadhills including the Snar Water valley, Windy Dod and the Rake Law ridge, and medium to low for other areas.

Effect

- 6.158 The effect of the proposed development on the character of the Southern Uplands area west of the Clyde/Daer Water is judged to vary with proximity to the Development. For the area north-west of Leadhills including the Snar Water valley, Windy Dod and the Rake Law ridge, the effect is judged to be **significant (moderate)**. Beyond this, including from places such as Brown Dod, Broad Law and beyond Leadhills the effect will be **not significant (minor to negligible)**.

Rolling Moorland

- 6.159 The Rolling Moorland LCT (SL7) identified in the South Lanarkshire Landscape Character Assessment^{xiv}, is distinguished from Plateau Moorland described in the earlier LCA^{xxv}. The South Lanarkshire assessment states "This type is similar to the Plateau Moorlands but is a more dissected plateau, with greater elevation and more rolling topography, without being of such high elevation and steepness as the Southern Uplands to the south" (Page 40^{xiv}). The closest area of this LCT to the Development Area lies between the Duneaton Water Valley and the Douglas Water valley. The South Lanarkshire character assessment identifies some parts of this area as a subtype with Forest (7A). Andershaw and Middle Muir Windfarms are being built in the eastern part of this area, and Penbreck Windfarm will also be located at the western end of this area. The Clyde Windfarm and the Hagshaw Hill group of windfarms are also visible from this area.

Sensitivity

- 6.160 The South Lanarkshire Capacity Study gives this area a medium sensitivity to development within the LCT. Given the presence of turbines within the LCT, it is judged that for this assessment, the sensitivity of the LCT to windfarm development outside the LCT is low.

Magnitude of Change

- 6.161 The Development will be over 3km from the southernmost edge of this LCT, and will be seen from higher south-facing areas as turbines on hills, where there are turbines on the moorlands and in the forest areas within the LCT, and views of turbines in other directions. The character of the moorlands themselves will not be affected by the introduction of additional turbines in the wider surroundings, and as such the magnitude of change is judged to be low.

Effect

- 6.162 The effect of the proposed development on the character of the North West Lowthers and Nithsdale units is judged to be **not significant (negligible)**.

Foothills

- 6.163 Foothills are found in two parts of the detailed study area, to the west of Nithsdale around Drumlanrig (D&G 18), c.6km away at its northernmost point, and the Carmichael/Robertson area to the north of the B7078/M74, c. 10km away at its southernmost point.

Sensitivity

- 6.164 The Nithsdale unit, of small hills and policy (estate) woodlands and small fields are found in the DGWLCS to have high sensitivity to large typology windfarms within the Foothills, but it is judged that there will be lower sensitivity to windfarms outside the area, particularly where policy woodlands create a relatively enclosed landscape.

- 6.165 For the Carmichael/Robertson area north of Abington, the South Lanarkshire Capacity Study identifies a medium sensitivity for development within this area. With views of Clyde Windfarm, the Hagshaw group¹⁰ and now Andershaw and Middle Muir Windfarms close to the area, this assessment considers that the area is of low sensitivity to windfarms located outside the unit.

Magnitude of Change

- 6.166 Theoretical visibility across the Carmichael/Robertson area is over south facing slopes, from locations where Andershaw and Middle Muir Windfarms can be seen within c.5km, and turbines of the Hagshaw group and Clyde Windfarm are also within approximately 7km. The Development will form a distant element in the wider landscape perceptible from few locations within the unit, and will not affect the characteristics of the Foothills landscape.

- 6.167 From the Nithsdale unit of the Foothills LCT, there will be patchy theoretical visibility of a small number of turbines, but this is a relatively well wooded landscape such that actual visibility will be much reduced. The Development, where visible, will be seen as distant turbines on the horizon north along Nithsdale, in different direction of view from Dalswinton Windfarm¹¹ to the south-east. The magnitude of change to the character of these areas of Foothills is judged to be low.

Effect

- 6.168 The effect of the proposed development on the character of the Nithdale unit is judged to be **not significant (minor)**, and for the Carmichael/Robertson unit it is judged to be **not significant (negligible)**.

Upland Glens

- 6.169 Upland Glens are found in Dumfries and Galloway (D&G 10) in the Mennock Pass, the Dalveen Pass, and the Scour Water valley; as well as in South Lanarkshire (SL 14) in the Glengonnar and Elvan Water valleys and the Dalveen Pass. There is little or no theoretical visibility in the Dalveen Pass and the Scour Water valley, and very limited visibility from the Glengonnar and Elvan Water valleys, such that these are not considered further. The Mennock Pass area of this LCT is limited to the valley section between Howat's Burnfoot and Corbie Linn c.1km south of Wanlockhead. The southernmost part of the Mennock Pass is well wooded, but lies within the Upper Dale LCT. Beyond Howat's Burnfoot, the Upland Glen is treeless and with very steep sides, often with scree slopes, dropping to a narrow valley floor.

Sensitivity

- 6.170 The narrow, steep sided Mennock Pass valley is judged to be of high sensitivity to windfarm development outside the LCT yet on the horizon. Given the enclosure within the valley, the undeveloped skylines are particularly important to the enclosed character.

Magnitude of Change

- 6.171 There will be views of turbines for limited sections along the Upland Glen, on the horizon above the tributary valleys of the Glendeuchan Burn, Beer Burn and Glenclach Burn valleys (see VP7). After passing the foot of the Moor End ridge, there will be no further visibility of turbines from the valley floor, although there will be visibility from the higher slopes, and along the Dempster Road path that runs along the southern side of the valley. The turbines will be seen as large structures in close proximity (approximately 1-1.5km away), located on the horizon at the top of the very steep sides of the narrow valley. Turbines will therefore be above viewers in the valley, and the perceived remote character of the valley will be altered by the turbines on the skyline above. There will be views of Sanquhar Windfarm and/or Whiteside Windfarm from the valley floor in the lowest stretch as the valley runs south-west past Auchensow Hill. Elsewhere, there will be no views of other windfarms from the valley floor, but views of several on the high side slopes where views open out. Turbines of the Development will not be seen from all locations along the valley floor and overall the magnitude of change to the character of the valley landscape where turbines are visible is judged to be high.

Effect

- 6.172 Where undeveloped skylines are particularly important to the character of enclosed steep sided valley the effect of seeing turbines on the ridges is judged to be **significant (major)** but overall the effect of

¹⁰ The 'Hagshaw Group' refers to the collection of windfarms around Hagshaw Hill, including Hagshaw Hill and its extension, Nutberry and Galawhistle.

¹¹ Dalswinton Windfarm is located outside the 15km inclusion for the CLVIA, but is visible from this location.

the proposed development on the character of the Mennock Pass unit of the Upland Glen LCT is judged to be **not significant (minor)**.

Upland River Valley

6.173 Upland river valleys (SL 8) in South Lanarkshire include the Duneaton and Douglas Water valleys. These valleys contrast with the surrounding Rolling Moorland with wooded and settled valley slopes and floors.

Sensitivity

6.174 The valleys are described in the South Lanarkshire capacity study ^{xvii} as being of high-medium sensitivity to windfarm development. Given the views of turbines of Clyde, Andershaw, Middle Muir or Hagshaw group windfarms from these valleys, the sensitivity to further windfarm development outside the valleys is judged to be medium.

Magnitude of Change

6.175 From the Douglas Water valley, there will be theoretical visibility of the Development as a distant group of turbines seen from the northern slopes of the valley. The proximity of the Hagshaw group of windfarms, the wooded nature of the valley slopes and the distance to the Development (c.12km) means that the Development will be a small and distant feature with a low magnitude of change to this valley.

6.176 From the Duneaton Water valley, the Development will be seen on the hills to the south, at the head of the Snar Water valley when seen from that valley and from around Crawfordjohn; and on the hill horizon oblique to the valley from other locations. The turbines on the Slough Hill - Raeleuch Hill ridge at the northern end of the Development Area will be the closest to the LCT.

6.177 The Snar Water valley section within in this LCT runs northwards. From the northern end of the valley floor there are views of Andershaw and Middle Muir Windfarms to the north, as well as higher on the side slopes where views open out. From the northern end of the valley where it meets the Duneaton Water, the turbines of Middle Muir are approximately 2km away on the other side of the Duneaton Water valley. The turbines of the Development will be approximately 1.5km from the southernmost end of the LCT area, on the horizon at the head of the valley. These different positions at opposite ends of the valley will affect the character of this valley.

6.178 It is judged that the Development will have a high magnitude of change to the Snar Water valley, but a low magnitude of change to the other parts of the Duneaton Water valley.

Effect

6.179 The effect of the proposed development on the character of the Snar Water section of the Upland River Valley LCT is judged to be **significant (moderate)**, and the effect on landscape character will be **not significant (minor)** for the other parts of the Duneaton Water valley.

Upper Dale

6.180 The Upper Dale LCT (D&G 9) is in two major valleys of Dumfries and Galloway, including upper Nithsdale upstream of Thornhill. It is a broad valley with a settled floor with roads and a railway and often well wooded lower slopes. Undulating valley sides lead up to moor and forest covered hills on either side.

Sensitivity

6.181 The DGWLCS ^x identifies Upper Dale as having high sensitivity to large typology development within the Dale. For this assessment, the sensitivity of the valley type to developments on the skyline is judged to be medium.

Magnitude of Change

6.182 The Development will theoretically be visible for much of the Upper Nithsdale area of this LCT, though screening by woodlands and settlements will reduce actual visibility. However, from locations where views extend up to the hills of the Development Area, the Development will be visible as a row of turbines on the skyline, with further tips and potentially hubs visible behind. While the design has sought to place the turbines behind the ridges that form the horizon, consisting of the Conrig Hill and Brown Hill ridges, the turbines on these ridges will be visible except for their bases. Ground level infrastructure including tracks and transformers will not be visible from the Upper Dale area.

6.183 Turbines will not be new features for Nithsdale, with two small turbines at Sunnyside being prominent in views around the Sanquhar area, Hare Hill Windfarm to the south-west, and other sites currently under

construction on the southern side of the valley. The Development will be located on a part of the valley skyline not currently with windfarms, and will be seen in similar direction to the Lowther Hill radar dome and masts.

6.184 Over Auchentaggart and Sanquhar Moors east of Sanquhar, the Development will be seen as a line of large turbines on the ridge at the top of the slopes that lead down to the moor. When looking out over Nithsdale the turbines will be behind a viewer, but there will be a sense of the turbines being present adjacent and overlooking this Upper Dale area. For this area there will be a high magnitude of change.

6.185 From the other side of the Upper Dale, on the north facing slopes above Glengenny and Eloick to the Euchar Water valley by Ulzieside, the Development will be seen as a line of large turbines on the opposite horizon, prominent in views that tend to look out over the valley. There are estate landscapes in this area, around Eloick, a non-inventory designed landscape which are more wooded in character than other parts, but also have views out across the valley. For this area, although the Development will be on the other side of the valley, and other windfarms are being built on the south side of Nithsdale, the perception of the skyline that forms the valley will be affected, with a medium magnitude of change.

6.186 For other parts of the Upper Dale LCT, the Development may be visible, but will be further away. The Conrig and Brown Hill ridges are seen obliquely along the valley and the Development will be less visible. From other locations, particularly further west, the turbines of other windfarms may play a greater role in the valley character than those of the Development. For these areas there will be a low magnitude of change.

Effect

6.187 For the Auchentaggart/Sanquhar Moors area to the north-east of the valley floor the effect is judged to be **significant (major)**. For the north facing slopes between Glengenny and Ulzieside Farm, the effect is judged to be **significant (moderate)**, for other areas the effects are judged to be **not significant (minor to negligible)**.

Landscape Capacity

6.188 The DGWLCS ^x and the 2016 update study ^{xi}, define capacity as 'the degree to which a particular landscape character type or area is able to accommodate change without significant effects..'. Firstly, it is not clear what the word 'significant' means in this context, whether it means 'important' or 'material' or whether it refers to significance in the context of EIA. Given that some significant landscape effects are inevitable as a consequence of all commercial scale wind energy developments, it is considered that 'without significant effects' in the EIA sense is not possible. Therefore, this assessment considers whether the Development will have unusual or particularly extensive significant (EIA) effects. The DGWLCS also does not provide a tool for assessing whether or not there is capacity in the landscape for any given development, it does, however, come to a judgement with respect to the relative sensitivity of landscape character types and units to typologies.

6.189 As discussed in paragraphs 6.132 - 6.133 above, this assessment discusses the relative sensitivity using a number of criteria as set out in **Table 6.2**. Considering the large scale of the landscape, the smooth landform with rounded hills, simple landscape pattern, absence to man-made influences, and distance to settlement, this indicates the ability of the Development Area to accommodate development, though it is also noted that steep sided valleys, undeveloped, prominent skylines, and intervisibility with surrounding landscapes may reduce the ability to accommodate development. Overall it is considered that the Development Area has some capacity to accommodate development.

Effects on Visual Amenity

Analysis Zones of Theoretical Visibility

6.190 A ZTV is a tool which can be used to calculate the theoretical visibility of the Development. It is important to note that visibility can be considerably reduced by screening afforded by buildings and woodland. Views from along roads and in rural areas are often filtered by woodland and hedgerows. This can be seasonal when trees are deciduous.

6.191 The ZTV (**Figures 6.1 to 6.3**) shows the theoretical visibility of the turbines. Field surveys were undertaken to verify potential views on the ground and to appraise the overall actual visibility of the proposed turbines. The pattern of visibility across the study area illustrated by the ZTV is strongly

influenced by the topography through the Southern Uplands with visibility from rounded hill tops, but limited visibility within steep sided valleys. To the south-west of the Development, the ground drops down towards Nithsdale, such that visibility extends south-west to the southern side of Nithsdale. In other directions, visibility is patchy, being limited to the high hilltops and their high slopes, except where more distant views along Nithsdale may include the Development in the distance (such as from around New Cumnock and Thornhill). This assessment considers close, mid-range and distant views of the proposed Development from the surrounding area as detailed below.

6.192 Within approximately 5km of the outermost turbines:

- Almost all of the Development Area will have visibility of turbines, but the number of turbines visible reduces with altitude, such that only on the ridges will the full Development be visible. Some parts of the Development Area will have retained forest that will screen views.
- The Wanlock Water valley will have theoretical and actual visibility of a small number of turbines located on the ridges above it. There is no tree cover in the valley that would reduce visibility, except in parts of Wanlockhead.
- The Crawick Water valley will have theoretical views of turbines, though south of Nether Cog, woodland around the road and on the slopes will limit actual visibility.
- Some parts of the Mennoch valley will have visibility of the turbines on Brown Hill-White Dod ridge, including stretches of the Mennoch Pass. Further south, woodland along the valley will screen many views from the road.
- Turbines will be visible from Auchentaggart Moor, before it drops down to Sanquhar. South facing slopes running down to the A76 will not have visibility of the Development.
- Turbines will be visible from high ridges and slopes beyond the Crawick Water valley, beyond the Snar Water valley, and beyond Wanlockhead and Leadhills. The Development will not be visible from the settlement of Leadhills. The Development will be visible from Lowther Hill and Green Lowther.

6.193 Between 5-15km from the outermost turbines:

- The Development will be visible from the southern side of Nithsdale, and from parts of Nithsdale West of Crawick, where there is less screening by existing woodland. Theoretical visibility from the Drumlanrig and Carronbridge area to the south is limited by existing woodland in these areas.
- Visibility is limited to high hills and ridges to the north-west, north and north-east, where existing forest allows.
- There will be no visibility of the Development from beyond Lowther Hill-Green Lowther ridge due to the relative height of this ridge above the Development Area.

6.194 Between 15-35km from the outermost turbines:

- There will be limited visibility of the Development from this zone.
- Limited high hills such as Tinto Hill will have visibility of some of the turbines at a distance.
- Lower areas with views along Nithsdale may have limited visibility, such as from around New Cumnock and Thornhill, and from limited locations to the north (towards Lanark) and north-east (towards Biggar). Many of these views will be screened by local woodland.

Visual Receptors

6.195 Viewpoints are used to represent and assess the visual effects of the Development that will be seen by the visual receptors (people). The viewpoint list is a representative selection of locations agreed with the statutory consultees, it is not an exhaustive list of locations from which the proposed development will be visible. Viewpoints are selected to represent views where the proposed development is likely to be most visible to a particular receptor, feature or area and therefore represent a maximum effect case in terms of visibility.

6.196 Twenty four viewpoints were selected across the wider study area through desk study, site work and discussions with SNH, DGC, SLC and EAC (see **Appendix 6.1**). These viewpoints are all publicly accessible and include:

- viewpoints selected to represent the experience of different types of receptor including:
 - local residents within the local surroundings;

- road users travelling on roads around the proposed development area;
- hill walkers and recreational users of the Southern Upland Way long distance footpath;
- viewpoints selected because they are promoted in literature, or advertised or otherwise promoted; and
- illustrative viewpoints chosen specifically to demonstrate a particular visual effect or specific issue, such as locations on the SUW.

6.197 Assessment viewpoints were selected to represent a range of receptors, viewing directions, distances and elevations, as set out in **Appendix 6.1** which details the viewpoint selection process. The viewpoints are shown on **Figure 6.6**. The baseline descriptions and assessments for these viewpoints are set out for each viewpoint below.

6.198 The ZTV (**Figures 6.1-6.3**) was used to identify which settlements have potential visibility of the Development, and require assessment, and which could be scoped out because they will have no or limited views of the proposed development. The following settlements are considered in the assessment:

- Wanlockhead;
- Sanquhar;
- Kirkconnel and Kelloholm;
- Crawfordjohn;
- Carronbridge and Thornhill;
- New Cumnock.

6.199 Other settlements across the study area, including Leadhills, Crawford, Abington, Douglas and Glespin and more distant settlements are not predicted to be affected by a change in views (as represented by the ZTV) and therefore are not assessed further.

6.200 Visibility from a settlement is often not uniform across the settlement. This is because views of the surrounding landscape from within the settlement are obscured by the buildings, structures, trees and vegetation of the settlement itself, and are dependent on the orientation of windows and vistas along streets. Where the ZTV indicates theoretical visibility within settlements, elevated vantage points of buildings are more likely to have views than locations at ground level.

6.201 Routes across the study area form a hierarchical network of road, rail and walking routes, and are shown on Ordnance Survey mapping. Road and rail routes generally follow low lying areas or glens, occasionally crossing higher ground via passes, but walking routes are more variable and can pass over hills and along ridges. Routes considered in the assessment are key routes that have a theoretical visibility of the proposed development, including those listed below.

- Roads: A76 and the railway that runs parallel, B797, and B740;
- Paths: Southern Upland Way (including the Coffin Road), the Muirkirk to Wanlockhead Drove Road, and the Covenanters' Road or Enterkin Path (shown on **Figure 6.6**).

6.202 Other settlements and routes not listed here have limited or no visibility of the Development, and are therefore not included in the assessment.

Viewpoints

VP1 Glengaber Hill

Grid Reference	NGR 284377 613933	Figure Number	6.11
LCT	DG: 19 Southern Uplands	Landscape Designation	Leadhills and Lowther Hills RSA
Direction of view	All (within site)	Distance to nearest turbine	463m, (T20)
Number of turbines with hubs theoretically visible	16	Number of turbines with blades theoretically visible	20

6.203 The viewpoint is located on the ridge of Glengaber Hill, at the point where the Southern Upland Way (SUW) crosses the fence line at a style adjacent to a gate. Although it is not at the summit of Glengaber Hill, it is the highest point of the SUW within the Development Area, with panoramic views in most directions. Receptors of this view include walkers following the SUW as it passes over from Sanquhar to Wanlockhead. Similar views are seen from the hills, tops and uplands around the viewpoint, such as Glengaber Hill itself.

6.204 This viewpoint has a panoramic view that extends to the other hills of the Development Area including Willowgrain Hill, Cogshead Hill and the Slough Hill to Snarhead Hill ridge, with views to the hills beyond Nithsdale to the south-west, seen when walkers pause and turn. There are also views north towards Cairn Table and Hagshaw Hill with the Glasgow basin beyond, as well as views of Tinto Hill to the north-east. There is no clear focus to the view, as the eye is drawn across the whole panorama along the distant horizon, though there are eye-catching features including a number of windfarms on hills to the south-west as well as to the north, and the radar dome of Lowther Hill is visible to the north-east. The foreground of the existing view in all directions is of the broad moor covered ridge top that does not allow views down into the valleys on either side. Beyond the ridge the viewer is standing on, there are rolling hills into the distance, with incised gullies into the narrow valleys, particularly back towards Cogshead, and forest patches on some slopes to the south (again around Cogshead) and west towards Wedder Dod.

Sensitivity

6.205 This viewpoint is located at the highest point of the SUW between Sanquhar and Wanlockhead, and lies within the RSA designation (local value). Viewers include walkers on the SUW, and who are judged to be of high susceptibility to changes in views. As such, the sensitivity of this viewpoint is judged to be high.

Magnitude of Change

6.206 The turbines of the Development will be located on the hills around this location, to the north, west and south, with T20 being the closest turbine at approximately 500m. At this point, walkers from Sanquhar would have passed a number of turbines, but this is the highest point on the route, and therefore the point at which there is most visibility of turbines. It is noted that shortly after this point, the route drops down into the Wanlock Water valley, where visibility of turbines is more limited. From Wanlockhead, this is the first location with a view of several turbines on the ridges around the route, whilst there will have been views of turbines over the ridge the path was ascending from the Wanlock Water valley.

6.207 At this point, the closest turbines will be to the west, but other turbines of the Development will also extend round to hills to the north (the Slough Hill to Snarhead Hill ridge) and to the south (the Willowgrain and White Dod ridges). Turbines will therefore be seen at varying distances in different directions, although no turbines will be visible to the east. Where the turbine bases are visible, transformers and hardstanding areas will be visible, including the cut/fill slopes that edge them. The tracks between the turbines will be visible on some parts of the ridges, in particular the track that runs over the top of Highmill Knowe and up Glengaber Hill will be visible close to the viewpoint to the east, where it crosses the SUW. Given the proximity and spread of the turbines and infrastructure across the panorama, a result of the viewpoint being located within the turbine area, the magnitude of change to the views from this location will be high, as the views will change from open hill tops to hill tops with turbines.

Effect

6.208 The visual effect experienced at this location is judged to be **significant (major)**.

VP2 Wanlockhead Beam Engine

Grid Reference	NGR 287028 613143	Figure Number	6.12
LCT	DG: 19 Southern Uplands	Landscape Designation	Thornhill Uplands RSA
Direction of view	North-west	Distance to nearest turbine	2.1 (nearest visible turbine is 3.2km)
Number of turbines with hubs theoretically visible	0	Number of turbines with blades theoretically visible	7

6.209 The viewpoint is located on the roadside adjacent to the beam engine, at the western edge of Wanlockhead. The beam engine is an industrial heritage feature that is a key part of the Wanlockhead Scheduled Monument. Wanlockhead is a small village in a narrow V shaped valley, at the head of the Mennock Pass, and is the highest village in Scotland at 467m AOD. The former mining village and views from it are contained within the steep valley sides of the Wanlock Water and Mennock valley. The viewpoint is located just downstream of the centre of the village of Wanlockhead, and on the opposite side of the Wanlock Water from the Southern Upland Way. Views from this location are contained within the steep valley sides of the Wanlock Water.

6.210 Principal receptors of this view include visitors to the beam engine the residents of Wanlockhead, and walkers on the Southern Upland Way.

6.211 The lower slopes of the valley are rugged and disturbed, with terracing apparent on the opposite bank, which are remnants of the mining works. Paths are used by museum visitors. The view upstream (east) towards Wanlockhead is of white painted houses and the church a short distance away, with more distant buildings and the hillside leading up to Lowther Hill in the distance where the radar dome on Lowther Hill is an eye-catching feature on the skyline.

6.212 Downstream (west), the valley sides continue to be disturbed by old mine workings, with terraces and heaps, some of which are covered with vegetation, others of which are not. The skyline is open and formed of the high flanks of the south side of the valley into the distance. The old white painted miners cottage sits below the road in the foreground, as part of the museum. A few trees are located downstream, around the next cluster of cottages.

Sensitivity

6.213 This viewpoint is located within a settlement, and at an interesting industrial feature and part of the open air part of the Mining Museum, such that key viewers include museum visitors and local residents, but it is also close the Southern Upland Way. Viewers are judged to be of high susceptibility to changes in views.

6.214 The viewpoint is located within the Thornhill Uplands RSA and within a Scheduled Monument. The value is considered to be high. The sensitivity is therefore judged to be high.

Magnitude of Change

6.215 A small number of turbine blades will be visible passing the horizon downstream to the west, without hubs or other infrastructure visible. Although most turbines will be hidden from view, these turbine blades will potentially be eye catching features on the skyline to the west, beyond the formerly mine-worked valley. The juxtaposition in the view of old mine workings and new renewable energy technology will create an interesting contrast that to some viewers will form a continuation of resource use in the area, but to others will form a modern distracting element on the skyline. There will be a medium magnitude of change with the introduction of the turbines as blades low on the horizon on one part of the skyline.

Effect

6.216 The visual effect seen at this location is judged to be **significant (moderate)**.

VP3 Wanlockhead Museum

Grid Reference	NGR 287225 612942	Figure Number	6.13
LCT	DG: 19 Southern Uplands	Landscape Designation	Thornhill Uplands RSA
Direction of view	North-west	Distance to nearest turbine	2.1 (nearest visible turbine is 3.5km)
Number of turbines with hubs theoretically visible	1	Number of turbines with blades theoretically visible	11

6.217 The viewpoint is located on the footpath below the Wanlockhead Museum of Lead Mining, on the way to the external exhibits. This path is close to the centre of the village, and forms part of the Southern Upland Way. Wanlockhead is a small village in a narrow V shaped valley, at the head of the Mennock

Pass, and is promoted as the highest village in Scotland at 467m AOD. The former mining village and views from it are contained within the steep valley sides of the Wanlock Water and Mennock valley.

- 6.218 Principal receptors of this view include the visitors to the museum, walkers on the Southern Upland Way and residents of Wanlockhead.
- 6.219 The viewpoint is located by a picnic bench on a footpath by the stream that runs through the village, about 50m from the main museum building and its carpark, and parallel with Church Street. The houses of Wanlockhead are located higher up the valley slopes. The view along the Wanlock Water to the north-west is downstream along a narrow, steep sided valley. The path runs along the watercourse, with a small footbridge in the foreground, leading across and up the houses on Church Street. These houses have a few trees around them, both on the slopes above, and also between the road and the stream below. Beyond this, the moor covered flanks of the valley run away to the distance, although the view is filtered by the foreground trees, and a small clump of conifers on the valley floor some 400m further. These trees filter the view along the valley and to the north side, but the skyline is open to the rounded hill slopes on the south side of the valley.

Sensitivity

- 6.220 This viewpoint is located in the middle of a settlement, such that key viewers include local residents, but it is also on the Southern Upland Way and part of a walk promoted by the museum. Viewers are therefore judged to be of high susceptibility to changes in views.
- 6.221 The viewpoint is located within the Thornhill Uplands RSA and within a Scheduled Monument. The value is considered to be high. The sensitivity is therefore judged to be high.

Magnitude of Change

- 6.222 A number of turbines will be visible on the horizon downstream to the north-west, some as blades passing over the horizon, with one hub visible, although from this location by the picnic bench, trees obscure some of the turbines. No infrastructure elements will be visible. The turbine blades will potentially be eye catching features when walking down the valley. The juxtaposition in the view of old mine workings and new renewable energy technology will create an interesting contrast that to some viewers will form a continuation of resource use in the area, but to others will form a modern distracting element on the skyline. There will be a medium magnitude of change with the introduction of the turbines on the skyline in the framed views along the valley.

Effect

- 6.223 The visual effect seen at this location is judged to be **significant (moderate)**.

VP4 Upper Wanlockhead

Grid Reference	NGR 287571 612711	Figure Number	6.14
LCT	DG: 19 Southern Uplands	Landscape Designation	Thornhill Uplands RSA
Direction of view	North-west	Distance to nearest turbine	2.2 (nearest visible turbine is 3.9km)
Number of turbines with hubs theoretically visible	5	Number of turbines with blades theoretically visible	13

- 6.224 The viewpoint is located on the track that forms part of the Southern Upland Way, along the upper south-eastern edge of Wanlockhead. This location is elevated at the edge of the settlement, and represents more open views from higher properties and from the Southern Upland Way as it approaches the settlement from Lowther Hill. Being above the settlement, this location has a more open view than within the settlement.
- 6.225 Principal receptors of this view include walkers on the Southern Upland Way and the residents of this upper part of Wanlockhead.
- 6.226 The viewpoint is located on a track that runs from the B797 to a few houses on the higher slopes above the village, beyond which the Southern Upland Way continues as a rough path out across the moorland towards Lowther Hill. The view towards the Development Area is along the Mennock Water valley with Wanlockhead in front. The buildings of Wanlockhead are arranged along roads that run round the slopes

of the valley sides, and the houses tend to face outwards from the slopes they are on. Relatively few houses of Wanlockhead face north-west along the Mennock Water, but these include the terraced houses on Fraser Terrace, the roofs of which can be seen below the viewpoint (at the base of the photographs in **Figure 6.14**). In the view from the viewpoint, beyond the houses and scattered trees, the moorland hills form steep sides and rounded tops. On closer inspection, marks, tracks and workings can be seen all over the hill slopes, remnants of the former industrial workings in the valley. It is clear that although this is now a quiet valley, it was formerly a busy mining area.

Sensitivity

- 6.227 This viewpoint is located at the edge of a settlement, such that key viewers include local residents, but it is also on the Southern Upland Way. Viewers are therefore judged to be of high susceptibility to changes in views. The landscape around this viewpoint is valued locally as part of the extensive Thornhill Uplands RSA. The sensitivity is judged to be high.

Magnitude of Change

- 6.228 A number of turbines will be visible on the horizon downstream to the west, some seen on the skyline, others with the backdrop of land beyond. The turbines will be set low on the hills, and will be legible as being beyond and not on the edge overlooking the valley of the Wanlock Water. The turbine blades will be eye catching features when walking down the slopes towards Wanlockhead, although less prominent in the view than from higher up, such as on Lowther Hill (see VP6). No infrastructure elements will be visible from this location. The juxtaposition in the view of old mine workings and new renewable energy technology will create an interesting contrast in use of this landscape and reflects a continuation use of the use of this landscape for supporting infrastructure. Overall, there will be a high magnitude of change with the introduction of the turbines on the hills above the valley.

Effect

- 6.229 The visual effect seen at this location is judged to be **significant (major)**.

N.B: Viewpoint VP5 has been omitted due to lack of visibility with final design.

VP6 Lowther Hill

Grid Reference	NGR 288967 610768	Figure Number	6.15
LCT	DG: 19 Southern Uplands	Landscape Designation	Leadhills and Lowther Hills RSA
Direction of view	West	Distance to nearest turbine	3.4km
Number of turbines with hubs theoretically visible	35	Number of turbines with blades theoretically visible	35

- 6.230 The viewpoint is located on the top of Lowther Hill, near the buildings and dome of the NATS radar tracking station. Lowther Hill and Green Lowther form the highest part of the Lowther Hills area of the Southern Uplands.
- 6.231 Principal receptors of this view include walkers following the Southern Upland Way that passes over Lowther Hill, a little to the south of the dome, who have come from, or will descend to Wanlockhead. Similar views are seen from the hills, tops and uplands around the viewpoint, such as Green Lowther and East Mount Lowther.
- 6.232 This viewpoint has an extensive 360° panoramic view, extending across and down Nithsdale towards Dumfries, over the Hart Fell Hills and into the Scottish Borders, to Tinto and beyond within South Lanarkshire and into Ayrshire beyond Cumnock. There is no clear focus to the view, as the eye is drawn across the whole panorama, along the distant horizon, though there are eye-catching features including Clyde Windfarm on hills to the north and east, and the masts on Green Lowther. The foreground of the existing view west is of the broad hill top, although if one is standing on the edge of the flat summit plateau, one can see the winding road up the flanks of the hill and the route of the SUW up Whiteside and Stake Hills. Wanlockhead is visible below, within the Wanlock valley which extends away from the

viewpoint. The hills of the Development Area form rounded interlocking hills with heather and grass showing evidence of muir burn with patches and tracks.

Sensitivity

6.233 This viewpoint is located on the summit of a well-known hill, beside the 'golf ball' like radar dome that is a landmark in many views. It is valued as a landmark, and is a key part of the RSA designation. Viewers include walkers on the SUW, and who are judged to be of high susceptibility to changes in views. As such, the sensitivity of this viewpoint is judged to be high.

Magnitude of Change

6.234 The Development will be seen as an array of turbines to the west, as lines of turbines back-clothed against more distant land, on the interlocking ridges that form the Development Area. The turbines on the Reecleuch to Slough Hill ridge in the northern part of the Development Area will be seen on the hills above Wanlockhead, beyond the Wanlock Water valley. The turbines on White Dodd to Brown Hill in the southern part of the Development Area will be noticeably closer to the viewpoint than most. The tracks between the turbines will be visible on several ridges, and transformers may be visible for closer turbines, where the bases are seen. The section of track that runs from Glengaber Hill to Stood Hill and White Dod may be visible in part, as an additional track through the hills, beyond the existing tracks on Black Hill.

6.235 The Development will therefore be seen as a large development from this viewpoint, but will be considerably smaller than the Clyde Windfarm visible to the east. The Development will introduce turbines to the views west from Lowther Hill, therefore the magnitude of change is judged to be high, although there are other windfarms in the views from Lowther Hill.

Effect

6.236 The visual effect seen at this location is judged to be **significant (major)**.

VP7 Mennock Pass

Grid Reference	NGR 284999 610488	Figure Number	6.16
LCT	DG:10 Upland Glen	Landscape Designation	Leadhills and Lowther Hills RSA
Direction of view	North	Distance to nearest turbine	846m (T12)
Number of turbines with hubs theoretically visible	1	Number of turbines with blades theoretically visible	2

6.237 This viewpoint is located in the narrow valley called the Mennock Pass, on a terrace on the valley sides at the site of an earthwork cross (see **Chapter 10**). The valley is a very narrow, steep sided V shaped valley with moorland slopes and a strong sense of enclosure, as views are contained within a short section of the twisting valley. Viewers include road users on the B797 and people who stop at the informal laybys near this viewpoint.

6.238 The views from this location are contained within the narrow valley, which includes a narrow grassy floodplain with the river and the road, but dominated by the steepness and scale of the slopes which are scree and moor covered, leading up to an undulating open skyline. There are no trees in this view, but there is evidence of moorland management through muir burn, and sheep tracks up and across the slopes.

Sensitivity

6.239 This viewpoint is located in a distinctive narrow pass. It is valued as a remote place, and is a key part of the RSA designation. Viewers include road users and people who stop to spend time in the valley, and who are judged to be of high susceptibility to changes in views. As such, the sensitivity of this viewpoint is judged to be high.

Magnitude of Change

6.240 The Development will be seen as two turbines on the high skyline to the north, as hubs and part towers overlooking the steep sided corrie that is drained by the Beer Burn. No other infrastructure elements will

be visible. The turbines will be located on the ridge that forms the horizon, albeit set back from the horizon so that they are screened in part. The turbines will be close to the viewpoint, and on considerably higher ground such that viewers will look up to see them above the high horizon. The turbines will contrast with the still remote character of the pass by introducing modern moving structures. The magnitude of change is judged to be high from this location, although visibility changes for different places within the narrow valley.

Effect

6.241 The visual effect seen at this location is judged to be **significant (major)**.

VP8 Auchentaggart Moor

Grid Reference	NGR 280986 609192	Figure Number	6.17
LCT	Upper Dale	Landscape Designation	Thornhill Uplands RSA
Direction of view	North-east	Distance to nearest turbine	3.5km
Number of turbines with hubs theoretically visible	13	Number of turbines with blades theoretically visible	16

6.242 This viewpoint is located on Auchentaggart Moor, on the ridge of Auchentaggart Hill. The viewpoint is on a track that runs along this ridge and across the moor, which is a core path. Auchentaggart Hill forms a subtle ridge along the edge of Nithsdale, with the moor lying between this ridge and the slopes of the hills.

6.243 The main receptors of this view are those using the track, but this location can also be used to represent views from Sanquhar Moor, over which the SUW passes, and locations south of the Development Area from across Nithsdale, including around Eliock and Criagdarroch.

6.244 The views from this location extend over settled Nithsdale to the hills beyond. The valley floor and settlements of Sanquhar and Mennock are not visible due to the foreground of the moor, but the lower wooded slopes opposite are seen to rise to moor or forest covered hill slopes and an undulating horizon. There are windfarms visible on the horizon to the south-west, and windfarm construction activity was visible in clear conditions at the time of field visits.

6.245 To the north-east, in the direction of the Development Area, the view is over well maintained stone walls containing pasture fields, with a coniferous plantation nearby to the north. The middle distance is of undulating moorland with occasional trees and small woodlands, including trees associated with scattered properties (including Muirhead). The hill slopes rise up beyond to smooth domed hills with patchy moorland and heather due to muirburn. The radar dome on Lowther Hill is visible to the east, and Knockenhair is identifiable to the north as having forest plantations on its slopes.

Sensitivity

6.246 This viewpoint is located on a track along a subtle ridge overlooking Nithsdale, a core path close to Mennock or Sanquhar. The viewpoint is located within the RSA, but is not a key feature in the area. Viewers are likely to include farm workers and walkers on the track. The sensitivity of this viewpoint is judged to be medium.

Magnitude of Change

6.247 The Development will be seen as an array of turbines on the horizon to the north, as a regularly spaced line of turbines, appearing to curve to the east end as the hill ridges turn away from the viewer. Infrastructure including tracks between the turbines will not be visible from this location. The turbines will be seen on the skyline with hubs and towers visible, although set lower on the horizon at each end of the row, and with two blade tips also visible beyond. The turbines will form prominent features on the horizon to the north, and as large moving structures, albeit over 3.5km away, will have a high magnitude of change to views of the valley from this panoramic location.

Effect

6.248 The visual effect seen at this location is judged to be **significant (major)**.

VP9 Sanquhar Golf Course

Grid Reference	NGR 277582 609279	Figure Number	6.18
LCT	Upper Dale	Landscape Designation	none
Direction of view	North-east	Distance to nearest turbine	5.7km
Number of turbines with hubs theoretically visible	13	Number of turbines with blades theoretically visible	17

- 6.249 This viewpoint is located on the minor road that runs along the edge of the golf course, on the south side of the river opposite Sanquhar. The SUW passes along this road, and this location is representative of views from the golf course, and from some parts of Sanquhar, as well as from other locations on the lower slopes and valley floor in this section of Nithsdale. Viewers therefore include road users, SUW walkers, golfers and local residents.
- 6.250 The views from this location extend over settled Nithsdale to the east. The valley floor and settlements of Sanquhar and Mennoch are visible beyond the river, beyond which pasture fields rise up to a low ridge formed by Sanquhar Moor and Auchentaggart Hill. Beyond this, the tops of the moor covered hills form an undulating horizon. The radar dome on Lowther Hill is visible to the east, as are the masts on Green Lowther Hill.
- 6.251 In other directions, views are foreshortened by local vegetation, although the two turbines of Sunnyside are visible to the north-west on the slopes below Todholes Hill. In other directions, the view is contained by the slopes of the Golf course, and south-eastwards, by the trees around Euchar Bridge.

Sensitivity

- 6.252 This viewpoint is located on a minor road used for recreational walking, and adjacent to a golf course. The sensitivity of this viewpoint is judged to be high.

Magnitude of Change

- 6.253 The Development will be seen as an array of turbines on the horizon to the north, beyond the valley landscape, and set behind the hills that form the skyline. The turbines will have relatively even spacing, although some will appear to overlap towards the east end, where the line of turbines turns away from the viewer. The turbines will be seen on the skyline with hubs and part towers visible, although the hills that they are on are, in places, only just visible beyond the middle distance ridge. It may therefore be difficult to judge how far away the turbines are in this view. The turbines will be the horizon as moving structures seen over the buildings of Sanquhar to the north-east. There will be a medium magnitude of change to the view.

Effect

- 6.254 The turbines will be prominent in this view, and using a precautionary approach, the visual effect seen at this location is judged to be **significant (major)**.

VP10 Crawick Multiverse Park

Grid Reference	NGR 277643 611781	Figure Number	6.19
LCT	DG: 9 Upper Dale	Landscape Designation	None
Direction of view	North-east	Distance to nearest turbine	4.3km
Number of turbines with hubs theoretically visible	14	Number of turbines with blades theoretically visible	19

- 6.255 The viewpoint is located on the top of the Belvedere, the highest point within the Crawick Multiverse Park. The Multiverse Park is a recently opened land art project, on the site of a disused open cast mine. Located on the flanks of the upper Nithsdale valley, it affords not only views of the new landforms and stone structures within the parkland, but also views out across upper Nithsdale.

- 6.256 Principal receptors of this view include the visitors to the sculptured landscape, but similar views are also seen from other locations around Crawick and Sanquhar.

- 6.257 This viewpoint on the Belvedere has panoramic views up and down upper Nithsdale, and across to the hills to the south-west. The principle view from the Belvedere is south, with the eye strongly drawn to follow the 'North-South Line', a straight path lined with standing stones that runs due south from the Belvedere, beyond which lies Crawick and Sanquhar and an undulating hill horizon. Further west, the panorama extends up the valley towards Cumnock, with Corsencon Hill framing the valley to the north, and Hare Hill with a windfarm forming the western limit of the undulating hill horizon that extends across the southern panorama. To the north of Nithsdale the hills are higher with steeper, more pronounced slopes, with forest blocks on some hills, and a more varied horizon. The view towards the Development Area is north-east, looking along the northern flanks of Nithsdale to the rounded hills behind. The radar dome on Lowther Hill and the masts of Green Lowther Hill are visible on the horizon.

Sensitivity

- 6.258 This viewpoint is located on the focal summit within the Multiverse Park, a location that many visitors are likely to visit and pause for the view. Viewers include recreational visitors and tourists, who are judged to be of high susceptibility to changes in views. As such, the sensitivity of this viewpoint is judged to be high.

Magnitude of Change

- 6.259 The Development will be visible as a series of turbines on the horizon to the north-east, seen on the undulating skyline as an array with more turbines visible in the distance to the right of the group. Although the turbines will be clearly legible as being set behind the horizon, they will be seen, some to almost full height, on the skyline. No infrastructure elements will be visible from this location. The turbines will be seen as large moving objects on the hills to the north-east, albeit not in the direction of main views from the Belvedere down across the Multiverse Park and to Sanquhar. Overall, the Development will have a high magnitude of change to the panorama north-east from this location.

Effect

- 6.260 The visual effect seen at this location is judged to be **significant (major)**.

VP11 B740, Corsebank

Grid Reference	NGR 280667 616159	Figure Number	6.20
LCT	DG: 19 Southern Uplands	Landscape Designation	None
Direction of view	East	Distance to nearest turbine	1.3km
Number of turbines with hubs theoretically visible	3	Number of turbines with blades theoretically visible	5

- 6.261 The viewpoint is located on the B740, at a point approximately 500m south of Corsebank Farm where the narrow valley floor opens out to a flat field and allows more of a panorama of the surrounding hills than at other, narrower points along the public road. Located within the Crawick Water Valley, the views from this location are contained within the valley. Principal receptors of this view include users of the B740, a narrow, winding road that runs between Crawick and Crawfordjohn.
- 6.262 This viewpoint has short panoramic views within the Crawick Water valley, with steep slopes on the other side of the watercourse, particularly the flanks of Craignorth Hill (423m AOD) to the north, that rises in scree slopes up from the watercourse at 220m AOD. The B740 runs along the edge of the valley floor at the break of slope, beside a grazing field that is the flat floodplain, with the watercourse running round the other edge of the floodplain. Immediately beyond the watercourse, the hills rise up in rugged, heather covered slopes with water eroded gullies, to a smooth profiled horizon. The most distant land visible from this location is to the south, where Fingland Rig is visible (426m AOD) above the building and tree tops of Nether Cog.

Sensitivity

6.263 This viewpoint is located on a minor road, and although it is one of the key passes through the hills, it is not a place where few people are likely to stop and spend time. The viewpoint does not lie within a designated area. The sensitivity of this viewpoint is judged to be low.

Magnitude of Change

6.264 The Development will be seen as a number of turbines on the horizon of the hills across and along the valley to the east and south-east. Two turbines will be seen over the horizon to the east, above the slopes of Craignorth Hill, as one hub low on the horizon and one blade tip. Three turbines will be seen more prominently to the south-east, on The Dod above Nether Cog. Together these will form moving elements on the open horizon of the valley, which will be prominent in views when travelling south. No infrastructure will be visible from this location. Overall the magnitude of change is judged to be high.

Effect

6.265 The visual effect seen at this location is judged to be **significant (moderate)**.

VP12 B740, Spango Bridge

Grid Reference	NGR 282375 617915	Figure Number	6.21
LCT	Southern Uplands	Landscape Designation	None
Direction of view	South	Distance to nearest turbine	1.3km
Number of turbines with hubs theoretically visible	0	Number of turbines with blades theoretically visible	3

6.266 The viewpoint is located on the B740, at Spango Bridge, where there is an informal layby near the junction of the Spango Water with the Wanlock Water. Located within the narrow valley, the views from this location are contained within the valley. Principal receptors of this view include users of the B740.

6.267 The valley floor is narrow here, but there are views in several directions up or down steep sided valleys to the rounded hills. The buildings of Spango Bridge are set within small enclosed fields with a few small trees. Coniferous plantations are seen on the slopes to the south, either side of Clackleith Hill.

Sensitivity

6.268 This viewpoint is located on a minor road, and one of the key passes through the hills, it is a place where a few people stop and spend time, given the presence of the layby. The viewpoint does not lie within a designated area. The sensitivity of this viewpoint is judged to be low.

Magnitude of Change

6.269 The Development will be seen as a number of turbine blades on the horizon to the south, seen over the forest on the flanks of Clackleith Hill. The turbines will be set low on the horizon, and the blades are likely to be screened by the trees, which will be retained as part of the forest plan. The turbines may therefore be seen by people at the viewpoint, but are unlikely to be noticed when passing along this section of the road. No high level infrastructure will be visible from this location, but the Development Area entrance (Access A) that leaves the B740 to go past Clackleith will have track improvement works that may be visible from this location, particularly as the track crosses the Wanlock Water just to the north-east of the viewpoint. Overall, however, the magnitude of change is judged to be low.

Effect

6.270 The visual effect seen at this location is judged to be **not significant (minor)**.

VP13 B740 above Crawfordjohn

Grid Reference	NGR 288102 624115	Figure Number	6.22
LCT	SL: 8 Upland River Valley	Landscape Designation	Leadhills and Lowther Hills RSA
Direction	South-south-west	Distance to nearest turbine	7.8km

of view			
Number of turbines with hubs theoretically visible	13	Number of turbines with blades theoretically visible	25

6.271 The viewpoint is located on the B740 to the north of Crawfordjohn, approximately 200m from the village edge at a field gateway. From this approach to the settlement, there is an overview of the village with the valley and hills beyond. It is therefore one of the locations near the village with the widest panoramic views, as views from within the settlement are restricted by the buildings of the settlement itself.

6.272 Principal receptors of this view include road users approaching Crawfordjohn, but it is also representative of views seen from the settlement and other locations within the Duneaton Water valley.

6.273 The view from the B740 part way up the flanks of the Duneaton Water Valley is a panorama over gently sloping pasture fields with walled boundaries and wooded shelterbelts. Crawfordjohn is a small collection of buildings to the south, although there are other farm buildings within the valley, located along the minor road that runs to the north of the watercourse. On the other side of the valley, Mill Scar (427mAOD) is a forested hill, forming the horizon in that direction. To the east, the view extends down the Duneaton Water valley, with a mast visible on Craighead Hill and a number of turbines of Clyde Windfarm visible beyond. The view towards the Development Area is over Crawfordjohn itself, to open and forested hills in the distance up the Duneaton Water Valley, framed by Mill Scar and the shelterbelts on the flanks of Moutherrick Hill (427m AOD), although there are roadside trees near the viewpoint.

Sensitivity

6.274 This viewpoint is located on a road at the edge of a settlement, such that viewers include both road users and local residents. Being within the Leadhills and Lowther Hills RSA, the landscape at the viewpoint is judged to be of locally designated value. The sensitivity at this location is judged to be medium.

Magnitude of Change

6.275 The Development will be seen as an array of turbines on the horizon beyond Crawfordjohn, to the south along the Duneaton Water. No infrastructure will be visible, but the turbines will be seen on the skyline, a few with their towers visible, others as hubs or blades low on the horizon. The turbines will be eye-catching features in the view as one approaches Crawfordjohn, more so than the existing turbines of Clyde Windfarm which are perpendicular to the direction of travel along this road. Overall, the magnitude of change is judged to be medium.

Effect

6.276 The visual effect seen at this location above Crawfordjohn is judged to be **significant (moderate)**.

VP14 B740/B7078 Junction

Grid Reference	NGR 289065 625907	Figure Number	6.23
LCT	Plateau Moorlands	Landscape Designation	Edge of Leadhills and Lowther Hills RSA
Direction of view	South-west	Distance to nearest turbine	9.8km
Number of turbines with hubs theoretically visible	13	Number of turbines with blades theoretically visible	27

6.277 This viewpoint is located close to the junction of the B740 that runs to Crawfordjohn and on to Crawick, with the B7078 that runs parallel to the M74. This viewpoint is selected to represent views from these smaller roads as well as views from the M74. Key viewers are road users as there are few houses nearby, though National Cycle Network route NCN 74 runs adjacent to the B7078.

6.278 The junction is of two relatively busy roads (though not equivalent to the M74), with the entrance to a quarry to the north, and a steel pylon mounted power line running parallel to the B7078. A line of coniferous trees forms a shelterbelt along the B7078, and the cycle route is not visible from the photography location. Wider views from this location are around relatively flat moor that surrounds the

viewpoint, leading to rounded hills to the east, on top of which can be seen the turbines of Clyde Windfarm, north to the M74 running across the flanks of moorland hills with Tinto Hill as a distinctive hill in the distance, and west across broad flat moorland to distant forest plantations where wind turbines were being built at the time of field visits (Middlemuir and Andershaw Windfarms). The view south towards the Development Area is over pasture fields with wall boundaries and coniferous shelter belts, towards Mill Scar (427mAOD) and Drake Law (484m AOD) that are forested, and the open tops of Moutherrick Hill (427m AOD), and distant glimpses of open hills beyond. The pylon line is seen crossing this view along the B740.

Sensitivity

6.279 This viewpoint is located on a road near a busy road junction, such that key viewers are road users, with similar views being seen by cyclists on the NCN74 route. Being at the edge of the Leadhills and Lowther Hills RSA, the landscape south of the viewpoint is judged to be of locally designated value. Overall, the sensitivity at this location is judged to be low.

Magnitude of Change

6.280 The Development will be seen as an array of turbines on the horizon in the distance between Mill Scar and Moutherrick Hill. No infrastructure will be visible at this distance, the turbines will be seen on the skyline, a few with their towers partially visible, but most as hubs or blades low on the horizon. The turbines will form distant yet potentially eye-catching features in the view when travelling south. The turbines will be further away than those of Clyde Windfarm, and considerably further from the viewer than those of Middlemuir/Andershaw Windfarms. The Development will therefore bring additional turbines into the views seen from this location, to the south rather than east or west, but as more distant elements. Overall, the magnitude of change is judged to be low.

Effect

6.281 The visual effect seen at this location is judged to be **not significant (minor)**.

VP15 Todholes Hill

Grid Reference	NGR 274550 614997	Figure Number	6.24
LCT	Southern Uplands	Landscape Designation	None
Direction of view	East	Distance to nearest turbine	6.9km
Number of turbines with hubs theoretically visible	24	Number of turbines with blades theoretically visible	28

6.282 Todholes Hill is located on the north side of Nithsdale, overlooking Kirkconnel. It has a telecommunications mast on the top, and a track that makes it accessible, off the moorland road to Finland. Receptors include a small number of road users and informal recreational visitors.

6.283 The view from this location is a panorama over interlocking rounded moorland hills to the west north and east, with a view over and across Nithsdale to the south. The Nithsdale valley floor is not visible from this location, but the lower slopes with pastures and coniferous shelterbelts, and rising moor and forested hills are visible. Windfarms and windfarm construction activities were visible beyond Nithsdale at the time of field visits (Whiteside and/or Sanquhar Windfarms). The radar dome on Lowther Hill is also visible from this location, and some turbines of Clyde Windfarm are visible in good conditions.

Sensitivity

6.284 This viewpoint is located on the summit of a hill with a mast, close to a remote road that few people use. It is not part of a designed area, though it is representative of views from hills to the west of the Development Area. The sensitivity of this viewpoint is judged to be low.

Magnitude of Change

6.285 The Development will be seen as a relatively regular array of turbines to the east, set low on an intermediate horizon such that most turbines will be seen against the backdrop of land beyond, including Lowther Hill. The Development will be seen as a large group of turbines on the same range of hills as Todholes Hill, between it and Lowther Hill, in front of and closer than Clyde Windfarm. No infrastructure

will be visible from this location. Whilst the Development will be an additional windfarm in the view, it will be in a less prominent place in the panorama from this location than the windfarms on the south side of Nithsdale. The magnitude of change is judged to be medium.

Effect

6.286 The visual effect seen at this location is judged to be **not significant (minor)**.

VP16 Kelloholm

Grid Reference	NGR 274184 611257	Figure Number	6.25
LCT	DG: 9 Upper Dale	Landscape Designation	None
Direction of view	North-east	Distance to nearest turbine	7.7km
Number of turbines with hubs theoretically visible	15	Number of turbines with blades theoretically visible	21

6.287 The viewpoint is located on Robertson Road, on the eastern fringe of Kelloholm. Kirkconnel and Kelloholm form a settlement located on the Nithsdale valley floor, close to the junction of the Kello Water from the south with the River Nith. Views from within these settlements are restricted by the structures of the settlements themselves, but from unobstructed areas views extend out across upper Nithsdale to the hills that frame the valley.

6.288 Principal receptors of this view include the residents of Kelloholm, but it is representative of views from other locations around Kelloholm and Kirkconnel, and similar views can be seen from locations elsewhere along upper Nithsdale.

6.289 This viewpoint on Robertson Road is a 180° panorama looking obliquely from the road, across the Upper Nithsdale valley. The foreground is across a field at the edge of the settlement, with the buildings of the eastern part of the settlement containing views to the north, west and south. The trees along the Kello Water contain views to the east. Beyond these to the north-east, the broad valley of Nithsdale can be seen, as wooded lower slopes extending up large fields with walls and occasional field boundary trees, from pasture land to rough moorland on higher slopes. Two turbines of Sunnyside are visible in the distance, uphill of a series of bings that mark the opencast workings on the far slopes of Nithsdale¹². The horizon is undulating, and of open moor and forest plantations on the hills. In the distance, Lowther Hill is recognisable with the golf-ball radar dome on the summit, and the Green Lowther masts are also visible.

Sensitivity

6.290 This viewpoint is located at the edge of a settlement, such that key viewers include local residents, who are judged to be of high susceptibility to changes in views. Although the viewpoint is not located in a designated area, the sensitivity is judged to be high due to the proximity of residential properties.

Magnitude of Change

6.291 The Development will be seen as an array of turbines on the hills to the east, seen across the valley landscape. The turbines will appear to be relatively regularly placed on the hills visible, but will appear to have closer spacing where the line of turbines turn away from the viewer. The turbines will be seen generally located behind the ridges of the hills that form the horizon for Nithsdale, with hubs and part towers visible, although a few turbines will be seen in front of more distant hills. The turbines furthest to the right (east) of the array will be seen in front of the Green Lowther to Lowther Hill ridge. The turbines will form moving structures seen beyond Nithsdale in this view, seen beyond the bings, as prominent features on the horizon, with a medium to high magnitude of change to the relatively framed view.

Effect

6.292 The turbines will be prominent in this view, and using a precautionary approach, the visual effect seen at this location is judged to be **significant (major)**.

¹² Only one of the turbines of Sunnyside was constructed at the time of photography.

VP17 SUW Whing Head

Grid Reference	NGR 275085 605642	Figure Number	6.26
LCT	Southern Uplands	Landscape Designation	None
Direction of view	North-east	Distance to nearest turbine	10.0km
Number of turbines with hubs theoretically visible	25	Number of turbines with blades theoretically visible	32

6.293 This viewpoint is located on the ridge of the hills that form the southern side of Nithsdale, at a point where the Southern Upland Way crosses the ridge, and therefore provides the first views over Nithsdale for northbound walkers. Viewers are therefore recreational walkers using the SUW. This viewpoint can also be used to represent views from other hills on this ridge, and views from the north facing flanks of Nithsdale.

6.294 The view from this location is a panorama over a broad moorland ridge, with forest plantations to the east and west, though not close to the viewpoint. The ridge is broad, such that views south do not extend down into the valley of the Scaur Water, though distant hills are seen in all directions. The view north extends down the slopes to Nithsdale, notable as green pasture fields contained by walls with shelterbelts, in contrast with the open brown moorland of the hills. Kelloholm and Sanquhar are visible as settlements in the valley. The hills beyond include Lowther Hill with the radar dome. Two turbines at Sunnyside are visible on the slopes opposite, and turbines and track construction activities to the west of Whing Head were visible at the time of field visits (Sanquhar Windfarm, with Hare Hill Windfarm beyond).

Sensitivity

6.295 This viewpoint is located at the highest point of the SUW between Sanquhar the Scaur Water. Viewers include walkers on the SUW, who are judged to be of high susceptibility to changes in views. As such, the sensitivity of this viewpoint is judged to be high.

Magnitude of Change

6.296 The Development will be seen as a regular array of turbines to the north-east, set on the lower hills to the west (left) of Lowther Hill and Green Lowther. Some of the turbines will partly be seen against the backdrop of land beyond, most will be seen on the skyline. Most turbines will have hubs and part towers visible, a few will be visible as blades over the horizon only. The tracks between some turbines may be visible in clear conditions. The Development will be seen as a large group of turbines on the hills on the far side of Nithsdale, but separate from Lowther Hill. Whilst the Development will be an additional windfarm visible from this location, it will be in a prominent place in the panorama, being across Nithsdale rather along the same side of the valley. This is also due to the fact that northbound SUW walkers will see this panorama at the top of Whing Head, then travel towards the Development. The magnitude of change is judged to be high.

Effect

6.297 The visual effect seen at this location is judged to be **significant (major)**.

VP18 Auchenknight

Grid Reference	NGR 283930 597851	Figure Number	6.27
LCT	Foothills	Landscape Designation	Thornhill Uplands RSA, edge of Drumlanrig GDL
Direction of view	North	Distance to nearest turbine	13.3
Number of turbines with hubs theoretically visible	14	Number of turbines with blades theoretically visible	23

6.298 Auchenknight is a farm on the Drumlanrig Castle Estate, approximately 1.5km to the south of the castle. The viewpoint on the minor road near the farm is used as a location with open views to the north, unlike most of the wooded estate. Effects on Drumlanrig Castle and the Inventory listed designed landscape are also considered in **Chapter 10**. Principle viewers at this location are those at the farm and using the minor road.

6.299 The views from this location are contained by the local topography to the south-west, but extend out over the broader Nithsdale valley to the north, over pasture fields in the foreground and woodlands in the middle distance. Beyond the deciduous and mixed estate woodlands in the middle ground, which mark the Drumlanrig Estate, there are coniferous plantations, and glimpses of pasture fields further north within Nithsdale. The hills to the north of Nithsdale form the distant horizon, with Lowther Hill visible in the distance. To the south, views extend down Nithsdale to the Ae forest, with Harestanes Windfarm visible south of Queensberry.

Sensitivity

6.300 This viewpoint is located at one of the higher and more open locations within the Drumlanrig Castle Estate. Viewers are relatively few, but the viewpoint is located within the RSA and at the edge of the area listed as an Inventory designed landscape. Overall, the sensitivity of this viewpoint is judged to be medium.

Magnitude of Change

6.301 The Development will be seen as a regular array of turbines on the distant hills to the north-east, set on the horizon to the left (west) of Lowther Hill. The turbines will be seen against the sky, with hubs and part towers visible. The Development will be seen as a group of turbines on the hills in the distance, where there are no other windfarms visible. Whilst the Development will be on the skyline in the view, it will be a distant feature and less prominent than the dome on Lowther Hill. The magnitude of change is judged to be low.

Effect

6.302 The visual effect seen at this location is judged to be **not significant (minor)**.

VP19 A76, Closeburn

Grid Reference	NGR 289099 593250	Figure Number	6.28
LCT	DG: 7 Middle Dale	Landscape Designation	Thornhill Uplands RSA
Direction of view	North	Distance to nearest turbine	18.5km
Number of turbines with hubs theoretically visible	7	Number of turbines with blades theoretically visible	13

6.303 This viewpoint is located on the A76 near Closeburn, to the south of Thornhill within Nithsdale. This location represents distant views from the south seen by road users on the A76 on the Nithsdale valley floor. There are very limited views from Thornhill due to local screening by buildings and trees, but this location to the south of the settlement has open views to the north. Principal receptors of this view are road users on the A76, but similar views may be seen by local residents around Closeburn and in other parts of Nithsdale.

6.304 The viewpoint is located at the junction of the A76 with a minor road close to the entrance to Trigony House Hotel. It is on a slight rise, with no woodland screening to the north and therefore open views north. The view towards the Development Area is slightly oblique to the busy road, ahead of northbound travellers. The foreground is of a low wall and a large ley pasture field. In the middle distance, the railway is visible with a pole mounted power line along it, and the buildings associated with Cample and New Cample are visible before the landscape becomes more wooded around Thornhill. The horizon is of distant undulating hills surrounding the broad valley, with occasional patches of forest on the flanks. In other directions, the view is contained by woodland near Trigony House, but extends southwards down Nithsdale over the broad valley floor and low forest covered sides, with the turbines of Dalswinton Windfarm visible over the forest.

Sensitivity

6.305 This viewpoint is located on a busy road, such that key viewers are road users, although there are properties and therefore residential viewers nearby. The viewpoint lies within Nithsdale, within the Thornhill Uplands RSA and therefore has locally valued designation. The overall sensitivity of this viewpoint is judged to be medium.

Magnitude of Change

6.306 The Development will be seen as very distant turbines on the horizon to the north, on the hills at the head of Nithsdale. The turbines will form very small elements in the panorama and are unlikely to be eye-catching features. The magnitude of change is judged to be low.

Effect

6.307 The visual effect seen at this location is judged to be **not significant (negligible)**.

VP20 Blackcraig Hill

Grid Reference	NGR 264797 606445	Figure Number	6.29
LCT	Southern Uplands	Landscape Designation	East Ayrshire SLA
Direction of view	East	Distance to nearest turbine	18.2km
Number of turbines with hubs theoretically visible	32	Number of turbines with blades theoretically visible	35

6.308 This viewpoint is located near the trig point on Blackcraig Hill, one of the hills that form the southern side of Nithsdale, overlooking Glen Afton and New Cumnock. Viewers are limited to a relatively small number of recreational walkers. This viewpoint can also be used to represent views from other hills on this ridge, and views from the north facing flanks of Nithsdale.

6.309 The view from this location is a panorama over a broad moorland ridge, with Southern Upland hills in all directions except west. The hills are rounded in form, with forest plantations on many slopes, including extensive forests to the south and west. The ridge of Blackcraig Hill is broad such that views south do not extend down into the valleys around it. In the distance to the west, the lowlands of Ayrshire are visible.

6.310 The view towards the Development Area is across the moor and rock strewn summit of the hill, to more distant interlocking slopes that descend to Nithsdale. The turbines of Hare Hill Windfarm, on the lower slopes of Blackcraig Hill to the north, are just out of site from the summit plateau but the turbines and track construction activities to the east of Blackcraig Hill were visible at the time of field visits (Sanquhar Windfarm). Nithsdale is seen as a valley of green pasture fields with shelterbelts, contrasting with the brown moorland of the hills on either side, and the two turbines at Sunnyside are visible on the lower slopes. The hills beyond Nithsdale include Lowther Hill with the radar dome, with the turbines of Clyde Windfarm extending beyond and to the left (north) of Green Lowther.

Sensitivity

6.311 This viewpoint is located at the summit of a prominent hill at the head of Nithsdale. Viewers include occasional walkers within the RSA. The sensitivity of this viewpoint is judged to be medium.

Magnitude of Change

6.312 The Development will be seen as a large and distant group of turbines on the hills on the far side of Nithsdale. The turbines will be seen as a distant array to the east, set below the horizon to the left (north-west) of Lowther Hill. The turbines will be seen against the backdrop of land with turbines (Clyde) beyond. Most will have hubs and part towers visible. Whilst the Development will be an additional windfarm in the view, it will be considerably more distant than the windfarms on the south side of Nithsdale, including Hare Hill, Sanquhar and Whiteside Windfarms close to the viewpoint. The magnitude of change is judged to be low.

Effect

6.313 The visual effect seen at this location is judged to be **not significant (minor)**.

VP21 New Cumnock

Grid Reference	NGR 261950 614170	Figure Number	6.30
LCT	AYS: 15 Upland Basin	Landscape Designation	East Ayrshire Sensitive Landscape Area
Direction of view	South-east	Distance to nearest turbine	19.5 (nearest visible turbine is 20.1km)
Number of turbines with hubs theoretically visible	10	Number of turbines with blades theoretically visible	12

6.314 This viewpoint is located on the A76 as it crosses over River Nith and the railway, by New Cumnock station. The viewpoint represents more distant views along upper Nithsdale, views from the settlement and sequential views from the A76. New Cumnock is located in Nithsdale, at a bridging point over the River Nith.

6.315 The view towards the Development Area from this location is perpendicular to a busy road, such that viewers are passengers in vehicles and pedestrians on the opposite (west) side of the road. However, the viewpoint is also representative of views seen by local residents, and road users around New Cumnock. Rail passengers look out of the sides of a train, and at this point the railway runs along Nithsdale, so rail passengers will tend not to look towards the Development Area (in line with the tracks). This view is not available from the station where people wait for trains.

6.316 The view from the road bridge is over the railway track which runs along Nithsdale. To the north of the railway, the buildings of Mansfield sit with a low horizon beyond. To the south of the railway, there are rough grazing fields between the railway and the river, and further pastures up the lower slopes of Nithsdale interspersed with tree lined field boundaries. Further upslope, the vegetation changes to moorland, and the horizon is open without forest. The turbines of Hare Hill are visible on the moorland slopes to the south-east, as hubs and blades on the hill horizon, and a single farm turbine is visible to the south. The view down Nithsdale towards the Development Area is along the railway, with a bridge in the middle distance, beyond which are the more distant slopes up to Corsencon Hill (475m AOD) that forms a distinct landmark. The far distance is made up of Lowther Hill, with the radar dome visible. Two small domestic scale turbines are visible at the edge of New Cumnock. To the south, east and north from this viewpoint, the view is over the busy road with New Cumnock to the south, Mansfield to the north and between, an industrial park and the station on the other side of the road.

Sensitivity

6.317 This viewpoint is located on a busy road within a settlement, such that there are likely to be high numbers of viewers, although not all will be looking at the view. Given that the viewers include local residents, the overall sensitivity of this viewpoint is judged to be high.

Magnitude of Change

6.318 The Development will be seen as a number of very distant turbines seen beyond the foot of Corsencon Hill. Whilst the turbines will be distant elements in the panorama, they will be seen partially in front of Lowther Hill, and may distract from the focus that is the dome. The Development will not introduce turbines as new elements in the landscape, and will be considerably more distant than Hare Hill Windfarm on the southern horizon. Overall, the magnitude of change is judged to be low.

Effect

6.319 The visual effect seen at this location is judged to be **not significant (minor)**.

VP22 Cairn Table

Grid Reference	NGR 272480 624209	Figure Number	6.31
LCT	SL: 7 Rolling Moorland / AYR: 19 Plateau Moorland	Landscape Designation	East Ayrshire Sensitive Landscape Area
Direction of view	South-east	Distance to nearest turbine	12.5km

Number of turbines with hubs theoretically visible	35	Number of turbines with blades theoretically visible	35
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6.320 This viewpoint is located by the cairn on the summit of Cairn Table (593m AOD). Cairn Table is a smooth rounded hill that occupies an elevated position on the northern fringe of the Southern Uplands, overlooking the River Ayr Valley to the north, with a panorama over the Southern Uplands in other directions. Cairn Table is flanked by coniferous forestry on its southern and eastern flanks, but the summit is open. The viewpoint lies on the boundary of an East Ayrshire Sensitive Landscape Area which covers the Plateau Moorland of Ayrshire to the west.

6.321 Principal receptors include walkers to the summit, who stop to see the view. There is an annual hill race to the summit from Muirkirk in July, although participants climb the northern slopes, and don't linger at the top.

6.322 The open moorland slopes of Cairn Table and the forest plantations extending to Wedder Dod (460m AOD) form the foreground and middle ground of views to the south-east, beyond which the rounded summits of the Lowther Hills are visible on the distant horizon. The radar dome on Lowther Hill and masts on Green Lowther are visible, as are the distant turbines of Clyde Windfarm. The extensive coniferous plantations also extend eastwards, screening the opencast coal mining operations that lie near Gelspin. The Tinto and Pentland Hills form the horizon to the east.

6.323 The operational windfarms of Hagshaw Hill, Hagshaw Hill Extension 8km to the north-west, Nutberry Wind Farm 10km to the north-east, Clyde Wind Farm 25km to the south-east and Whitelee Wind Farm 22km north-west are visible from this viewpoint. Andershaw and Middle Muir Windfarms were under construction during the field visits, and are located in the forest to the east of the viewpoint. To the south Hare Hill Windfarm is visible, and Sanquhar and Whiteside Windfarms are under construction.

Sensitivity

6.324 This viewpoint is located on the summit of a popular hill, such that key viewers include recreational walkers, although the approach path is from the north, such that there are no views south during the climb. Nonetheless, viewers are judged to be of high susceptibility to changes in views. Cairn Table lies at the edge of the East Ayrshire Sensitive Landscape Area, and the panoramic 360° views from the summit offer some scenic quality although there are a number of man-made elements in the view, including operational wind turbines, forest plantations, telecommunication masts and opencast coal mining operations. The overall sensitivity of this viewpoint is judged to be medium.

Magnitude of Change

6.325 The Development will be seen as an array of turbines on the hill ridges to the south-east, in front of and below Lowther Hill, with only a few turbines breaking the skyline. The spread of the Development both horizontally and in depth (distance), will be perceptible from this elevated location, with separation between the lines of turbines on different ridges visible. Although there are other windfarms visible from this hill top, to the south, east and north, the Development will be an additional large windfarm in the view, to the south in an area of hills where there are currently no windfarms. The magnitude of change to the panorama as a result of the introduction of the Development is judged to be medium.

Effect

6.326 Overall, the visual effect seen at this location is judged to be **significant (moderate)**.

VP23 Devonburn Road, M74

Grid Reference	NGR 282735 639423	Figure Number	6.32
LCT	SL 5 Plateau Farmland	Landscape Designation	None
Direction of view	South	Distance to nearest turbine	22.5km
Number of turbines with hubs theoretically visible	25	Number of turbines with blades theoretically visible	32

6.327 This viewpoint is located on a minor road near the M74, near Lesmahagow, and is used to represent views from the M74 and local roads and properties.

6.328 The panorama from this location takes in enclosed fields in the foreground, running down to the M74 along which traffic is constantly moving. The hedge and fence bounded pasture fields make up the foreground, with several shelterbelts and hedgerow trees give it a wooded character. The buildings of Lesmahagow can be seen to the west, and several farmsteads are visible. In the middle distance to the south, a number of turbines can be seen along the M74 corridor, and a line of pylons also runs parallel with the M74. Beyond these, there is more forest and rougher ground, leading, in the distance, to forest and moor covered hills. Numerous wind turbines are seen on distant hills, including on Hagshaw and Common Hills (c.8km away) and Andershaw/Middle Muir (c.13km away). The radar dome on Lowther Hill and masts on Green Lowther are visible from this location.

Sensitivity

6.329 This viewpoint is located on a road near a busy motorway, such that key viewers are road users, with similar views being seen by cyclists on the NCN74 route that runs along the B7078 on the far side of the motorway, and potentially by residents at the fringes of Lesmahagow. The landscape around the viewpoint is not within a designated area. Overall, the sensitivity at this location is judged to be low.

Magnitude of Change

6.330 The Development will be seen as a distant array of turbines directly beyond Andershaw/Middle Muir Windfarms. The turbines will be seen low on the horizon, and will be notably more distant and harder to see in many light conditions than the existing windfarms. The magnitude of change is judged to be low.

Effect

6.331 The visual effect seen at this location is judged to be **not significant (negligible)**.

VP24 Tinto Hill

Grid Reference	NGR 295304 634365	Figure Number	6.33
LCT	G&CV: 10 Foothills	Landscape Designation	Upper Clyde Valley and Tinto SLA
Direction of view	South-west	Distance to nearest turbine	20.2km
Number of turbines with hubs theoretically visible	33	Number of turbines with blades theoretically visible	35

6.332 This viewpoint is located at the summit cairn of Tinto Hill (711m AOD), the highest hill within the Tinto Hills, and located within the Upper Clyde Valley and Tinto SLA. The hill is an outlier to the Southern Uplands and is elevated above the surrounding Upper Clyde Valley and upland moorlands. The hill is popular with hill walkers and offers 360° panoramic views.

6.333 Views south-west towards the Development Area are across the rough grazed slopes of Tinto Hill down to the undulating low hills of cultivated farmland, coniferous forestry blocks and open moorland which extend west towards the M74 corridor. Distant hills form the skyline, with geometric coniferous forestry plantations and the windfarms of Hagshaw Hill, its extension and Nutberry as features on the horizon to the west, and Andershaw/Middle Muir turbines further south. To the south and south-west the rounded summits and open moorland of the Lowther Hills form the distant skyline, with the turbines of Clyde Windfarm visible to the south-east. The flat plateau in the north and north-west of the view is dominated by cultivated farmland, woodland blocks and settlements on the southern fringe of Greater Glasgow.

6.334 The operational windfarms of Hagshaw Hill and Hagshaw Hill Extension (15km west), Clyde (9km south-east), Black Law (20km north-west), Whitelee (33km north-west), Lochhead (22km north-west), Glenkerie (15km south-east) and Nutberry Windfarm (15km west) are visible from this viewpoint. Andershaw and Middle Muir Windfarms were under construction during the field visits, and are located in the forest to the south-west of the M74. Other windfarms, including Whitelee and Blacklaw Windfarms are visible in other directions across the central belt¹³.

¹³ Windfarms beyond 15km of the Development have not been included in modelling.

Sensitivity

- 6.335 This viewpoint is located on the summit of a popular hill, such that key viewers include recreational walkers. Viewers are judged to be of high susceptibility to changes in views. The 360° panoramic views from the summit include man-made elements in the view, including operational wind turbines, telecommunication masts and opencast coal mining operations. Tinto Hill is a landmark hill, and a key part of the Upper Clyde Valley and Tinto SLA. Overall, the viewpoint is judged to be of high sensitivity.

Magnitude of Change

- 6.336 The Development will be seen as an array of turbines on the distant hill ridges to the south-west, with only a few turbines breaking the skyline. The spread of the Development will be perceptible from this elevated location, but will be considerably less than that of Clyde Windfarm. However, it will be an additional windfarm in the view, and more distant than the Hagshaw group or Andershaw/Middle Muir Windfarms. Overall the magnitude of change to the panorama is judged to be low.

Effect

- 6.337 The visual effect seen at this location is judged to be **not significant (negligible)**.

Settlements

- 6.338 Settlements within 15km of the Development include Wanlockhead, Leadhills, Mennock, Sanquhar, Kirkconnel/Kelloholm, Crawfordjohn, Elvanfoot, Crawford, Abington, Douglas, Glespin and Carronbridge. Of these, there will be very limited or no theoretical visibility of the Development from Leadhills, Mennock, Elvanfoot, Crawford, Abington, Douglas, Glespin. The other settlements, with some theoretical visibility, are considered below.
- 6.339 Larger settlements in the wider study area include New Cumnock, Cumnock, Dalmellington, Lesmahagow, Lanark, Biggar, Moffat and Thornhill. Of these, there is some theoretical visibility from New Cumnock and Thornhill, which are considered below, and Biggar and Lanark, which are considered to be unlikely to have visual effects due to the distance from the Development.

Wanlockhead

- 6.340 Wanlockhead is contained within the steep sided valleys of the Mennock and Wanlock Waters. Visibility of turbines on the horizon along the Mennock Water is illustrated with various viewpoints¹⁴, including VP4, at a higher elevation on the south-eastern edge of the settlement, VP3 from the valley floor within the settlement, downstream of the Museum, and VP2 on Church Street by the Beam Engine. Each of these views has been judged to have a significant visual effect, and are representative of views from different parts of the settlement. While views from properties will be oblique, and views from Goldscaur Row may not be possible, overall it is judged that views from Wanlockhead will generally be **significant (moderate)**.

Sanquhar

- 6.341 Sanquhar is located on the Nithsdale valley floor, with slopes rising immediately to the north. As a result, there are a limited number of turbines theoretically visible from many properties. Views towards the Development will generally include local buildings and vegetation, and may allow glimpses of the slopes up to Sanquhar Moor, over which a small number of turbines may be visible. Overall, the visual effect on views from Sanquhar is judged to be **not significant (minor)**.

Kirkconnel and Kelloholm

- 6.342 These settlements are located by the River Nith, beside the A76. VP16 is located at the eastern edge of Kelloholm, with an view to the Development across the valley, for which a significant (major) effect has been identified. Given the orientation of some of the properties in Kelloholm, it is likely that some properties will have views of the Development, including rear oblique views from Anderson Street. However, most other properties have views in other directions, and views from Greystone Avenue, although towards the Lowther Hills, will generally have buildings and trees of Kelloholm partly or fully screening views towards the Development. Kirkconnel further north-west, has fewer turbines theoretically visible, and the orientation of the streets and local screening by buildings and trees reduce the potential visibility of the Development from Kirkconnel. Overall it is judged that, given the variety of views around the settlements, and the location of the Development set back from the immediate hills

around the settlement, i.e. seen obliquely along the valley, the effect on the visual experience in Kelloholm will be **not significant (minor)** and **not significant (negligible)** in Kirkconnel.

Crawfordjohn

- 6.343 VP13 is located to the north-west of Crawfordjohn, at slightly higher elevation than the settlement. Similar views are possible from some parts of Crawfordjohn, although these are at lower elevations and are likely to be affected by local screening by buildings or vegetation. Although views of the Development will be possible, the visual effect of the Development on the settlement will be **not significant (minor)**.

Carronbridge and Thornhill

- 6.344 Carronbridge and Thornhill are located to the south of the Development, in well-wooded areas of Nithsdale. There are therefore few open views north from these settlements. VP19 is located on the A76 south of Thornhill, at Closeburn, one of the few locations where open views north are possible. Given the local screening of buildings and woodlands around these settlements, there will be **not significant (negligible)** visual effects.

New Cumnock

- 6.345 VP21 is located on the road bridge over the railway in New Cumnock, illustrating an open view towards the Development. Few other locations within New Cumnock will have this view, and at approximately 21km away, there will be **not significant (negligible)** effects on the visual experience of New Cumnock.

Routes - Roads

- 6.346 Roads considered in the assessment below are key routes through the study area that have theoretical visibility of the proposed development. Roads are shown on OS maps.

A76 and railway line along Nithsdale

- 6.347 The A76 runs along the Nithsdale valley floor, from New Cumnock to Kirkconnel, Sanquhar, Mennock and south to Thornhill. A railway route also follows this route and a minor road runs parallel on the south of the valley from Kirkconnel to Mennock. These routes are used by local people, visitors and people passing through the area. The A76 is a trunk road, and sensitivity is judged to be low.
- 6.348 The ZTV (**Figures 6.1-6.3**) indicates that here will be theoretical visibility from this route from New Cumnock to Sanquhar, beyond which the valley sides will prevent visibility of the Development, until theoretical visibility is regained south of Drumlanrig.
- 6.349 In an east-bound direction, from New Cumnock to Kirkconnel, the Development will be seen in the distance ahead for road users travelling east, on the hills to the north of the valley, in the direction of Lowther Hill. Although there are places with open views from part way up the southern slopes of the valley, overall the Development will have a low magnitude of change to the experience of this route section. From Kirkconnel to Knockenjig, the A76 follows the railway with no views of the hills, although there are views of the hills from the railway and from the minor road to the south of the River Nith. Beyond Knockenjig to Sanquhar there are more open views to the hills of the Development Area, where the turbines will be seen on the skyline when travelling in either direction. From within Sanquhar there are no views to the hills and the Development will not be visible.

- 6.350 Travelling from the south, views from along Nithsdale are limited by woodlands. One short section with views north that are not screened by woodland nearby is around Closeburn, represented by VP19. The wooded nature of the landscape around Drumlanrig, and the frequent hedges and field boundary trees means that there will be very limited visibility of the Development from around Drumlanrig. Beyond Drumlanrig the steep slopes just north of the road and railway prevents views north, and there will be no theoretical visibility of the Development until the Sanquhar area.

- 6.351 The effect on the experience of this route is judged to be **not significant (minor)** for the stretch from New Cumnock to Kirkconnel; from the short stretch from Knockenjig to the edge of Sanquhar (approximately 2km) there may be **significant (moderate)** effects, but there will be **not significant (negligible)** effects for other sections of the route.

B797 from Mennock to Wanlockhead and Abington

- 6.352 This route runs from the A76 at Mennock through the Mennock Pass to Wanlockhead and on to Leadhills and Abington. The route runs through a narrow winding valley that is wooded around Mennock, enclosed

¹⁴ See also Cultural Heritage viewpoint CH2 at Pate's Knowe lead smelter

within very steep sides up the Mennock Water, passes through two settlements before running along the steep sided but straighter Glengonnar Water valley. This is a route through the RSA that is used by local people and visitors, and is judged to be of high sensitivity.

6.353 The Development will be visible as glimpses of large turbines over the valley when seen from the wooded stretch near Mennock (travelling north-bound), with turbines high on the steep enclosing valley sides in glimpses north till the route passes the foot of the Moor End ridge (see VP7). There will be visibility of turbines from the road briefly as it passes through Wanlockhead, as illustrated by VP4. North of Wanlockhead there is no further theoretical visibility except for a brief glimpse of 1-2 turbine tips low on the horizon near Glencaple Farm (c.1.5km from Abington). The pattern of visibility will be the same when travelling south-bound, although the turbines will be behind, and therefore difficult to see, for the section through woodlands near Mennock.

6.354 Overall, the effect on this route is judged to be **significant (moderate)** for road users travelling between Mennock and Wanlockhead, but **not significant (negligible)** for the remainder of the route.

B740 from Crawick to Crawfordjohn

6.355 This route runs from the Nithsdale valley at Crawick, up the narrow and winding Crawick Water valley to Spango bridge before joining the Duneaton Water valley towards Crawfordjohn, after which it passes over a low ridge to join the B7078 near the M74. This is a route along the edge of the RSA, used by local people and visitors, and is judged to be of high sensitivity.

6.356 The ZTV indicates that there will be theoretical visibility of turbines for much of this route. However, the southern stretches of the route are well wooded, such that actual visibility of turbines will be much reduced. North of Nether Cog the vegetation opens out, and a small number of turbines will be seen over the hills to the east in views between Nether Cog and Spango Farm, perpendicular to the route, when travelling in either direction. Further north, from Crawfordjohn to the Snar valley, the Development will be seen as a group of turbines on the horizon to the south by southbound travellers.

6.357 It is judged that the effects on this route will be **significant (moderate)** between Nether Cog and Spango Farm, and not significant (minor) further north. Given the wooded nature of the valley south of Nether Cog, it is judged that effects on this section will be **not significant (negligible)**.

Routes - Paths

6.358 Paths considered in the assessment below are key routes through the study area and close to the Development Area that have theoretical visibility of the proposed development. Paths are shown on **Figure 6.6**.

Southern Upland Way

6.359 It is understood that the SUW is generally walked from west to east, though not exclusively. The experience of the route in an eastbound direction is therefore considered first, with the opposite direction considered thereafter.

East-bound walkers

6.360 South-west of Whing Head the Development will not be visible except for glimpses from the summits of Benbrack, Black Hill and High Coutnam. By this point walkers will have passed several windfarms.

6.361 Upon arrival at the top of Whing Head, the first view of the Development will be possible, as represented by viewpoint VP17. From this point the Development will be seen on the hills beyond Nithsdale, as an array of turbines on the skyline. Construction activity was visible at the time of the assessment on another windfarm site to the west at this point (Sanquhar and/or Whiteside), and views include the two small turbines at Sunnyside and Hare Hill Windfarm on the hills further west.

6.362 As walkers descend towards Nithsdale and Sanquhar, the more distant turbines of the Development will drop out of view, but the closer turbines will become more visible on the skyline. This is represented by VP9 at Sanquhar Golf Course. Within Sanquhar and up the short slopes immediately to the north, the Development will not be visible due to local screening.

6.363 Once the route reaches the top of the Sanquhar/Auchentaggart moor ridge, the turbines will again be visible on the horizon ahead, represented by SUW wire A (**Figure 6.34**). VP8 on Auchentaggart Moor is not on the SUW but can also be used to represent views from it. From this section, Hare Hill and the Sunnyside turbines are visible, as is construction activity on the hills south of Sanquhar.

6.364 As the route starts to ascend towards the Conrig Hill pass, turbines will be seen on the hills above, with the route ascending towards them. This is represented by SUW wire B (**Figure 6.35**). SUW wire C is at the top of the Conrig Hill pass, as the route starts to pass between turbines (**Figure 6.36**). At this point the route will be at its closest to a turbine, T5 at c.200m.

6.365 The SUW descends to Cogshead and then climbs north-east up the side of the valley. From this section, walkers will be below the turbines on the ridge tops. This is represented by SUW wire D on the descent (**Figure 6.37**) and Cultural Heritage viewpoint CH1 at the ruined Cogshead farmstead. From this section no other windfarms are visible. The route ascends to the broad ridge of Glengaber Hill, where walkers will be at the same level as turbines, with views across the Development Area as represented by LVIA VP1 on Glengaber Hill. From Glengaber Hill, the view opens out to the north, over the lower moors with Andershaw and Middle Muir Windfarms under construction, to the Hagshaw group and other more distant windfarms. A few of the turbines of Clyde Windfarm are visible from the SUW as it passes over Glengaber Hill.

6.366 The descent into the Wanlock valley will see the number of visible turbines reduce, with hubs and tips on the horizon behind the walkers as they travel along the valley floor towards Wanlockhead. This is represented by Cultural Heritage viewpoints CH2, CH3, and LVIA viewpoints VP2 and VP3.

6.367 The SUW ascends beyond Wanlockhead towards Lowther Hill, where walkers may turn round and see the turbines on the horizon over the Wanlock valley from VP4, and SUW wire E with additional turbines and more back-clothing as the viewer ascends (**Figure 6.38**). From the top of Lowther Hill, the Development will be visible on the hills over which the SUW walkers have travelled, as represented by VP6 on the summit. At a higher elevation than the Development Area, views from Lowther Hill extend considerably further and include windfarms such as Hare Hill and the Hagshaw Group, and when looking east from Lowther Hill, the extent of Clyde Windfarm is laid out.

6.368 Upon descent from the summit of Lowther Hill eastwards, the Development will no longer be visible, and the SUW travels towards Clyde Windfarm.

West-bound walkers

6.369 For west-bound walkers, the first view of the Development will be from Lowther Hill, and the descent to Wanlockhead will be towards the Development. Once through the Development Area, walkers will be travelling away from the Development, down towards Sanquhar and then up to Whing Head with the windfarms on the south side of Nithsdale visible. The last view of the Development will be if walkers pause and turn round at the top of Whing Head.

Effect

6.370 The effect on the views from the SUW will be **significant (moderate)** for east-bound walkers from the top of Whing Head to Sanquhar, and **significant (major)** from Sanquhar Moor, over the Conrig Hill pass to Cogshead and over Glengaber Hill to Wanlockhead and up to Lowther Hill for walkers in both directions. Significant visual effects will therefore occur for the section of the route between Whing Head and Lowther Hill, except the short section through Sanquhar.

Coffin Road

6.371 This historical route took a route through the hills from Wanlockhead to Sanquhar, following the Glendyne Burn valley. It is understood to have run up the flanks of Black Hill to the south-west of Wanlockhead before crossing the ridge between Black Hill and Stood Hill. From there it followed the contours of the north side of the Glendyne Burn valley below Willowgrain Hill before running eastwards to near Bogg Farm. From there it went south-west to Sanquhar along what is now the Southern Upland Way. The section east of Bogg is within the Development Area. The route runs across open moorland and across steep ground within the Glendyne Burn valley. Views from the high section over Black Hill are panoramic and include views out to the north, towards the Hagshaw group of windfarms, and Clyde Windfarm is visible to the north-east. The windfarms to the south of Nithsdale are visible from the route from the flanks of Stood Hill and as it emerges from the Glendyne valley out towards Sanquhar Moor. The sensitivity of this route is judged to be medium, although it is perhaps less well used by visitors than the SUW, it passes through a remote enclosed valley, with dramatic topography.

6.372 The Development will introduce turbines and tracks onto the hill ridges either side of this route, seen by walkers travelling in either direction. The access track will cross the Coffin Road on the ridge between Stood Hill and Black Hill. There will be four turbines that will be located close to the route (within approximately 300m): T6, T7, T8 and T9, which will be located on slopes above the route. The line of turbines T10 - T14 will be seen on the other side of the valley, also at a higher elevation than the route.

Other turbines of the Development will be visible from the section over Black Hill, and also from the section across Sanquhar Moor there will be views for turbines T1 to T5 on the horizon to the north. Proposed planting of riparian woodland within the Glendyne Burn valley will mean that this part of the route may be partially within deciduous woodland.

- 6.373 The introduction of the Development around this route will alter the character of the route from one that passes over a ridge and down a steep sided narrow moorland valley, to one that passes through down a narrow, steep sided valley with turbines above on either side. There will be direct effects on the route with the access track crossing and planting (the latter a positive change), as well as views from the route of turbines and infrastructure. The effect on the experience of the route is judged to be **significant (major)**.

Muirkirk to Wanlockhead Drove Road

- 6.374 This historical route is a track or path route that runs from Muirkirk in the upper Ayr valley north-west of the Development area, up the Garpel Water valley to Drummond's Knowe and on the Fingland, then east over Lamb Knowe to Spango Bridge, where the track continues past Clackleith to Duntercleuch where it joins the SUW.

- 6.375 When travelling east-bound, from west of Lamb Knowe, there is patchy theoretical visibility over high ground on Drummond's Knowe only, which is a largely forested area. From Lamb's Knowe to Spango Bridge, there will be views of turbines on the hills on the opposite side of the valley, behind Clackleith Hill. These will be seen perpendicular to the route, and therefore visible for walkers in either direction. From Spango Bridge up to Clackleith the track will be used as an access track for the construction and operation of the Development. From this section and beyond, turbines on either side of the valley will be visible for travellers in either direction.

- 6.376 From Lamb Knowe to Spango Bridge, it is judged that there will be **significant (moderate)** effects arising from the views of the array of turbines on the other side of the Spango valley, reducing to hubs and tips on the horizon as the path descends. The section of the route within the Development Area will be partly upgraded as part of the proposed access track, and will have views of turbines on the hills around the valley route, which will have a **significant (major)** effect on the experience of the route section.

Covenanters' Road or Enterkin Pass

- 6.377 This route is a medieval route, from Wanlockhead to Durisdeer mill. The route follows the SUW to the east of Wanlockhead before turning south to run down the narrow Enterkin Burn east of East Mount Lowther. The path then follows a ridge between the Enterkin Burn and the Dalveen Lane, before dropping down eastwards to join the A702.

- 6.378 As this route runs along the SUW up from Wanlockhead, before separating from it for only c.1km before dropping down into the Enterkin Burn, visual effects will as described for the SUW, and similar to those at VP6 on Lowther Hill. The remainder of the route will have no visibility of the Development except for north-bound walkers on a short section on the ridge over the Dalveen Lane with theoretical visibility of a small number of turbines. This is considered to be a **not significant (minor)** effect on the experience of the route section that does not overlap with the SUW.

Cumulative Effects

- 6.379 The aim of the CLVIA is to "describe, visually represent and assess the ways in which a proposed windfarm would have additional impacts when considered together with other existing, consented or proposed windfarms" (para. 55, SNH, 2012^{ix}).
- 6.380 In accordance with good practice guidance^{ix} this assessment considers different cumulative scenarios, in addition to the existing baseline scenario that is considered in the LVIA (referred to in the CLVIA as Scenario 1):
- Scenario 2 - the addition of the Development in the context of operational, under construction and consented windfarm developments i.e. a likely future scenario; and
 - Scenario 3 - the addition of the Development in the context of operational, under construction, consented, undetermined planning applications and windfarm developments currently at appeal i.e. a less certain future scenario.

- 6.381 The process for identifying windfarms excluded single wind turbines of less than 80m to blade tip height and over 5km from the proposed development, although those between 50-80m height to blade tip within 5km were included. Turbines below 50m height to blade tip were excluded. Wind energy developments at scoping stage have not been included, except for Harryburn Windfarm, as requested through consultation.

- 6.382 The methodology for the CLVIA follows that of the LVIA as set out at the beginning of this chapter. The key additional steps in the CLVIA were as follows:

- Preparation of ZTV maps for a selection of other existing or proposed windfarms and combining them to inform the assessment of scenarios and relationships (see **Figures 6.8 - 6.10**).
- Particular attention to the relationships between windfarms in the baseline for each scenario, and how those relationships will change with the addition of the Development.

- 6.383 Three types of cumulative effects on visual amenity are considered in the assessment: combined, successive and sequential:

- Combined effects occur where a static viewer is able to see two or more windfarms within the viewers' arc of vision (assumed to be about 90 degrees);
- Successive effects occur where a viewer is able to see two or more windfarms from a viewpoint, but needs to turn to see them; and
- Sequential effects occur when a viewer is moving through the landscape along a road or footpath, and is able to see two or more windfarms at the same, or at different times as they pass along the route.

- 6.384 The susceptibility of receptors (and therefore the sensitivity of the receptors) may be affected by the presence of other wind energy developments. Some viewers may consider that sensitivity is reduced because other windfarms are 'already there', but for others it may be that sensitivity is increased because more development will be 'too much'. To retain a consistent and objective approach, the sensitivity of receptors used for the cumulative assessment is taken to be the same as that identified in the LVIA.

Cumulative Baseline

- 6.385 The windfarm developments forming part of the baseline for the CLVIA include consented schemes and those that are valid but undetermined applications or applications at appeal/public inquiry, as well as those that form part of the LVIA baseline (see **Table 6.3**). Harryburn Windfarm is also included, being close to the Development Area. Following consultation on the windfarms to be considered in the CLVIA, these are shown on **Figure 6.7** and listed in **Table 6.4**. Windfarm developments for the CLVIA were identified through searches on the local authority planning portals, with a cut-off date of February 2017.

Table 6.4: Windfarms considered in the CLVIA

Windfarm	Status (Feb 2017)	Number of turbines	Turbine tip height (m)	Distance ¹⁵ (km)
Scenario 2:				
Twenty Shilling Hill	consented	9	125	8
Penbreck	consented	9	125	9
Kennoxhead	consented	19	145	9
Glenmuckloch	consented	8	133.5	10
Crookedstane	consented	4	126.5	11
Sandy Knowe	consented	24	125	11
Lion Hill	consented	4	126.5	12
Sanquhar Six	consented	6	130	14
Hare Hill Phase2	consented	39	70 to 91	15
Scenario 3:				

¹⁵ Distance is measured between the closest turbines of the Development to the closest turbine of the other windfarm.

Harryburn - design freeze	scoping	17	150	5
Glentaggart	application	5	132	9
Lethans	application	21	136 to 176	10
Ulzieside	application	12	125	10
Priestgill	application	7	145	13

6.386 Further afield there are many more proposed windfarms. **Figure 6.7** shows the locations of windfarms out to 25km from the Development Area to provide a little more context. Further still there are yet more, but with over 50 schemes within 25km of the Development Area it was not considered beneficial to map each one. Instead, online windfarm data from SNH^{xxvi} and RenewableUK^{xxvii} were used to identify trends in development at a wider scale.

Patterns of Wind Energy Development

6.387 With the windfarms listed in **Table 6.3** and **Table 6.4** above, and the number of schemes within 25km, it is clear that there is considerable development interest in this area. Existing windfarms are located on hill tops such as the Hagshaw Group, Hare Hill, Windy Standard and the northern part of Clyde Windfarm, or on forested plateaux such as Andershaw and Middle Muir, Harestanes and the southern part of Clyde Windfarm. The regional pattern of development across the area out to 60km shows trends in which windfarms are grouped into broad clusters. There are many windfarms spread across the Southern Uplands, with clusters of windfarms in certain areas (e.g. the northern fringe of the Southern Uplands south of Glasgow, around Moffat, and on the hills south of New Cumnock).

6.388 With cumulative schemes included, within the detailed (15km) study area, there will be windfarms (existing and proposed) all round the study area, except to the south-east around Lowther Hill and the Dalveen Pass. To the south-west there will be numerous schemes on the hills south of Nithsdale, to the west and north-west a band of forestry will host Glenmuckloch Penbreck and Kennoxhead Windfarms, with Andershaw and Middle Muir in similar setting to the north. The Hagshaw group will extend further over the hills to the north of the Douglas Water valley, and to the east, Clyde Windfarm will be accompanied by its extension, Crookedstane and Lion Hill. Harryburn Windfarm proposal located to the north-east of Leadhills will be the closest commercial scale windfarm to the Development, and will also lie between the M74 and Nithsdale.

6.389 In comparing the distribution of windfarms with designated areas (**Figure 6.4**), it is seen that windfarms except Hagshaw and Galawhistle are located outside local designated landscapes, and the Harryburn and the Development will be within or partly within the local landscape areas of Leadhills and Lowther Hills/Thornhill Uplands.

Scenario 2

6.390 There are a number of consented windfarms within 15km of the proposed development, as shown on **Figure 6.7**. The closest to the Development is Twenty Shilling Hill, located approximately 5km to the south, across Nithsdale. Other consented schemes are located south of Nithsdale (Sandy Knowe, Hare Hill Phase2 and Sanquhar Six).Glenmuckloch, Penbreck and Kennoxhead are consented, and will be located to the north-west; the Clyde group will also be extended slightly by Crookedstane and Lion Hill Windfarms.

6.391 **Figure 6.9** shows the ZTV of the Development overlain with that of the consented schemes (run as one ZTV). This illustrates that although there will be areas where only the Development will be visible (magenta areas on figure), these are restricted to narrow valleys and are not extensive. For much of the ZTV of the Development, it will be seen in in combined or successive views with other consented schemes (and existing schemes, although these are not included in the analysis of **Figure 6.9**).

Scenario 3

6.392 There are numerous proposed wind energy developments in the study area, including several that will be seen as extensions of groups already consented or built. Harryburn Windfarm will be the closest scheme to the Development, and will not be extending a group, but will be a stand-alone scheme. **Figure 6.10**. The figure illustrates that there will be considerable overlap between the ZTVs except within deep valleys close to the sites, where the topography screens the more distant windfarm. In particular, the valley slopes around Wanlockhead and Leadhills will have visibility of both the Development to the west and Harryburn to the north. Views from hill tops are more open and will include views of Harryburn with the Development set further to the south-west.

6.393 The ZTVs of other application schemes have not been shown separately, as it was considered that the relationships with these windfarms will be more distant. Overall, the ZTVs show, as can be expected, that there will be visibility of multiple windfarms from hilltops and high slopes, but views from valleys will be more restricted, with visibility of turbines where they are close by or visible along the alignment of the valleys. This is true for the Development also, with visibility of the Development alone from within the steep sided valleys close to the Development Area that do not have views of other windfarms.

Receptors Considered in the Cumulative Assessment

6.394 The receptors of cumulative effects are:

- landscapes within which proposed as well as existing windfarms are present as features or where they are perceptible in the surrounding area; and
- people (visual receptors) who may see proposed as well as existing windfarms when moving round the landscape or at static locations. As cumulative effects can be experienced as sequential views of different windfarms, effects on views from routes are important.

6.395 The landscape and visual receptors considered in the cumulative assessment are the same as those described for the LVIA, having been selected as suitable for both assessments. The cumulative assessment considers LCTs assessed as having significant effects in the LVIA; all routes assessed in the LVIA; and static locations such as viewpoints within 12.5km or settlements that have theoretical visibility of cumulative windfarms and were considered in the LVIA to have significant effects. Cumulative windfarms are shown on visualisations, in accordance with SNH guidance ^{vi}.

Cumulative Landscape Effects

6.396 Landscape receptors included in the cumulative assessment are:

- Southern Uplands in Dumfries and Galloway and South Lanarkshire
- Upland Glens in Dumfries and Galloway and South Lanarkshire
- Upland River Valley in South Lanarkshire
- Upper Dale in Dumfries and Galloway

Southern Uplands in Dumfries and Galloway and South Lanarkshire

6.397 The Southern Uplands LCT includes the Sanquhar and Whiteside sites (under construction) in the Nithsdale unit, and Clyde is in the LCT, picked out in a separate subtype 'with windfarm' in the South Lanarkshire Capacity Study ^{xvii}. Further afield, Southern Upland LCT areas host other windfarm developments, such as Windy Standard to the south-west of the wider study area. However, from much of the Southern Uplands LCT there are views of windfarms in the wider landscape.

6.398 In the LVIA, i.e. in the context of existing windfarms and those under construction, the Development was judged to have significant (major) effects between the Crawick Water to the Menzies Pass and significant (moderate) effects to the north-west of Leadhills including the Snar Water valley, Windy Dod and the Rake Law ridge.

6.399 The cumulative assessment considers the LCT as a whole within the detailed (15km) study area.

6.400 In Scenario 2, Glenmuckloch and Twenty Shilling Hill Windfarms will be located within the LCT, in the North West Lowthers and Nithsdale units respectively, and Crookedstane and Lion Hill will extend the Clyde group of turbines in the East of the Clyde/ Daer unit within South Lanarkshire. It is considered that in this scenario, the LCT will be one 'with occasional windfarms'.

6.401 The LCT as a whole will be influenced by windfarm development in this scenario, although the area between the Clyde valley and Nithsdale (that includes the Development Area) will not contain windfarms, except Glenmuckloch located at the western edge of the area (within the North West Lowthers unit). The introduction of the Development to this part of the Southern Uplands LCT will change the landscape to one 'with windfarms'. The cumulative effect on the LCT as a whole within the detailed (15km) study area, of the introduction of the Development in the context of the existing and consented windfarms, is judged to be **significant (moderate)**.

6.402 In Scenario 3, Harryburn Windfarm will be present within the area between the Clyde valley and Nithsdale. Other windfarms will also be present within the LCT, Priestgill near Clyde and Ulzieside near Whiteside, and Lethans will increase the presence of turbines adjacent to the LCT to the west, near

Glenmuckloch. With Harryburn taking turbines to the west of the Clyde valley into the area without existing windfarms, the area of Southern Uplands between the M74 and Nithsdale will have turbines present. With this windfarm, and others increasing the presence of windfarms seen on the hills of this LCT, the LCT is judged to be a landscape 'with windfarms'. The introduction of the Development will further increase the presence of windfarms in the LCT, but will not alter the landscape which will be one 'with windfarms' before and after the introduction of the Development. The cumulative effect on the LCT within the detailed study area is judged to be **not significant (minor)**.

Upland Glens in Dumfries and Galloway and South Lanarkshire

- 6.403 For the Mennock Pass area of this LCT, there will be views of Sanquhar and/or Whiteside from the valley floor in the lowest stretch as the valley runs south-west past Auchensow Hill. Elsewhere, there will be no views of other windfarm from the valley floor, but views of several as one climbs the steep slopes and views open out. However, these will all be seen as distant windfarms. The LVIA identified significant effects for the Development in this LCT.
- 6.404 Consented schemes are all at a distance from this valley, and the presence of additional windfarms in the wider landscape, albeit some visible from the upper valley slopes, will not alter the effect that the Development will have on the landscape, which is one of introducing turbines at close quarters. The cumulative effect in Scenario 2 is judged to be **not significant (negligible)**.
- 6.405 Harryburn Windfarm will be the closest proposed scheme to the Mennock Pass area of this LCT. That windfarm will only be visible from the higher slopes of the valley at its northern end, over Middle Moor and the flanks of East Mount Lowther. The presence of Harryburn approximately 6km to the north will not alter the effect that the turbines of the Development will have on the LCT. The cumulative effect in Scenario 3 is judged to be **not significant (negligible)**.

Upland River Valley in South Lanarkshire

- 6.406 The Snar Water valley section within in this LCT runs northwards. there will be no views of other windfarm from the valley floor, but views of several windfarms, in particularly Andershaw and Middle Muir to the north, as one climbs the side slopes and views open out. From the northern end of the Valley where it meets the Duneaton Water, the turbines of Middle Muir are approximately 2km away on the other side of the Duneaton Water valley. the turbines of the Development will be approximately 1.5km from the southernmost end of the LCT area, on the horizon at the head of the valley. These different positions at opposite ends of the valley contributed to the effect of the Development being identified in the LVIA as significant (major).
- 6.407 There will be no consented schemes visible from within the Snar valley, and no cumulative effects in Scenario 2.
- 6.408 In scenario 3, Harryburn Windfarm will be visible from the western side of the valley when looking east up the side valleys. Turbines will therefore be visible to the east, as well as to the north (Middle Muir and Andershaw). The introduction of the Development to the south will not be new elements in the landscape, but repeated elements in a different direction. The cumulative effect of the introduction of the Development, should Harryburn be present, is judged to be **significant (moderate)**.

Upper Dale in Dumfries and Galloway

- 6.409 Significant effects were predicted in the LVIA for the section of Nithsdale between Glengenny and Ulzieside and over Auchentaggart/Sanquhar Moors. From these areas Sunnyside Windfarm is present nearby, Hare Hill is visible on the slopes to the west, and Sanquhar and Whiteside are being built on the south side of the valley.
- 6.410 In scenario 2, the number of developments to the south-west will increase with Sanquhar six, Hare Hill phase 2, and particularly with Sandy Knowe which is located on lower slopes, partly within the LCT. Further south, Twenty Shilling Hill Windfarm will be visible from much of the LCT, and Glenmuckloch will mean that turbines are present on the north side of the valley. With these windfarms present, the introduction of the Development will mean another group of turbines on the horizon around the valley, on the north side. Glenmuckloch and the Sandy Knowe to Hare Hill group will flank Nithsdale on either side. This may also be the impression further downstream, with Twenty Shilling Hill and the Development on either side, albeit further apart and further from the valley floor than those further west. It is judged that the effect of the valley passing between windfarms will be **significant (moderate)** in this scenario for the section of Nithsdale between Glengenny and Ulzieside and over Auchentaggart/Sanquhar Moors.

- 6.411 In Scenario 3, Ulzieside and Lethans Windfarms will appear as extensions to Whiteside and Glenmuckloch respectively, increasing the presence of turbines on either side of the valley. The Development, although taking place opposite Twenty Shilling Hill, will have a similar effect to that identified for Scenario 2. The cumulative effect in Scenario 3 is therefore judged to be **significant (moderate)** for the section of Nithsdale between Glengenny and Ulzieside and over Auchentaggart/Sanquhar Moors.

Cumulative Visual Effects from Static Locations

- 6.412 This section sets out the cumulative assessment for viewpoints within 10km (Viewpoints VP1-VP17) and VP22 (12.5km away) for which a significant effect was identified in the LVIA, and settlements for which significant effects were identified in the LVIA.

Wanlockhead

- 6.413 From Wanlockhead, there are no existing or under construction windfarms visible. The LVIA identified a significant (moderate) effect.
- 6.414 In Scenario 2, Penbreck and Kennoxhead will be visible from the upper southern parts of the settlement, as illustrated by VP3 and VP4. From these locations the Development will be seen to increase the number of turbines visible, rather than introduce them to the view. The cumulative effect is judged to be no greater than that identified for the LVIA as the Development will be the closest and most visible windfarm, i.e. the cumulative effect will be **not significant (negligible)**.
- 6.415 In scenario 3, Harryburn Windfarm will also be visible from southern elevated locations within the settlement, such that the Development will be a second windfarm nearby, albeit in front of more distant turbines. The cumulative effect of the introduction of the Development in the context of Penbreck, Kennoxhead and Harryburn Windfarms, is judged to be **not significant (minor)**.

VP1 Glengaber Hill

- 6.416 This viewpoint is located within the Development Area, at a location with extensive views, including views of windfarms in the wider landscape. Existing/construction windfarms visible include Hare Hill, Sanquhar and Whiteside, the Hagshaw Group, Andershaw and Middle Muir and Clyde. The effect of the Development identified in the LVIA was significant (major) due to the proximity of the turbines.
- 6.417 In the 2nd scenario, the consented schemes on the southern side of Nithsdale will be visible, as will those of Glenmuckloch, Penbreck and Kennoxhead. With these schemes, there will be many turbines seen in the distance, particularly to the south-west. However, as this viewpoint is within the Development Area, the effect of the introduction of the turbines in the foreground and nearby hills will remain a high magnitude of change. The changes to the cumulative baseline in the distance will not alter the effect of the proposed turbines in the foreground. The cumulative effect is therefore judged to be **not significant (negligible)** as the effect remains as it was identified in the LVIA.
- 6.418 This is also the case in scenario 3, when Ulzieside, Lethans and Glentaggart are visible in the distance. Harryburn Windfarm will be visible on the horizon to the east, approximately 7km away. Turbines will be present in the landscape around this viewpoint, but the introduction of the Development will bring turbines into the foreground. In this scenario, with Harryburn present nearby, the cumulative effect is judged to be **not significant (minor)**.

VP2 Wanlockhead Beam Engine

- 6.419 No other consented or proposed windfarms will be visible from this location, therefore there are no cumulative effects.

VP3 Wanlockhead Museum

- 6.420 This viewpoint is located on the valley floor and views are contained within the valley. There are no views of existing windfarms, and the effect of the Development was identified as significant (moderate) in the LVIA.
- 6.421 In scenario 2, Penbreck and Kennoxhead will be visible on the horizon along the Mennock Water, as distant turbines low on the horizon. The introduction of the Development will therefore not be new elements in that part of the view, although there will be an increase in the number of turbines visible, and turbines will be considerably closer than those of Penbreck and Kennoxhead. Although there will be a slight reduction in the effect resulting from the introduction of the Development into a view with turbines present, the effect is judged to remain as identified in the LVIA, and there will be **not significant (negligible)** cumulative effects.

- 6.422 No proposed windfarms will be visible from this location, therefore there are no cumulative effects in scenario 3.
- VP4 Upper Wanlockhead*
- 6.423 This viewpoint is elevated over Wanlockhead, yet contained within the valley. There are no views of existing windfarms, and the effect of the Development was identified as significant (major) in the LVIA.
- 6.424 In scenario 2, Penbreck and Kennoxhead will be visible on the horizon along the Mennock Water, as distant turbines on and below the horizon. The introduction of the Development will therefore not be new elements in that part of the view, although there will be an increase in the number of turbines visible, and turbines will be considerably closer than those of Penbreck and Kennoxhead. Although there will be a slight reduction in the effect resulting from the introduction of the Development into a view with turbines present, the effect is judged to remain as identified in the LVIA, and there will be **not significant (negligible)** cumulative effects.
- 6.425 Harryburn Windfarm will theoretically be visible to the north-east from this location, although the tips of the turbines will be screened by a stand of coniferous trees within the settlement. There will therefore be **not significant (negligible)** effects from this location.
- VP6 Lowther Hill*
- 6.426 This viewpoint is located near the top of Lowther Hill, at a location with extensive views, including views of windfarms in the wider landscape. Existing/construction windfarms visible include Hare Hill, Sanquhar and Whiteside, the Hagshaw Group, Andershaw and Middle Muir and the northern part of Clyde. From the summit plateau of Lowther Hill where there are more views east, the southern part of Clyde Windfarm is visible laid out on the lower hills beyond Lowther Hill. The effect of the introduction of the Development to the west of Lowther Hill was identified in the LVIA to be significant (major).
- 6.427 In scenario 2, the consented schemes on the southern side of Nithsdale will be visible, as will those of Glenmuckloch, Penbreck and Kennoxhead. From the summit plateau with views east, Crookedstane and Lion Hill will also be visible. The Clyde group will be the closest, but from the viewpoint location Twenty Shilling Hill is the closest beyond Nithsdale. With these schemes, it will be a panoramic view over hills with turbines in the distance in all directions except for south-east, but with a concentration of windfarms to the west across Nithsdale. The effect of the introduction of the turbines onto the middle distance hills to the north-west will bring turbines closer to Lowther Hill, over the rounded hills beyond Wanlockhead. This will remain a high magnitude of change, with the increased perception of turbines throughout the landscape created by the cumulative baseline. The cumulative effect of the introduction of the Development in the context of the greater number of turbines in the distance, is judged to be **not significant (minor)**.
- 6.428 This is also the case in scenario 3, with more windfarms visible in the distance. Harryburn Windfarm will be visible on the hills to the north beyond Green Lowther, approximately 6km away. Many of the turbines of the Development will be of a similar distance away from Lowther Hill as Harryburn turbines, but the turbines to the left (south) of the Development will be closer, to about 3.5km away. The Development will increase the spread of middle distance turbines round to the north-west as a separate group from Harryburn, but will also bring turbines closer to the hill into the foreground. In this scenario, with Harryburn present nearby, there will be an increase in the number of turbines on middle distance hills and the cumulative effect, taking a precautionary approach, is judged to be **significant (moderate)**.
- VP7 Mennock Pass*
- 6.429 No consented windfarms will be visible from this location, therefore there are no cumulative effects in Scenario 2.
- 6.430 In scenario 3, Ulzieside Windfarm will be visible adjacent to Whiteside in the distance, in the glimpse from the viewpoint out across Nithsdale. This will not alter the presence of the Development in the visual experience of this location, and as such, the cumulative effect is judged to be **not significant (negligible)**.
- VP8 Auchentaggart Moor*
- 6.431 From Auchentaggart Moor, Whiteside, Sanquhar, Hare Hill and Sunnyside turbines are visible, across or along Nithsdale. The introduction of the Development on the horizon to the north is judged in the LVIA to have a significant (major) effect.
- 6.432 In scenario 2, Hare Hill 2 and Sanquhar six will increase the number of turbines on the horizon to the west, and Sandy Knowe will bring turbines downslope towards Nithsdale. Twenty Shilling Hill will be seen as a separate development further left (south), and Glenmuckloch will be seen on the horizon on the north side of Nithsdale, north-west from the viewpoint. This increase in the number of windfarms in different directions will mean that there is a perception of windfarms around Nithsdale seen from this location. The Development will further contribute to that, being located to the north of the viewer, on the horizon above the moor. The cumulative effect is judged to be **not significant (minor)**.
- 6.433 In scenario 3, Ulzieside and Lethans will increase the number of turbines in the view, but not the spread of windfarms. The cumulative effect in scenario 3 is judged to be the same as for Scenario 2, i.e. **not significant (minor)**.
- VP9 Sanquhar Golf Course*
- 6.434 The LVIA identified a significant (major) effect on this view, with Sunnyside turbines visible and Sanquhar and Whiteside windfarms screened by local vegetation.
- 6.435 Twenty Shilling Hill will theoretically be visible from this location, but will be screened by local woodland. One tip of Glenmuckloch is also likely to be screened. Without other windfarms visible, there will be **not significant (negligible)** cumulative effects.
- 6.436 In scenario 3, the tips of Ulzieside turbines may be visible to the south-west, but are likely to be screened by trees on the golf course. Without other windfarms visible, there will be **not significant (negligible)** cumulative effects.
- VP10 Crawick Multiverse Park*
- 6.437 Hare Hill, Sanquhar and Whiteside are visible from the artland, and Sunnyside turbines are located close to the park. The LVIA identified a significant (major) effect.
- 6.438 In scenario 2, Twenty Shilling Hill will be visible southwards on the hills above Sanquhar, slightly offset from the axis within the park. Sanquhar Six, Hare Hill and Sandy Knowe will increase the number of turbines across the valley to the south-west, and Glenmuckloch will be visible along the valley beyond the Sunnyside turbines. The introduction of the Development on the horizon in the eastern part of the view will increase the number of windfarms on the hills and slopes around Nithsdale, but is judged to be a **not significant (minor)** cumulative effect.
- 6.439 Ulzieside will be located across Nithsdale adjacent to Whiteside, and Lethans will be seen adjacent to Glenmuckloch. These windfarms will not alter the effects described above, the cumulative effect in this scenario is judged to be the same as for Scenario 2, i.e. **not significant (minor)**.
- VP11 B740, Corsebank*
- 6.440 No other consented or proposed windfarms will be visible from this location, therefore there are no cumulative effects.
- VP12, B740 Spango Bridge*
- 6.441 No other consented or proposed windfarms will be visible from this location, therefore there are no cumulative effects.
- VP13 Crawfordjohn*
- 6.442 Clyde Windfarm is visible from Crawfordjohn, and Andershaw and Middle Muir are becoming visible to the north-west as they are built. The LVIA identified a significant (moderate) effect.
- 6.443 No consented windfarms will be visible, such there will be no cumulative effect in Scenario 2.
- 6.444 Harryburn Windfarm will be visible as one turbine and one additional blade on the forested horizon to the south-east of Crawfordjohn. This will mean that windfarms are present on either side of the Duneaton Water valley, as well as downstream (Clyde). The introduction of the Development on the hills at the head of the Snar Water valley looking upstream will have a **not significant (minor)** cumulative effect.
- VP14 B740/B7078 Junction*
- 6.445 The LVIA predicted a not significant (minor) effect from this location, in the presence of Clyde, Andershaw and Middle Muir and the Hagshaw group.

6.446 In scenario 2, Penbreck and Kennoxhead will theoretically be visible, but are likely to be screened by forest plantations, and be low on the horizon beyond Middle Muir and Andershaw. There will be **not significant (negligible)** cumulative effect.

6.447 Harryburn Windfarm will be seen on the forested Hills to the south-east, as a separate and closer development than Clyde. Glentaggart will be visible beyond Andershaw and Middle Muir. The Development will a more distant group of turbines than either the Middle Muir group or Harryburn. The cumulative effect of adding this additional windfarm will be **not significant (minor)**.

VP15 Todholes Hill

6.448 The LVIA identified a significant (moderate) effect on this view in the context of views of Clyde, Whiteside, Sanquhar and Hare Hill, and the Hagshaw group.

6.449 In Scenario 2, Sanquhar six, Sandy Know and Hare Hill 2 will create a continuous band of turbines on the far side of Nithsdale, from Whiteside to Hare Hill, and Twenty Shilling Hill will be seen separately to the south. Glenmuckloch will be approximately 1.5km away from Todholes hill to the west, and Penbreck and Kennoxhead will increase the spread of turbines to the north also. In this situation, the Development will be seen to extend the spread of turbines in the direction of Clyde Windfarm, but will not be the closest to the viewpoint. The cumulative effect is judged to be **not significant (minor)**.

6.450 In scenario 3, Ulzieside and Lethans will augment the turbine groups across Nithsdale and on the hills to the west respectively, and Harryburn will be seen adjacent to Clyde. The Development will increase the number of turbines seen to the east, including making them more visible as Harryburn and Clyde windfarm turbines are generally partially hidden. The cumulative effect is judged to be **not significant (minor)**.

VP16 Kelloholm

6.451 From Kelloholm, the LVIA predicted a significant (moderate) effect.

6.452 In Scenario 2, although Sanquhar Six, Hare Hill 2, Sandy Knowe, and Glenmuckloch will theoretically be visible, they will be screened by the buildings of Kelloholm from this location on Robertson Road. The cumulative effects will be **not significant (negligible)**.

6.453 The turbines of Ulzieside Windfarm will be visible on the hill by Whiteside, but Lethans is likely to be screened by local buildings. The cumulative effect of the Development in scenario 3 is judged to be **not significant (negligible)**.

VP17 SUW, Whing Head

6.454 The LVIA identified a significant (moderate) effect for this location with views of Hare Hill, Andershaw, Middle Muir, Clyde and Sunnyside turbines, as well as those being built at Whiteside and Sanquhar Windfarms.

6.455 In scenario 2, Twenty Shilling Hill will be visible to the south-east, as turbines over a nearby hill, and Sanquhar Six, Hare Hill 2 and Sandy Knowe will increase the number of turbines to the west. Glenmuckloch will be seen on the opposite side of Nithsdale, and Penbreck and Kennoxhead will be low on the horizon to the north. In this situation, the Development will be more distant from the viewpoint than those on the south side of Nithsdale, but will form a group on the other side of the valley. The cumulative effect is judged to be **not significant (minor)**.

6.456 In scenario 3, Ulzieside turbines will be close to the viewpoint, and Lethans will increase the Glenmuckloch group of turbines. Harryburn will be seen as a number of turbine low on the horizon to the north-east, and Glentaggart may be visible near Andershaw and Middle Muir. The Development will introduce turbines in front of Harryburn windfarm, but considerably further from the viewpoint than the turbines of Ulzieside (approximately 1km away). The cumulative effect is judged to be **not significant (minor)**.

VP22 Cairn Table

6.457 The LVIA identified a significant (moderate) effect for this location with views of the Hagshaw group, Andershaw, Middle Muir, Clyde and Hare Hill, as well as those being built at Whiteside and Sanquhar Windfarms.

6.458 In scenario 2, Penbreck and Kennoxhead will be located on the forested slopes approximately 2-3km away from the viewpoint. These turbines will be spread across the view from east to south and will form the closest windfarms to Cairn Table. Further away, Glenmuckloch will be visible to the south, with

Sanquhar Six, Hare Hill 2 and Sandy Knowe visible beyond Nithsdale. Twenty Shilling Hill, also beyond Nithsdale will be more distant. In this situation, the Development will be considerably more distant from the viewpoint than Penbreck and Kennoxhead, and although it will still be seen as an extensive windfarm on the undeveloped hills to the south-east, it will play a lesser role in this view because it will be seen through Penbreck Windfarm. The cumulative effect of the introduction of the Development beyond Penbreck in this view is judged to be **not significant (minor)**.

6.459 In scenario 3, Lethans Windfarm will be an increased spread of turbines visible to the south-west, adjacent to Glenmuckloch, with Ulzieside beyond Nithsdale in the distance. Glentaggart will be visible near Andershaw and Middle Muir, and Priestgill may be visible adjacent to Clyde Windfarm. Harryburn Windfarm will be seen in the distance to the south-east, closer to the viewpoint than the turbines of Clyde, and located within the area of hills between Clyde and Nithsdale that do not currently have windfarms. The Development will introduce turbines to the west of Harryburn, also within the area of hills between Clyde and Nithsdale. However, from this location, Harryburn and the Development will be seen beyond Kennoxhead and Penbreck turbines that are close to the viewpoint. The cumulative effect of the introduction of the Development beyond Penbreck is judged to be **not significant (minor)**.

Cumulative Assessment from Routes

6.460 This section sets out the cumulative assessment for routes considered in the LVIA, including:

- Roads:
 - A76 and railway along Nithsdale;
 - B797 from Mennock to Wanlockhead and Abington;
 - B740 from Crawick to Crawfordjohn;
- Paths
 - Southern Upland Way;
 - Coffin Road
 - Muirkirk to Wanlockhead Drove Road;
 - Covenanters' Road or Enterkin Path.

Roads

A76 and railway along Nithsdale

6.461 These routes run along the Nithsdale valley floor, from New Cumnock to Kirconnel, Sanquhar, Mennock and south to Thornhill. The route passes Hare Hill and Sunnyside Windfarms, with Whiteside and Sanquhar under construction, and is predicted in the LVIA to have significant (moderate) effects for c.2km between Knockenjig to the edge of Sanquhar.

6.462 In scenario 2, the route will pass a larger group of windfarms to the south of the valley, with Sandy Knowe close to the route (approximately 1km up the slopes to the south). At this point Glenmuckloch will be located on the northern side of the valley on the ridge beyond Corsencon Hill. Further east, Twenty Shilling Hill will be visible on the south side of the valley above Mennock. The route will be one of passing between windfarms between New Cumnock and Sanquhar, with windfarms on the southern side extending further east. With the introduction of the Development, the route will be passing between windfarms for longer, with route users aware of developments on either side. This is judged to be a **significant (moderate)** cumulative effect.

6.463 In Scenario 3, Ulzieside will increase the number of turbines on the south side, and Lethans will increase the number of turbines visible on the north side, albeit that they are north of the Lethans Hill ridge and will be more visible from the New Cumnock side of Corsencon Hill. In this situation the cumulative effect of the Development will be as described above, i.e. **significant (moderate)**.

B797 from Mennock to Wanlockhead and Abington

6.464 From a short stretch of the Mennock Pass, Whiteside is visible, and Clyde is visible from the northern stretches of this route. The LVIA identified a significant (moderate) effect between Mennock and Wanlockhead as a result of the Development.

6.465 In scenario 2, Twenty Shilling Hill may be visible from the southernmost stretches, where woodland allows. The experience of the route will remain one of passing from a valley with windfarms visible (Nithsdale), past/below the Development and through to the Clyde valley with Clyde Windfarm visible. As such there will be **not significant (negligible)** cumulative effects.

6.466 In scenario 3, Ulzieside will be visible from the short stretch where Whiteside is visible, but Harryburn Windfarm will be visible on the hills above the section of the route from north of Wanlockhead. In this case, the route is passing close to Harryburn, and the Development will be an additional, closer windfarm to the route, although not visible from the same stretches as Harryburn except briefly at Wanlockhead. It is judged that the cumulative effect on this route, which, as a result of the introduction of the Development will be passing close to two windfarm sites, will be **not significant (minor)**.

B740 from Crawick to Crawfordjohn

6.467 This route runs along the Crawick and Duneaton Water valleys to Crawfordjohn, and over to the B7078. The windfarms on the south side of Nithsdale are visible at the southern end of the route, and Andershaw, Middle Muir, Clyde and the Hagshaw group are visible at the northern end. The LVIA identifies a significant (moderate) between Nether Cog and Spango.

6.468 In scenario 2, Twenty Shilling Hill, Sandy Know, Sanquhar Six and Hare Hill 2 will increase the number of turbines seen on the other side of Nithsdale from the southernmost stretch of the route, but this visibility does not extend far north into the glen. The brief view of more windfarms will not affect the experience of the route with the Development present, and as such the cumulative effect will be **not significant (negligible)**.

6.469 In scenario 3, Ulzieside will also be visible, from the southernmost section, and Glentaggart will be seen beyond Andershaw and Middle Muir, and Priestgill will be visible near Clyde. Harryburn Windfarm will be seen on the forested Hills to the south-east, as a separate development from Clyde. The route will remain one of views of turbines across Nithsdale to start with, then a narrow pass with views out to more turbines north of Crawfordjohn. As such, the cumulative effect of the addition of the Development is similar to the effects of the LVIA and Scenario 2, and cumulative effects in scenario 3 will be **not significant (negligible)**.

Paths

Southern Upland Way

6.470 In Scenario 2 with consented windfarms considered in the baseline, there will be more windfarms present in the landscape around the SUW. As the route passes over Whing Head and down to Sanquhar, the group to the north will be increased by Sanquhar Six, Hare Hill 2 and Sandy Knowe on the lower slopes; and to the south Twenty Shilling Hill will mean that there are windfarms either side. Glenmuckloch, Penbreck and Kennoxhead will be visible from Whing Head, in the distance to the north across Nithsdale. Within Nithsdale to the ascent of Conrig Hill, east-bound walkers on the SUW will be able to look back (south and west) to the array of windfarms on the south side of Nithsdale, but west-bound walkers will be travelling towards them. Once over Conrig Hill pass, views will be restricted by valley landforms, except on the tops, for example on Glengaber Hill, where views extend not only south-west by also west to Glenmuckloch, Penbreck and Kennoxhead. Later, on Lowther Hill, views down towards Clyde will include Crookedstane and Lion Hill turbines adjacent to Clyde. West-bound walkers will have seen Clyde, Crookedstane and Lion Hill prior to reaching Lowther Hill. The main changes in the baseline with consented schemes, is around Nithsdale, with the presence of Twenty Shilling Hill to the east of the SUW, and Glenmuckloch, Penbreck and Kennoxhead on the hills to the west.

6.471 With these windfarms present, the impression of Nithsdale will be that it has windfarms on either side, and the SUW (east-bound) passes between them on the south side of the valley, to approach and go through the Development on the north side. West-bound the experience will be of coming from the Development Area, crossing the valley and ascending between windfarms on the south side of Nithsdale. Views of more windfarms to the west and north-west will increase the perception of windfarms in the wider landscape, but will not change the fact that the SUW runs through the Development. Overall, the effect on the SUW will be slightly reduced by the increased presence of windfarms on the south side of Nithsdale, but the experience will remain one of passing over hills with windfarms around the route. The cumulative effect is judged to be **not significant (minor)**.

6.472 In scenario 3, Ulzieside will be adjacent to the SUW near Whing Head; Lethans will increase the number of turbines seen to the west near Glenmuckloch; and Harryburn will be visible as a separate group to the north from Glengaber and Lowther Hills.

6.473 With these windfarms present, the experience will remain one of passing over hills with windfarms nearby and at a distance from the route. The introduction of the Development as a windfarm that the SUW passes through will have a similar effect to that identified in Scenario 2, i.e. **not significant (minor)**.

Coffin Road

6.474 This route runs through the Development Area from Wanlockhead to Sanquhar Moor where it joins the SUW. The LVIA identified significant (major) effects.

6.475 In Scenario 2, Glenmuckloch, Kennoxhead and Penbreck may be visible from short sections of the route, as distant turbines to the north-west, and Sandy Knowe, Hare Hill extension, Sanquhar Six and Twenty Shilling Hill will be visible on the far side of Nithsdale, ahead for Sanquhar-bound walkers. Although there will be more windfarms visible in the distance from sections of the route, the introduction of the Development above the route will remain as identified in the LVIA, i.e. cumulative effects will be **not significant (negligible)**.

6.476 In Scenario 3, Harryburn Windfarm will be visible from Black Hill, as turbines on the horizon to the north-east beyond Wanlock Dod, c.6km from the route, particularly when walking towards Wanlockhead. Other proposed windfarms may also be visible, adjacent to consented or existing schemes in the distance, including those to the south of Nithsdale when walking towards Sanquhar. There will be more windfarms visible in the landscape around the route, and Harryburn will be present in the panorama from Black Hill. The introduction of the Development as an array of turbines seen from Black Hill and Stood Hill and turbines above the route as it passes down the Glendyne Burn valley, will remain a significant change to the experience of this route, and the cumulative effects are judged to be **not significant (minor)**.

Muirkirk to Wanlockhead Drove Road

6.477 This long route runs over the hills from the west, with open views from hill tops. The LVIA identified significant effects from Lamb Knowe to Duntercleuch.

6.478 In scenario 2, the path will pass within c.200m of Penbreck Windfarm, with Kennoxhead and Glenmuckloch nearby. Other consented schemes on the far side of Nithsdale will be visible in the distance from hill tops. The Development will therefore be a second windfarm with turbines in close proximity to the route (for east-bound walkers), although it will not be visible for the full route. This will have a **not significant (minor)** cumulative effect on the route.

6.479 In scenario 3, Lethans will be closer to the route than Glenmuckloch Windfarm, and Harryburn will be seen in the distance from Lamb Knowe. However, this will not alter the experience of the route from that described for scenario 2, and the cumulative effect of adding the Development to scenario 3 will be **not significant (minor)**.

Covenanters' Road or Enterkin Path

6.480 The LVIA identified significant effects for the c.1km section near East Mount Lowther only.

6.481 In scenario 2, Twenty Shilling Hill will be visible from East Mount Lowther and the ridge above Durisdeer, closer to the route than others across Nithsdale. The introduction of the Development will be another windfarm closer to the route than Twenty Shilling Hill. The cumulative effect is judged to be **not significant (minor)**.

6.482 In scenario 3, Ulzieside will be visible to the west, and Harryburn will be visible to the north from East Mount Lower. However, the cumulative effect will remain similar to scenario 2 in which the Development is an additional, closer windfarm to the route, and it is judged to be a **not significant (minor)** effect.

Implications for Designated Landscapes

6.483 Designated landscapes are shown in **Figure 6.4**. Designated landscapes beyond the detailed study area of 15km are unlikely to be affected by the Development in such a way as to compromise the reasons for which they were designated, and were therefore scoped out. The implications for designated landscape within 15km are considered below.

Thornhill Uplands Regional Scenic Area (RSA)

6.484 This area includes part of the Development Area, with the northernmost edge of the RSA running across from Conrig Hill to Slough Hill. The RSA extends south to Auldgirth, west to beyond Moniaive and east to the council boundary and Queensberry. The RSA is described as including "those parts of the Southern Uplands in the north and east where the characteristics of the landscape type are most strongly expressed, including the summits of the uplands to the north of Queensberry" (xii page 33). Although the

special qualities are not set out explicitly in the Technical Paper ^{xii}, the description includes references to land form and land cover of the Nithsdale valley and the hills that form the visual horizons around it.

- 6.485 The LVIA has identified significant (major) landscape effects for the Southern Uplands LCT between the Crawick Water and the Menzies Pass, over the Development Area; significant (major) landscape effects for limited sections of the Menzies Pass where the Development will be visible (Upland Glens LCT); and significant (major or moderate) effects for the Upper Dale LCT north of Enterkinfoot. The Development will therefore introduce significant landscape effects for the northernmost part of the RSA. Significant effects on views from within the RSA have also been identified for several viewpoints within approximately 13km of the Development.
- 6.486 In terms of the qualities referred to in the description of the RSA, while the physical landform and land cover of the northernmost part of the RSA will not be affected by the Development, there will be changes to the character of that area and views of it, identified in the LVIA to be significant.
- 6.487 The CLVIA identified that in the context of consented schemes (Scenario 2), there will be significant (moderate) cumulative effects for the Southern Uplands LCT as a whole within the detailed study area (15km), as with consented schemes present, the introduction of the Development will alter the landscape to one 'with windfarms'. Significant (moderate) cumulative effects are also identified for parts of the Upper Dale LCT, due to the relationship of the Development with windfarms on either side of Nithsdale; with a number of windfarms on the south side of the valley (including Twenty Shilling Hill adjacent to the RSA) and Glenmuckloch on the north side, giving the impression of the valley passing between windfarms. No other significant cumulative landscape effects were identified.
- 6.488 In Scenario 3, in the context of undetermined applications, not significant (minor) cumulative effects were identified for the Southern Uplands area between Nithsdale and the M74, as with Harryburn and other proposed windfarms present, the introduction of the Development will not alter the impression of this LCT from one 'with windfarms'. The Development will have significant (moderate) effects similar to Scenario 2 on parts of the Upper Dale LCT due to the location of windfarms on either side of Nithsdale.
- 6.489 The implications of the cumulative developments in the landscape around the RSA are that the Development will be seen in the context of other windfarms either side of Nithsdale and in the Southern Upland hills, and will be an additional development in a landscape with other windfarms. The potential alterations to the character of the landscape to one 'with windfarms' (in scenario 2) or to a valley with turbines on the hills either side, will alter the perception and character of parts of the RSA.
- 6.490 In terms of the qualities referred to in the description of the RSA, the physical landform and land cover of the northernmost part of the RSA will not be affected by the Development in the cumulative scenarios, but there will be changes to the character of that area and views of it, identified in the CLVIA to be significant as set out above. Large areas of the RSA are not affected by the Development.

Leadhills and Lowther Hills Special Landscape Area (SLA)

- 6.491 This area is contiguous with the Thornhill Uplands SSA with South Lanarkshire. The boundary, corresponding to the council boundary, runs adjacent to the north-east boundary of the Development Area. The SLA extends eastwards to the Daer Reservoir, and close to Clyde Windfarm and the M74, and northwards to the B7078.
- 6.492 The qualities of the SLA are stated as being:
- *"An extensive area of high, smooth, rolling hills and varied upland glens with a sense of emptiness engendered by a lack of extensive forestry or windfarm development;*
 - *Cultural features include the mining heritage surrounding Leadhills and remains of settlements on the sides of glens;*
 - *Extensive areas of rough grassland and heather moorland vegetation;*
 - *The Southern Upland Way and other walking routes accessible via the M74 and main roads passing through to the west; visitor attractions at Leadhills and fishing on the Daer Reservoir."* (^{xviii}, Figure 6vi).
- 6.493 The LVIA has identified significant (moderate) landscape effects for the area north-west of Leadhills including the Snar Water valley, Windy Dod and the Rake Law ridge, which lie within the SLA and form a small part of the northern section of the RSA. A significant (moderate) visual effect was identified for views from the B740 above Crawfordjohn (VP13), within the RSA, 7.8km from the Development. Whilst there will be changes to the character and views of the north-eastern part of the SLA as identified in the

LVIA, these will not alter the characteristic of 'emptiness' for most of the SLA area, and for all but the closest areas (equivalent to the areas for which significant landscape effects are identified) the Development will be seen as a feature in the distance, set back from the SLA. It is noted, however, that the South Lanarkshire Council LDP SPG Renewable Energy identifies 'Group 3 Areas with Potential for Wind Energy Development' extend over much of the SLA with the exception of an area of c.2km radius around Leadhills^{xix}. Other characteristics including landform and land cover, cultural features and access will not be affected by the Development outside the SLA.

- 6.494 The CLVIA identified that in the context of consented schemes (Scenario 2), there will be no significant effects on the landscape character of areas within the SLA. However, in Scenario 3, with Harryburn Windfarm present, there will be significant (moderate) effects on the character of the Snar Water section of Upland River Valley LCT north of the Development Area.

Douglas Valley SLA

- 6.495 This SLA lies approximately 10km north of the Development Area, and focusses on the Douglas valley and its immediate slopes, and the area includes Hagshaw Hill which has wind turbines on it. No significant landscape effects have been identified for this area in the LVIA or CLVIA, and the introduction of the Development, as a more distant scheme than the Andershaw-Middle Muir or Hagshaw groups, is unlikely to affect the designation of the area as an SLA.

Upper Clyde Valley and Tinto SLA

- 6.496 This SLA lies approximately 12km north-east of the Development, beyond Clyde Windfarm and Tinto Hill. There is therefore limited visibility of the Development as a distant feature, and the Development is unlikely to affect the designation of the area as an SLA.

East Ayrshire SLA

- 6.497 This area lies approximately 10km to the west, within East Ayrshire, including Cairn Table and Blackcraig Hill. The SLA includes Hare Hill Windfarm and its extension. Landscape and visual effects experiences at this distance are not found to be significant in the LVIA or CLVIA, and the Development is unlikely to affect the designation of the area as an SLA.

Summary of Significant Effects

Summary of Significant Landscape Effects

- 6.498 Significant effects on the characteristics of the landscape have been identified in the local area including the Development Area. More specifically, significant (major) landscape effects have been identified for the Development Area and to the south-west over Auchentaggart/Sanquhar Moors and into sections of the Menzies Pass Upland Glen. These are within a distance of approximately 4-5km to the south-west, and 1-2km in other directions. Significant (moderate) effects have been identified over a larger area, from across the opposite Upper Dale slopes to the south, into the Snar Water Upland River valley to the north, and over the Southern Upland hills to the north-west of Leadhills around the Snar Water Valley. These effects occur within approximately 7km to the south-west, and 5km to the north-east. Beyond these areas, the key characteristics of the landscape units will not be affected to a degree that will cause significant effects.
- 6.499 Overall, significant effects are contained within 5-7km of the Development area due to the broad topography of the Development area with most lines of turbines on ridges in the interior of the Development Area. High locations with views across to turbines on the interior ridges tend to have broad panoramic views of the wider hill context of the wider study area, and the Development is therefore seen (generally without significant landscape effects) in the context of the large scale hill ranges that make up the wider area, some with windfarms present. From lower elevation locations around the Development Area, the Development is generally less visible, and without significant effects on landscape character. Exceptions to this are where turbines are visible on the outer ridges of the Development Area, such as over Nithsdale, where the turbines will be visible on the horizon that forms the backdrop to views north from the section of Nithsdale around Sanquhar; for a section of the Snar valley where the turbines are seen at the head of the valley; and for the narrow sections of the Menzies Pass where turbines will be seen on the high horizon.
- 6.500 In considering the capacity of the landscape to accommodate the Development, it is considered that the landscape effects identified to be significant in the context of the EIA regulations, are within the range of

effects that can be expected from a development of this type and size. An analysis of the Development Area against criteria indicating susceptibility of the landscape to wind turbines confirmed that this landscape is judged to be able to accommodate this type of development. In this sense, there is some capacity for this landscape to accommodate the Development.

Summary of Significant Visual Effects

- 6.501 Significant effects on views and visual amenity are predicted to occur in the vicinity of the Development Area, to approximately 12.5km from the proposed turbines. The assessment has considered views from settlements, routes and other locations in the landscape such as hill tops and key paths, with visualisations provided for each viewpoint (**Figures 6.11** onwards).
- 6.502 Higher sensitivity viewers around the detailed study area include local residents at the scattered properties close to the Development Area (considered in the Residential Visual Amenity Assessment **Appendix 6.3**), as well as residents in local settlements, people using routes around the area for recreation, for example along the SUW and other footpaths. Tourists will also see the development when visiting the area.
- 6.503 Significant visual effects are a result of the introduction of turbines that will form prominent features in views. Ground level infrastructure elements, where visible, will not affect views beyond approximately 2km.
- 6.504 The relationship of the proposed development to existing windfarms in the study area (i.e. Clyde, those to the south of Nithsdale, and others listed in **Table 6.3**) will be of well separated developments visible in combination from high vantage points or when travelling through the landscape (sequential effects). The combined relationship between the proposed development and existing windfarms will be most evident for those who walk the SUW across the study area, as this long distance route takes in many hills that have views of more than one windfarm.
- 6.505 The Residential Visual Amenity Assessment (**Appendix 6.3**) considered the effects of the Development on the visual aspects of residential visual amenity for properties within 2km of the turbines, plus scattered properties to within approximately 2.5km. Sixteen properties or groups were assessed, and significant visual effects were identified for eight. Considering potential effects on living conditions for these eight properties, for one of these, Clackleith which is located within the Development Area and 500m from a proposed turbine, the Development was found to be potentially 'overbearing or dominant' to an extent that the property may 'become an unattractive place to live' according to what has become known as the Lavender Test¹⁶. This property is currently uninhabitable and is owned by Buccleuch Estate. Should the Development proceed, this property will not be brought into residential use during the lifespan of the Development. The effects on the remainder of properties assessed were not considered to be overbearing or dominant to an extent that any of the properties may become an unattractive place to live. These conclusions were reached regardless of the ownership of the properties or financial involvement or otherwise with the Development.

Summary of Cumulative Effects Assessment

- 6.506 The cumulative assessment considered two potential future scenarios with increasing levels of uncertainty. The LVIA represents the first, most likely scenario, given that other windfarms considered are already present or being built. The cumulative assessment considered a scenario which assumed that all consented schemes were present (Scenario 2), which, given that planning permission has been granted, is likely to occur (although it is not definite). The cumulative assessment also considered a scenario in which consented and application stage schemes were assumed to be present (Scenario 3). Given that there is no certainty that any or all of these schemes will be granted and built, this is a less likely future scenario.
- 6.507 The main relationships between the Development and other windfarms in the surrounding area are with Harryburn and the group of windfarms to the south of Nithsdale, and Twenty Shilling Hill in particular.
- 6.508 Significant effects occur where the Development increases the presence or spread of wind energy development in views, such as from hill tops and for Nithsdale, where the Development will be on the opposite side of the valley from most other windfarms, and further long the valley from Glenmuckloch and Lethans. This may create the sense of passing along a valley with windfarms on either side.

6.509 The table below sets out all of the significant effects identified in the LVIA and CLVIA.

Table 6.5: Summary of Significant Effects

Receptor	Effect in LVIA	Effect in Scenario 2 (empty cells indicate not significant effects)	Effect in Scenario 3 (empty cells indicate not significant effects)
Construction Effects			
Landscape effects	significant (major) for Development Area not significant (negligible) beyond Development Area; not significant (minor) for road realignment at Crawfordjohn		
Visual effects	significant (major) for viewers within Development Area not significant (negligible) for viewers beyond Development Area		
Landscape Character Types			
Southern Uplands	Between the Crawick Water and the Mennock Pass (including the Development Area): significant (major); Area north-west of Leadhills: significant (moderate)	Significant (moderate)	
Upland Glens	Limited sections of the Mennock Pass: significant (major)		
Upland River Valley	Snar Water section: significant (moderate)		Snar Water section: significant (moderate)
Upper Dale	Auchentaggart/Sanquhar Moors: significant (major); Glengenny to Ulzieside: significant (moderate)	Auchentaggart/Sanquhar Moors and Glengenny to Ulzieside: significant (moderate)	Auchentaggart/Sanquhar Moors and Glengenny to Ulzieside: significant (moderate)
Settlements			
Wanlockhead	Significant (moderate)		
Viewpoints			
1	SUW, Glengaber Hill	Significant (major)	
2	Wanlockhead Beam Engine	Significant (moderate)	
3	Wanlockhead Museum	Significant (moderate)	
4	Upper Wanlockhead	Significant (major)	
6	Lowther Hill	Significant (major)	Significant (moderate)
7	Mennock Pass	Significant (major)	
8	Auchentaggart Moor	Significant (major)	

¹⁶ A means of testing effects on residential visual amenity first used by Inspector Lavender for Enifer Downs. Land west of Enifer Downs Farm and east of Archers Court Road and Little Pineham Farm, Langdon, Appeal decision APP/X2220/A/08/2071880. 28th April 2009

Receptor		Effect in LVIA	Effect in Scenario 2 (empty cells indicate not significant effects)	Effect in Scenario 3 (empty cells indicate not significant effects)
9	Sanquhar Golf Course	Significant (major)		
10	Crawick Multiverse Park	Significant (major)	Significant (moderate)	Significant (moderate)
11	B740, Corsebank	Significant (moderate)		
13	B740 above Crawfordjohn	Significant (moderate)		Significant (moderate)
16	Kelloholm	Significant (major)		
17	SUW, Whing Head	Significant (major)		
22	Cairn Table	Significant (moderate)		
Routes - roads				
A76 and railway along Nithsdale		Knockenjig to Sanquhar: significant (moderate)	Significant (moderate)	Significant (moderate)
B797 from Mennock to Wanlockhead and Abington		Mennock to Wanlockhead: significant (moderate)		
B740 from Crawick to Crawfordjohn		Nether Cog to Spango Farm: significant (moderate)		
Routes - paths				
Southern Upland Way		Lowther Hill to Sanquhar: significant (major) Whing Head to Sanquhar: significant (moderate)		
Coffin Road		Significant (major)		
Muirkirk to Wanlockhead Drove Road		Spango Bridge to Duntercleuch: significant (major) Lamb Knowe to Spango Bridge: significant (moderate)		

- xv SNH (1998) Ayrshire Landscape Character Assessment
- xvi Carol Anderson Landscape Associates (2013) East Ayrshire Landscape Wind Energy Capacity Study.
- xvii Ironside Farrar (2016) South Lanarkshire Landscape Capacity Study for Wind Energy
- xviii LUC (2014) Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley
- xix Countryside Commission for Scotland (1978) Scotland's Scenic Heritage
- xx Historic Scotland (2007) Inventory of Gardens and Designed Landscapes <http://www.historic-scotland.gov.uk/index/heritage/gardens.htm>
- xxi Council planning portals, accessed November 2016 and February 2017: <https://eaccess.dumgal.gov.uk/online-applications/>; <http://pbsportal.southlanarkshire.gov.uk/Northgate/PlanningExplorer/GeneralSearch.aspx>; <http://eplanning.east-ayrshire.gov.uk/online/>
- xxii Dumfries and Galloway Council (2012) Interim Planning Policy: Wind Energy Development
- xxiii Dumfries and Galloway Council (2014) Supplementary Guidance Part 1 Wind Energy Development
- xxiv Scottish Government, (2003). Planning Advice Note 68: Design Statements
- xxv LUC (1999) Glasgow and Clyde Valley Landscape Assessment
- xxvi Scottish Natural Heritage, On-shore Windfarm Proposals Dataset. <http://gateway.snh.gov.uk/natural-spaces/index.jsp> / <http://www.snh.gov.uk/planning-and-development/renewable-energy/research-data-and-trends/trendsandstats/windfarm-footprint-maps/>
- xxvii Renewables UK, UK Wind Energy Database (UKWED) <http://www.renewableuk.com/en/renewable-energy/wind-energy/uk-wind-energy-database/index.cfm>
- xxviii Ironside Farrar (2010) South Lanarkshire Validating Local Landscape Designations
- xxix South Lanarkshire Council (2016) Supplementary Guidance 10 Renewable Energy

ⁱ Scottish Government (2010) Scottish Planning Policy

ⁱⁱ Scottish Government (May 2014) Web Based Renewables Advice: Onshore Wind Turbines. <http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables/Onshore> (accessed August 2016)

ⁱⁱⁱ The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000

^{iv} Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

^v SNH (2004) Topic Paper 6. Techniques and Criteria for Judging Capacity and Sensitivity

^{vi} SNH (2017) Visual Representation of Windfarms

^{vii} SNH (2014) Siting and Designing Wind Farms in the Landscape, Version 2, and SNH (2017) Siting and Designing Wind Farms in the Landscape, Version 3

^{viii} SNH (2015) Spatial Planning for Onshore Windfarms - natural heritage considerations

^{ix} SNH (2012) Assessing the Cumulative Effects of Onshore Wind Energy Developments

^x Carol Anderson and Alison Grant Associates (2011) Dumfries and Galloway Wind Farm Landscape Capacity Study

^{xi} Carol Anderson Landscape Associates (2016) Dumfries and Galloway Wind Farm Landscape Capacity Study, Revised and updated study report

^{xii} Dumfries and Galloway (2013) Technical Paper: Regional Scenic Areas

^{xiii} Land Use Consultants (1998) Dumfries and Galloway Landscape Assessment. SNH Commissioned Report No.94.

^{xiv} South Lanarkshire Council (2010) South Lanarkshire Landscape Character Assessment