6 Landscape & Visual Impact Assessment

6.1 Introduction

6.1.1 This chapter considers the likely significant landscape and visual effects associated with the construction and operation of the proposed development. The specific objectives of the chapter are to:

- describe the current baseline;
- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the potential effects, including direct, indirect and cumulative effects;
- describe the mitigation measures proposed to address the likely significant effects;
- assess the residual effects remaining following the implementation of mitigation measures.

6.1.2 The assessment has been carried out by Ruth Knight BA (Hons) DipLA MA CMLI and Sam Hammersley BSc (Hons) MLA CMLI of LDA Design, both of whom are chartered members of the Landscape Institute. The lead assessor has over 20 years of experience preparing LVIAs and collectively they share over 25 years of experience.

6.1.3 The chapter is supported by:

- Technical Appendix 6.1 - Glossary and Methodology.
- Technical Appendix 6.2 – Key Viewpoints extracted from Midlothian Council and East Lothian Council landscape capacity studies for wind turbine development.
- Technical Appendix 6.3 – Residential Visual Amenity Assessment.
- Technical Appendix 6.4 – Viewpoint Descriptions.

6.1.4 Figures 6.1 – 6.42 are referenced in the text where relevant.

6.2 Legislation, Policy and Guidance

6.2.1 A full review of planning policy of relevance to the proposed development can be found in the **Planning Statement** which accompanies this application. Only those policies of direct relevance to this Landscape and Visual Impact Assessment (LVIA) are considered below. Landscape designations and policy areas set out in the policy description below are illustrated on **Figure 6.2**.

National Planning Policy

6.2.2 Relevant national planning policy is expressed in the National Planning Framework 4 (NPF4)[1] which was introduced in February 2023 and replaces the previous NPF3[2] and the Scottish Planning Policy[3]. NPF4 sets out the spatial principles, regional priorities, national developments and national planning policy for Scotland. It is supported by specific guidance within the "Onshore wind turbines" Planning Advice Note (PAN) last updated in May 2014[4].

Local Planning Policy

6.2.3 The site lies within the north of the Scottish Borders Council area, close to the boundary with East Lothian Council and within approximately 7km of the boundary of Midlothian Council. The current Local Development Plan (LDP) for the Scottish Borders was adopted in May 2016[5] and is supported by approved planning guidance.

6.2.4 Scottish Borders Council are in the process of updating their LDP, which is currently towards the end of the examination phase, having received recommendations from the Scottish Government's Planning and Environmental Appeals Division (DPEA) in July 2023. Following modifications, the proposed Local Development Plan (2020)[6] is expected to be adopted in Autumn 2023. Consideration will be given to this emerging LDP where relevant.

6.2.5 East Lothian Council, Midlothian Council, City of Edinburgh Council, West Lothian Council, South Lanarkshire Council, Fife Council, Northumberland County Council and Northumberland National Park Authority are also located within the study area (see **Figure 6.2**). Policy for these districts is only relevant to this assessment insofar as it identifies locally valued landscapes and their purposes of designation. The following local plans have been reviewed:

[1] Scottish Government. (February 2023). National Planning Framework 4. Available at: https://www.gov.scot/publications/national-planning-framework-4/

[2] Scottish Government. (June 2014). National Planning Framework 3. Available at: https://www.gov.scot/publications/national-planning-framework-3/

[3] Scottish Government. (December 2020). Scottish Planning Policy. Available at: https://www.gov.scot/publications/scottish-planning-policy/

[4] Scottish Government. (June 2014). Onshore wind turbines: planning advice. Available at: https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/

[5] Scottish Borders Council. (May 2016). Scottish Borders Council Local Development Plan. Available at: https://www.scotborders.gov.uk/info/20051/plans_and_guidance/121/local_development_plan

[6] Scottish Borders Council. (2020). Scottish Borders Council Proposed Local Development Plan. Available at: https://www.scotborders.gov.uk/info/20051/plans_and_guidance/121/local_development_plan/2

- East Lothian Council Local Development Plan (2018)[7] – identifies Local Landscape Areas (LLA) (Policy DC9) and Gardens and Designed Landscapes (GDL) (Policy CH6);
- Midlothian Council Local Development Plan (2017)[8] – identifies the Pentland Hills Regional Park (Policy RD3), Country Parks (Policy RD4), LLAs (Policy ENV6) and GDLs (Policy ENV20);
- Edinburgh Local Development Plan (2016)[9] – identifies GDLs (Policy Env 7), LLAs (Policy Env 11) and the Pentland Hills Regional Park (Policy Env 17);
- West Lothian Local Development Plan (2018) – identifies LLAs (Policy ENV 1) within the study area;
- South Lanarkshire Local Development Plan 2 (2021)[10] identifies LLAs (Policy NHE16) within the study area;
- Fife Council Adopted Local Development Plan – FIFEplan (2017)[11] – identifies LLAs (Policy13) and GDLs (Policy 14);
- Northumberland Local Plan 2016-2036 (2022)[12] – identifies no local landscape designations; and
- Northumberland National Park Local Plan (2020)[13] – identifies no local landscape designations.

Scottish Borders current Local Development Plan (2016)

6.2.6 The following adopted policies will be relevant to the proposed development in the context of this LVIA:

- **Policy PMD2: Quality Standards** requires the *"scale, massing, height and density"* of development to be appropriate to its surrounding, and respect the character of the surrounding area.
- **Policy ED9: Renewable Energy Development** states that the council will support proposals for wind development where *"they can be accommodated without unacceptable significant adverse impacts or effects"*. The policy highlights the planning context in which development will be considered and sets out key considerations for wind development, such as landscape and visual impact and residential amenity.
- **Policy HD3: Protection of Residential Amenity** aims to protect residential properties from adverse impacts, including visual impacts.
- **Policy EP4: National Scenic Areas** states that development will only be permitted where the objectives of the designation and overall value of the site and its surroundings will not be compromised, and where any significant adverse effects are clearly outweighed by social or economic benefits of national importance.
- **Policy EP5: Special Landscape Areas**, Special Landscape Areas is the former name for LLAs. This policy states that the council will safeguard the landscape quality of these LLAs against proposed development, including the visual impact. It notes significant adverse effects will only be permitted where the landscape impact is clearly outweighed by social or economic benefits of national or local importance.
- **Policy EP9: Conservation Areas** requires development to preserve or enhance the character and appearance of conservation areas.
- **Policy EP10: Gardens and Designed Landscapes** states that the council will support development that safeguards or enhances the landscape features, character or setting of GDLs.
- **Policy IS5: Protection of Access Routes** states that development that has an adverse impact upon public access routes will not be permitted unless a suitable diversion or appropriate alternative route can be provided.

6.2.7 The emerging LDP contains similar relevant policies to those within the current LDP, including policies on: placemaking and design (Emerging Policy PMD2), renewable energy development (Emerging Policy ED9) (which contains new references to NPF4); protection of residential amenity (Emerging Policy HD3), National Scenic Areas (Emerging Policy EP4), LLAs (Emerging Policy EP5), Conservation Areas (Emerging Policy EP9), GDLs (Emerging Policy EP10) and Access Routes (Emerging Policy IS5) (which are largely unchanged).

Local Guidance and Baseline Studies

6.2.8 In addition to the policy document identified above, there are local guidance and baseline documents as follows:

[7] East Lothian Council. (September 2018). East Lothian Local Development Plan. Available at: https://www.eastlothian.gov.uk/downloads/download/13023/local_development_plan_2018

[8] Midlothian Council. (November 2017). Midlothian Local Development Plan 2017. Available at: https://www.midlothian.gov.uk/info/205/planning_policy/286/development_plans_and_policies

[9] City of Edinburgh Council. (November 2016). Edinburgh Local Development Plan. Available at: https://www.edinburgh.gov.uk/local-development-plan-guidance-1/edinburgh-local-development-plan

[10] South Lanarkshire Council. (January 2021). South Lanarkshire Local Development Plan 2. Available at: https://www.southlanarkshire.gov.uk/info/200145/planning_and_building_standards/39/development_plans/2

[11] Fife Council. (September 2017). Fife Council Adopted Local Development Plan – FIFEplan. Available at: https://www.fife.gov.uk/kb/docs/articles/planning-and-building2/planning/development-plan-and-planning-guidance/local-development-plan-fifeplan

[12] Northumberland County Council. (March 2022). Northumberland Local Plan 2016 – 2036. Available at: https://www.northumberland.gov.uk/Planning/Planning-policy/Plan.aspx

[13] Northumberland National Park. (July 2020). Local Plan. Available at: https://www.northumberlandnationalpark.org.uk/planning/planning-policy/local-plan/

- Scottish Borders Council's Supplementary Guidance (SPG) on Renewable Energy (2018)[14] which provides a spatial framework and landscape capacity study for wind energy development;
- Scottish Borders Council's Wind Energy Consultancy Landscape Capacity and Cumulative Impact Report (2013)[15] which sets out the landscape sensitivities to wind development for landscape character types within Scottish Borders;
- Scottish Borders Council's Local Landscape Designations SPG (2012)[16] which contains a statement of importance for each LLA.
- East Lothian Council's Special Landscape Areas SPG (2018)[17] which provides development guidelines and opportunities for LLAs and Landscape Character Areas (LCA) within East Lothian;
- East Lothian Council's Technical Note 4: Planning For Wind (2016)[18] which sets out the Council's approach to planning for wind. Whilst this document includes some useful guidance, the document relates to superseded Scottish Planning Policy and National Planning Framework 3, not NPF4;
- East Lothian Council's Landscape Capacity Study for Wind Turbine Development in East Lothian (2005)[19] which sets out the sensitivities of the landscape to windfarm development within East Lothian.
- Midlothian Council's Landscape Capacity Study for Wind Turbine Development in Midlothian (2007)[20] which sets out the sensitivities of the landscape to windfarm development within Midlothian.
- Midlothian Council's Special Landscape Areas Supplementary Guidance (2018)[21] and associated LLA Statements of Importance, provides guidance on the seven LLAs within Midlothian; and
- West Lothian Council's Wind Energy Development Supplementary Guidance (2021)[22] which sets out the sensitivities of the landscape to windfarm development within West Lothian.

6.2.9 These form part of the documented baseline and are reviewed in the relevant Sections below, with accompanying commentary on the implications for the proposed development siting and design and the assessment methodology, as appropriate.

6.3 Consultation

6.3.1 A formal scoping report was issued to the Energy Consents Unit (ECU) in March 2023 and a response was provided in June 2023. NatureScot, Scottish Borders Council and East Lothian Council were engaged in further dialogue to finalise matters raised in the comments. These were primarily associated with the final selection of viewpoints and the type of visuals to be produced from each location.

6.3.2 A summary of consultation responses relevant to the landscape and visual assessment is set out in Table 6.1 below.

6.3.3 The scoping comments were reviewed, and a formal response was issued as part of a gatecheck report in September 2023 which detailed how the comments would be addressed.

Table 6.1: Scoping Responses

Consultee	Summary of Response	Where & How Addressed
Energy Consents Unity	The scoping report identified viewpoints to be assessed within the landscape and visual impact assessment. Scottish Borders Council, East Lothian Council, Historic Environment Scotland and Oxton & Channelkirk Community Council have also requested additional viewpoints in their responses.	11 additional viewpoints (Viewpoints 19-30 at **Figures 6.31-6.42**) have been included following feedback from the listed councils. Further dialogue with NatureScot, Scottish Borders and East Lothian Council helped to reach the final viewpoint list.
	As the maximum blade tip height of turbines exceeds 150m the LVIA must include a robust Night Time Assessment with agreed viewpoints to consider the effects of aviation lighting and how the chosen lighting mitigates the effects.	An assessment of night time effects, and commentary on mitigation, is included within this chapter. Seven viewpoints (VPs 2, 3, 5, 7, 9, 11 and 30 (**Figures 6.14, 6.15, 6.17, 6.19, 6.21, 6.23, and 6.42**)) have been selected for night photomontages with VP9, VP11 and VP30 included at the request of East Lothian Council.

[14] Scottish Borders Council. (July 2018). Supplementary Guidance: Renewable Energy. Available at: https://www.scotborders.gov.uk/info/20051/plans_and_guidance/766/renewable_energy_supplementary_guidance

[15] Scottish Borders Council. (July 2013). Wind Energy Consultancy Landscape Capacity and Cumulative Impact Report. Available at: https://www.scotborders.gov.uk/directory_record/47226/landscape_capacity_and_cumulative_impact/category/28/approved_planning_guidance

[16] Scottish Borders Council. (August 2012). Local Landscape Designations SPG. Available at: https://www.scotborders.gov.uk/downloads/download/413/planning_guidance_local_landscape_designations

[17] East Lothian Council. (October 2018). Special Landscape Areas Supplementary Planning Guidance. Available at: https://www.eastlothian.gov.uk/info/210547/planning_and_building_standards/12242/local_development_plan/3

[18] East Lothian Council. (August 2016). Technical Note 4: Planning For Wind. Available at: https://www.eastlothian.gov.uk/downloads/file/27770/technical_note_4_planning_for_wind

[19] East Lothian Council. (May 2005). Landscape Capacity Study for Wind Turbine Development in East Lothian. Available at: https://www.eastlothian.gov.uk/downloads/file/24470/landscape_capacity_study_for_wind_turbines_in_east_lothian

[20] Midlothian Council. (January 2007). Landscape Capacity Study for Wind Turbine Development in Midlothian. Available at: https://www.midlothian.gov.uk/downloads/205/planning_policy

[21] Midlothian Council. (October 2018). Special Landscape Areas Supplementary Guidance. Available at: https://www.midlothian.gov.uk/downloads/205/planning_policy

[22] West Lothian Council. (June 2021). Wind Energy Development Supplementary Guidance. Available at: https://www.westlothian.gov.uk/media/49451/SG-Supplementary-Guidance-Wind-Energy-Development-Adopted-June-2021/pdf/SG_-_Wind_Energy_Development_-_Adopted_-_Word_Version_-_25_June.pdf?m=637602179341800000

Consultee	Summary of Response	Where & How Addressed
	The Scottish Ministers are required to make a reasoned conclusion on the significant effects of the proposed Development on the environment as identified in the environmental impact assessment. The mitigation measures suggested for any significant environmental impacts identified should be presented as a conclusion to each chapter. Applicants are also asked to provide a consolidated schedule of all mitigation measures proposed in the environmental assessment, provided in tabular form, where that mitigation is relied upon in relation to reported conclusions of likelihood or significance of impacts.	Mitigation measures relevant to this chapter are embedded within the design of the proposed development. Further detail of the design evolution can be found within **Chapter 2** of this EIA Report.
NatureScot	The list of proposed viewpoints seems appropriate.	NatureScot were subsequently contacted via email (July 2023) with information regarding the additional viewpoints. NatureScot agreed these additions.
	We are content that impacts on the Upper Tweeddale National Scenic Area (NSA) are scoped out of the assessment.	Upper Tweeddale National Scenic Area (NSA) is scoped out of the assessment.
	We are content that the cumulative LVIA assesses the Cloich Variation scheme rather than the original consented Cloich Wind Farm	Cloich Variation is considered within this assessment.
Scottish Borders Council	Policy 4: The site is within the Lammermuir Hills Special Landscape Area (SLA). Consideration against criteria d) the development should not adversely affect the integrity of the SLA and River Tweed SAC/SSSI.	The landscape setting and impacts upon LLAs are considered as part of this chapter.
	I refer to the applicants scoping report dated 22nd March 2023 and confirm that the general approach to landscape and visual assessment is appropriate and acceptable.	The methodology remains as detailed within the scoping report.
	A full resolution ZTV to blade tip height with legible viewpoints, clear demarcation of the SBC/ELC border and clear background mapping should be made available. This information is required to allow the Council to confirm the viewpoints and landscape and visual receptors. A scale bar on each drawing is also required to aid reviewing the LVIA electronically. The plans are not helpful in their current format as background information is not clearly visible when using zoom online.	A hi-resolution ZTV was issued via email in July 2023 as part of the further engagement with Scottish Borders Council. Scale bars have been included on all figures as part of this chapter.
	In addition to the viewpoints listed in the scoping report the following should be considered for inclusion or adjustment:- - Representative viewpoints on Corepaths and Rights of Way in the Oxton area and on Lauder Common. - Lauder Common Cairn (B6362) - SUW – south west of Lauder at Chester Hill NT 527466 - A68 – an additional VP on the straight section near The Roan NT 552 438 - Edgarhope Wood SUW. - A679/B6456 Junction.	Through further dialogue with Scottish Borders Council, viewpoints on the core paths (VP20 – **Figure 6.32**), Lauder Common (VP22 – **Figure 6.34**), the Southern Upland Way (SUW) at Chester Hill (VP24 – **Figure 6.36),** the A68 near The Roan (VP23 – **Figure 6.35**), SUW at Edgarhope Wood (VP19 – **Figure 6.31**) and the A679/B6456 Junction (VP25 – **Figure 6.37**) are including within this chapter. An additional viewpoint, suggested via email, at Westruther/Greenlaw/Camp Morr (VP26 - **Figure 6.38**) is also included.
	The application will be assessed against NPF4, SBC Local Development Plan Policy ED9 on renewable energy and supplementary guidance including the Ironside Farrar Update of Wind Energy Landscape Capacity and Cumulative Impact Study 2016. This study is based on the LCT's of the Borders Landscape Character Assessment and discusses the underlying capacity for wind turbines of 120m height and greater. Table 6.1 Dissected Plateau Moorland: Lammermuir Plateau describes capacity for 'limited additional development of larger turbines provided this is associated with existing windfarms' with a minimum group separation of 10km recommended. No specific guidance is given for turbines of 220m height nor threshold for capacity. A comprehensive assessment of the Landscape Character Types (LCTs) within the detailed study area will be expected.	The two wind energy studies have been considered as part of this chapter. A comprehensive assessment of the LCTs is also included.
	The site lies wholly within the Lammermuir Hills Special Landscape Area designation. The ES should address this designation and explain the effects of the proposal on the special qualities of the designated landscape as the site lies wholly within the western edge of this designation. The assessment should take account of all relevant landscape related designations.	An assessment of LLAs and other landscape designations is included within this chapter.
	The cumulative effects of the proposed development alongside existing and consented windfarms within the agreed study area will need to be assessed. The degree of separation, layout, scale and perspective of the proposal in relation to the existing Dun Law and proposed Ditcher Law windfarms to the north and west as well as the relationship of the proposal with Fallago Rig and proposed Dunside to the north and east, will be a key consideration. … The disparity of the height of the proposed turbines in relation to some of the existing windfarms may raise concerns. These issues will need to be addressed in the ES and should be demonstrated by photomontage visualisations where relevant.	An assessment of cumulative effects is included within this chapter.

Consultee	Summary of Response	Where & How Addressed
	Sequential cumulative impacts may occur throughout the 45km study area and these should be addressed separately in the ES particularly in relation to the Southern Upland Way (SUW), A68, A697 and B6456, all of which have the potential for significant visual effects.	
	The details of changes in forest cover and the resulting landscape and visual effects also needs to be taken account of in the landscape and visual impact assessment	Any changes to forestry cover are included as part of the proposed development, as described in **Chapter 3** of this EIA Report, and are considered within the assessment of visual effects within this chapter.
	The implications of night time effects will need to be examined as a discrete section within the LVIA. Aviation lighting may appear prominent in night time views and at dusk, dawn and in low light levels particularly in rural unlit landscapes. An aviation lighting assessment is required based on detailed warning light proposals and should include ZTV's and photomontage illustrations to demonstrate potential effects. Consultation with CAA, Edinburgh airport and MOD with regard to lighting requirement, potential effects and options for mitigation is recommended at the outset.	An assessment of night time effects, and commentary on mitigation, is included within this chapter. This is supplemented by night-time ZTVs and photomontages. Mitigation measures relevant to this chapter, including night-time mitigation, are embedded within the design of the proposed development. Further detail of the design evolution can be found within **Chapter 2** of this EIA Report.
	Q: Do consultees agree with the proposed approach? A: We agree with the approach.	The approach remains as detailed within the scoping report.
	Q: Do consultees agree with the proposed study areas? A: We are satisfied with the proposed study areas.	The study area remains as detailed within the scoping report.
	Q: Do consultees agree with the proposed viewpoint list? A: We recommend additional viewpoints should be added, see list above.	Viewpoints have been resolved with Scottish Borders Council, refer to comments above.
	Q: Do consultees agree with the matters scoped out? A: We agree with the matters proposed to be scoped out of the LVIA.	The matters scoped out of this chapter remains as detailed within the scoping report.
	Q: Are there any additional guidance documents that should be taken into consideration in relation to landscape and visual matters? A: 1. SBCs Renewable Energy Supplementary Guidance with cognisance taken of the Ironside Farrar Wind Energy Landscape Capacity study which is incorporated within the SG. 2. SBCs Local Landscape Designations SG. 3. SNH guidance (Siting and Designing windfarms in the Landscape, version 3a, 2017.	The listed documents have been reviewed as part of the baseline of this chapter.
	Q: Can Consultees confirm that they are content with the cumulative LVIA assessing the Cloich Variation scheme, rather than the original consented Cloich and the Cloich Variation? A: The consented Cloich wind farm has now lapsed. SBC has returned our S36 response to the ECU on the 'Cloich Variation' aka Cloich Forest Wind Farm (ECU reference ECU00003288). The cumulative LVIA for this proposal development should be assessed the 'Cloich Variation'.	Cloich Variation is considered within this assessment.
East Lothian Council	For information, the East Lothian Local Development Plan contains some information on cumulative issues for windfarms that may be useful as well as our development proposals and policies. In addition, we have a Landscape Capacity Study which may contain relevant information. Our supplementary planning guidance on Special Landscape Areas gives information on their special features and character and may be relevant. Our Green Network Strategy may also contain useful information.	The listed documents have been reviewed as part of the baseline of this chapter.
	No mention is made in the scoping document on any proposed maximum micro-siting distance. Landform is intricate and sloping within the site. The turbines are generally shown on the plateaux tops, any micro-siting of turbines is therefore unlikely to significantly increase visibility of the turbines within East Lothian. We would however ask that the applicant provides proposed AOD levels for all turbines bases.	Micro-siting distances are confirmed at up to 100m and described in detail within **Chapter 3** of this EIA Report.
	Under the consultation heading the applicant states that consultation will be undertaken with NatureScot and Scottish Borders Council to agree the requirements for visualisations, including which viewpoints to include within the night time assessment. Given the likely impact of the proposal in views from East Lothian including at night time we ask that East Lothian Council also be included in any consultation about night time assessment. We have identified	East Lothian Council have been engaged in further discussion via email to agree which viewpoints will be included for visualisations as part of the night-time assessment. Seven viewpoints (VPs 2, 3, 5, 7, 9, 11 and 30 (**Figures 6.14, 6.15, 6.17, 6.19, 6.21, 6.23, and 6.42**)) have been selected for night photomontages with VP9, VP11 and VP30 included at the request of East Lothian Council.

Consultee	Summary of Response	Where & How Addressed
	viewpoints that should be included in night time assessment below.	
	Section 11 states a visible lighting scheme will be agreed with the Civil Aviation Authority (CAA). We would support full consultation with the Aviation Authority and affected aircraft operators before submission of the application to establish the possibility for a reduced lighting scheme, or whether an alternative solution to visible lighting could be found altogether. The Scoping Report also states in 11.2 that the UK Air Navigation Order sets out the statutory requirement for the lighting of en route obstacles. They further state in paragraph 3.29 that onshore wind turbines of over 150m in height require mandatory visible spectrum lighting. This is not quite the case, as the Order includes provision for a reduced scheme which can be agreed on the basis of an assessment of aircraft using the area. If lighting is to be visible from East Lothian, which we anticipate it would be, we would expect this option to be pursued. The Lammermuirs are currently a relatively dark area, and any reduction in aviation lighting is supported from a visual impact perspective. We therefore encourage the applicant to work with aircraft operators and other operators of tall structures (which may include other projects at some distance) to see if mitigation could be secured by equipping aircraft rather than lighting structures. At the time of the Crystal Rig IV Inquiry, lighting was needed because of the requirements of two single aircraft, which only rarely would fly into the area. If this remains the case it might be possible to avoid aviation lighting altogether if developers can cooperate on this. Sometimes consultees can ask for lighting to be secured by condition. We consider that visible spectrum lighting in this location, in particular aviation lighting, is likely to be a significant effect, and therefore should be included in the EIAR (as the applicant intends).	An assessment of night time effects, and commentary on mitigation, is included within this chapter. This is supplemented by night-time ZTVs and photomontages. Mitigation measures relevant to this chapter, including night-time mitigation, are embedded within the design of the proposed development. Further detail of the design evolution can be found within **Chapter 2** of this EIA Report.
	Q: Do consultees agree with the proposed approach? A: We would refer the applicant to East Lothian's Special Landscape Areas Supplementary Planning Guidance as a	As mentioned above, the listed documents have been reviewed as part of the baseline of this chapter.

Consultee	Summary of Response	Where & How Addressed
	document that should be referred to in assessing impact on views from East Lothian.	
	Q: Do consultees agree with the proposed study areas? A: The study area is shown as 45km and accords with NatureScot's 'Visual Representation of Wind Farms' guidance. The scoping report however suggests that it is anticipated that the detailed study area for visual effects could be reduced to 35km. This would include the whole of East Lothian, however it would not include assessment from Fife. As noted above the towns to the southern coast of Fife offer coastal views looking south to East Lothian and we would ask that assessment of the visual impact on East Lothian be considered from here. The 15km for night-time effects is not sufficient to assess the impact of turbine lighting on East Lothian. Night time assessment should be included for viewpoint 11 and from the coastal areas at Aberlady and Belhaven. 15km for the detailed assessment of effects on landscape character (daytime) is agreed. 35km for cumulative effects is sufficient. There are several applications at similar development stages including this one, Newlands Hill and Dunside (Dunside is noted in table 3.2 but Newlands Hill is not). The scoping report states that schemes which are in scoping will be noted for context but will not be included within the assessment unless they become active applications before the LVIA is submitted. Given the cumulative impact on the East Lothian skyline we would ask that a cumulative lighting assessment should be undertaken to include the granted scheme of Crystal Rig IV and the scoped proposals of Newlands Hill and Dunside. 2.5km for the residential visual amenity assessment is sufficient.	Through further discussion with East Lothian Council via email a viewpoint at Elie Harbour (VP29 – **Figure 6.41**) has been included to represent distant views from Fife. Viewpoint 11 (**Figure 6.23**) has been included as a night-time viewpoint, alongside viewpoints 9 and 30 (**Figures 6.21 and 6.42**), whilst VP11 and VP30 (**Figures 6.23 and 6.42**) lie outwith the 15km night-time study area, commentary is provided within this assessment on the visual effects from these locations. Newlands Hill has subsequently been included within the list of cumulative sites. Ditcher Law and Dunside Wind Farms were both at the scoping stage when the scoping report was issued and applications have subsequently been submitted. Therefore these two schemes are considered as part of the baseline. At the time of this assessment schemes at the scoping stage within the wider landscape are located beyond 5km of the proposed development and are not considered within the assessment. Cumulative lighting effects are considered with the consented Crystal Rig IV where relevant, alongside other developments that will be viewed in combination with the proposed development.
	Q: Do consultees agree with the proposed viewpoint list? A: 4 viewpoints are included to assess the visual impact on East Lothian and in general we agree with these. · Viewpoint 4 from Lammer Law represents hill walkers and tourists and is also important in cumulative assessment. · Viewpoint 9 from the minor road to Longformacus represents local road users. Given the rural nature of the location,	Further clarification was provided via email regarding the viewpoint locations where required. As requested, VP9 and VP11 (**Figures 6.21 and 6.23**) are included within this assessment as night viewpoints. VP15 (**Figure 6.27**) has been included as a wireline as requested. In addition, further viewpoints have been included from the A198 (VP30- **Figure 6.42**), at the Fa'Side Hill Viewpoint (VP27 – **Figure 6.39**), on the B6369 north of Gifford (VP28 –

Consultee	Summary of Response	Where & How Addressed
	turbine lighting could have a greater impact on this location and we suggest that night time visual be provided for this viewpoint. · Viewpoint 11 states that it is from the A1 northeast of Haddington. A more practical location would be from the A199 east of Haddington in the same area. This viewpoint should be assessed as being representative of residents in Haddington as well as road users on both arterial routes and more minor and tourist routes through the centre of East Lothian. The applicant should provide details on the number of hubs visible from this viewpoint compared to other areas within the centre of East Lothian to ensure that this viewpoint is representative of the worst case. An alternative location may be on the A6137 to the north of Haddington or the A199 west of Haddington. This viewpoint should also be used for night time assessment and a night time visual be provided for this viewpoint. · Viewpoint 15 North Berwick Law is important for recreation impact. Its raised elevation gives panoramic views. We would accept a wireline rather than full montage from this location. In addition to the proposed viewpoint locations we also require: · The A198 within the North Berwick to Seton Sands SLA southwest of Gullane (roughly 347979, 682405) representative of users of the coast and the tourist coast road where there are panoramic views to the south of the Lammermuir Hills. This may also be appropriate for night time assessment, as at 25km from the site it is one of East Lothian's darkest areas with wide ranging views of the hills and sea. In these view the proposed wind farm is likely to sit behind Lammer Law with the hubs higher than the hilltop. · The Fa'side viewpoint to the west of Tranent (338076, 671213) with one of East Lothian's Special Landscape Areas and noted for its panoramic views. · The approach along the B6369 north of Gifford (353407, 669168). This provides a view of the setting of Gifford in the valley beneath the hills. At present there is no turbine visibility south from this road. The	**Figure 6.40**), Redstone Rig (VP21 – **Figure 6.33**) and Elie Harbour (VP30 – **Figure 6.42**). Detail of the type and location of the final viewpoints have been shared with East Lothian Council via email.

Consultee	Summary of Response	Where & How Addressed
	ZTVs suggest that blades but no hubs will be introduced into this view. · Redstone Rig (360353, 664524) at the junction of the B6355 road to Duns with the minor road to Longformacus. This is a regularly used viewpoint on a more major road than that in viewpoint 9. We would accept a photomontage from viewpoint 9 and a wireline for this view. · Elie harbour would be representative of the impact of the proposal on views of East Lothian. We would ask that the applicant confirms final grid references for all viewpoints, and photomontage locations for night time assessment for agreement of East Lothian Council before production of visuals.	
	Q: Do consultees agree with the matters scoped out? A: It is proposed to scope out National Cycle Routes and the Rail lines from detailed assessment. The main reason given is that is there is any visibility from these of the proposals the proposed turbines will be seen behind and in context with other wind farms. We would disagree with this statement. Fallago Rig which the proposal may sit behind in some views from East Lothian is limited to mainly blade and tip visibility. The proposal is for much taller turbines with significantly greater visibility over East Lothian, including hubs. However it is appreciated that the ZTV suggests limited visibility from these routes through East Lothian apart from the rail link from North Berwick to Drem.	Following the finalisation of the turbine layout, further review of the National Cycle Routes and Rail Lines has been made as part of this assessment. From both of these types of receptors there are unlikely to be significant visual effects and these routes remain scoped out of this assessment. Further detail is provided within the assessment of effects.
	Q: Are there any additional guidance documents that should be taken into consideration in relation to landscape and visual matters? A: As noted above we would refer the applicant to East Lothian's Special Landscape Areas Supplementary Planning Guidance as a document that should be referred to in assessing impact on views from East Lothian.	The listed documents have been reviewed as part of the baseline of this chapter.
	Q: Can Consultees confirm that they are content with the cumulative LVIA assessing the Cloich Variation scheme, rather than the original consented Cloich and the Cloich Variation? A: Yes	Cloich Variation is considered within this assessment.

Consultee	Summary of Response	Where & How Addressed
Heriot Community Council	Heriot CC is broadly content with the list of sites for the cumulative assessment in Table 3.2 of the Scoping Report, but we draw attention to the omission of Torfichen wind farm from the Scoping Section.	Torfichen Wind Farm is included within the cumulative schemes as part of this assessment.
	Heriot CC concurs with the inclusion of Viewpoint 8; Soutra Aisle. This Viewpoint was suggested to RES in the scoping response by Heriot for the Torfichen scheme – both wind farms will be visible from there according to the respective ZTVs. Heriot CC also concurs with Viewpoint 13 Broad Law. This site is virtually within the Torfichen scheme site, as well as having visibility of the operational wind farms in the area.	These viewpoints remain as described within this chapter of the EIA Report.
	Heriot CC considers that two more Viewpoints need adding; Viewpoint: Corsehope Rings. OS Grid ref E. 339237 N. 651904 This site has been chosen for representing high ground in the Heriot area, and has been included in montages for Greystone Knowe and Wull Muir applications, and also suggested for the Torfichen application. Viewpoint: Lauder Common. OS Grid Ref approximately E. 348700 N. 646200 This position is on the grass track that runs along the spine of the Common in this area, coinciding on the OS map with a printed height reference of 378m, thereby denoting the highest spot with maximum visibility.	Following the receipt of the scoping responses both viewpoint locations were reviewed for suitability. Whilst it is acknowledged that Corsehope Rings is located on elevated ground near Heriot it was deemed that VP13 (**Figure 6.25)**, located along the National Cycle Route and at a similar distance and direction, would provide similar views. As such a viewpoint from this location is not included within this chapter of the EIA Report. Lauder Common is included (VP22 – **Figure 6.34**) within this assessment at the specific location requested by Heriot Community Council.
Oxton & Channelkirk Community Council	Table 3.1 provides an initial list of viewpoints for visual impact assessments. In addition to those proposed we request the following are also included, which can be refined and grid point references defined once there is greater clarity on turbine size/positions: a) Carfraemill area – where there are a number of properties, hotel and campsite b) Carfrae/Hillhouse c) Channelkirk church – which is a site of cultural significance, and there is a small grouping of properties. d) Airhouses – which has 8 residential properties in the area and 6 holiday cottages, along with a footpath and popular circular walk from the village. This is in an elevated position which overlooks the landscape proposed for the windfarm. e) Lauder-Oxton core path – this lies to the south of Oxton. f) A location representative of the view from Wiselawmill/Midburn/Bowerhouse/Collielaw – these lie to the south of Oxton and lie within the OCCC area. g) The A68 junction with the access to Oxton (facing south) – there is concern that the visibility of the turbines at this junction could be a distraction to drivers. h) The A68/A697 Carfraemill roundabout – there is concern that the visibility of the turbines at this major junction could be a distraction to drivers.	Following receipt of the scoping responses the listed viewpoints were reviewed for suitability. Viewpoints a, b, g and h were found to have limited visibility from safely accessible public locations and so were not included within this assessment. Viewpoints c, e, f lay near VP2 (**Figure 6.14**) and VP3 (**Figure 6.15**), as such these locations were deemed sufficiently represented to allow a thorough assessment of effects to take place. These proposed viewpoints were therefore not included within this EIA Report. Viewpoint d was reviewed and, through similar suggestions by other consultees, a new viewpoint west of Oxton (VP20 – **Figure 6.32**) has been included. This lies near to the suggested location and will provide representative views from this area.
	We note that the SBC Renewable Energy Supplementary Guidance (including Ironside Farrar landscape capacity study) is included and this is welcomed as a key SBC policy document to assess landscape capacity, visual impact and cumulative effect.	These listed documents remain as part of the baseline of this chapter.
	As the application is for turbines up to 220m tall there is a likelihood that these will exceed the 150m limit which requires the use of aircraft warning lights. The scoping report does mention this. The area is very rural with negligible light pollution and there is concern that such lights will adversely affect the enjoyment of the night sky that the setting provides or be a potential source of light pollution. We expect that the applicant reviews the use the latest and emerging technologies (such as weather based lux reduction and aircraft proximity radar systems) to minimise the impact of any lighting which may be required. Nevertheless we also ask that night-time visualisations are produced for the various landscape assessments and viewpoints.	An assessment of night-time effects, and commentary on mitigation, is included within this chapter. This is supplemented by night-time ZTVs and photomontages. Mitigation measures relevant to this chapter, including night-time mitigation, are embedded within the design of the proposed development. Further detail of the design evolution can be found within **Chapter 2** of this EIA Report.
	Paragraph 3.59 outlines that a Residential Visual Amenity Assessment (RVAA) considers properties within 2.5km of the turbines. Given the potential size of the turbines we request the RVAA is extended to include properties up to 3km from the nearest turbine, the need for this was previously identified by SBC in ECU00002073 which notes that the 2km guidance was established based on much smaller turbines. This principle has been further established in the scoping opinion for the neighbouring plans for Ditcher Law.	RVAA study areas are site specific and initial desk- and site-base analysis indicates that a 2.5km study area will be appropriate for this wind farm as the Residential Visual Amenity Threshold is unlikely to be reached beyond the 2.5km study area. Properties just beyond the 2.5km study area have been considered during site visits to ensure the 2.5km study area remains appropriate to the assessment.

Consultee	Summary of Response	Where & How Addressed
	We request that vegetation within the curtilage of any properties is not considered in the RVAA. Where this provides substantial screening, this may not be appropriate in all circumstances where it would restrict residents to make changes to their garden.	The RVAA Technical Guidance Note (TGN) 02/19[23] requires assessments of seasonal variations in visibility. As such, summer and winter views have been considered within the RVAA to assess the seasonal variation in screening provided by existing vegetation.
	We request more clarity on how the RVAA will establish where a site visit is required (as opposed to being conducted from a publicly accessible location) and expect this to be conducted for those which are most adversely affected. We encourage the developer to engage with the affected residents at an early stage. This is in line with Technical Guidance Note 2/19. It is also suggested that the RVAA uses photomontages for the assessment.	The approach to the RVAA is in line with TGN 02/19. A full methodology is detailed within the RVAA, included as a technical appendix to this chapter. Photomontages have not been found to be necessary to support the RVAA.
	As noted in point 10 the turbines may require aircraft lighting. An assessment should be made to determine which properties in the community are affected by light pollution from these lights. Further information will be required on the nature of the lights (for example will they be directional and not cast light downwards), nevertheless some properties may be located in a position where they may be adversely affected by the lighting.	An assessment of night-time effects, and commentary on mitigation, is included within this chapter. This is supplemented by night-time ZTVs and photomontages. Mitigation measures relevant to this chapter, including night-time mitigation, are embedded within the design of the proposed development. Further detail of the design evolution can be found within **Chapter 2** of this EIA Report. Effects on residential properties are included within the RVAA, appended as a technical appendix to this chapter.

6.4 Methodology

Scope of Assessment

6.4.2 "Landscape and Visual Impact Assessment is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and people's views and visual amenity." (Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)[24], para. 1.1).

6.4.3 Paras. 2.20-2.22 of the same guidance indicate that the two components (assessment of landscape effects, and assessment of visual effects) are *"related but very different considerations"*.

6.4.4 The assessment method for this LVIA draws upon the established GLVIA3; An Approach to Landscape Character Assessment (Natural England, 2014)[25], Landscape Institute Technical Information Note (LI TIN) 05/2017[26] regarding townscape character; LI Technical Guidance Note 02/2019 Residential Visual amenity assessment (RVAA); Landscape Institute's Technical Guidance Note 02/21: Assessing landscape value outside national designations[27]; LI Technical Guidance Note 06/19 Visual Representation of development proposals[28] and other recognised guidelines.

6.4.5 The methodology is described in more detail in **Technical Appendix 6.1**.

Baseline Characterisation

Study Area

6.4.6 It is accepted practice within landscape and visual assessment work that the extent of the study area for a development proposal is broadly defined by the visual envelope of the proposed development and the anticipated extent of visibility arising from the development itself, based on the Zone of Theoretical Visibility (ZTV) study. In this case a study area of 45km from the proposed wind turbines has been deemed as being appropriate to cover all potentially material landscape and visual impacts. Further detailed study areas are included as follows:

- 15km from the proposed wind turbines for detailed assessment of effects on landscape character (daytime);
- 15km from the proposed wind turbines for night time effects;
- 35km from the proposed wind turbines for cumulative effects; and
- 2.5km from the proposed wind turbines for the residential visual amenity assessment.

Desk Study / Field Survey

6.4.7 A baseline study has been conducted to establish the existing and future baseline conditions at the site and in the surrounding area.

[23] Landscape Institute. (March 2019). Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19. Available at: https://www.landscapeinstitute.org/technical-resource/rvaa/

[24] Landscape Institute with the Institute of Environmental Management and Assessment (2013). The Guidelines for Landscape and Visual Impact Assessment, 3rd Edition. Routledge, Oxon.

[25] Natural England. (2014). An Approach to Landscape Character Assessment. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691184/landscape-character-assessment.pdf

[26] Landscape Institute. (2018). Townscape Character Assessment Technical Information Note 05/2017. Available at: (2018). Townscape Character Assessment Technical Information Note 05/2017. Landscape Institute.

[27] Landscape Institute. (2021). Assessing Landscape Value Outside National Designations Technical Guidance Note 02/21. Available at: https://www.landscapeinstitute.org/news/new-guidance-assessing-landscape-value-outside-national-designations/#:~:text=TGN%2002%2D21%3A%20Assessing%20landscape,What%20is%20a%20valued%20landscape%3F

[28] Landscape Institute. (2019). Visual Representation of Development Proposals Technical Guidance Note 06/19. Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

6.4.8 For this assessment, this has comprised a desk-based review of the relevant current national and local planning policy, designations, character assessments and other key considerations.

6.4.9 Zone of Theoretical Visibility (ZTV) studies have been produced to help identify the potential visual effects and therefore the scope of receptors likely to be affected. This has been tested on site during site visits in March and September 2023.

6.4.10 Full details of the approach to the baseline study are included within **Technical Appendix 6.1.**

Assessment Terminology and Judgements

6.4.11 A full glossary is provided in **Technical Appendix 6.1**. The key terms used within this assessment are:

- **Susceptibility** and **Value** – which contribute to **Sensitivity** of the receptor;
- **Scale, Duration** and **Extent** - which contribute to the **Magnitude** of effect; and
- Significance.

6.4.12 These terms are described in more detail below.

Sensitivity Criteria

6.4.13 **Susceptibility** indicates the ability of a landscape or visual receptor to accommodate the proposed development "without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies." (GLVIA3, para. 5.40).

Table 6.2: Landscape Susceptibility

High	Undue consequences are likely to arise from the proposed development.
Medium	Undue consequences may arise from the proposed development.
Low	Undue consequences are unlikely to arise from the proposed development.

6.4.14 Susceptibility of landscape character areas is influenced by their characteristics and is frequently considered (though often recorded as 'sensitivity' rather than susceptibility) within documented landscape character assessments and capacity studies.

6.4.15 Susceptibility of designated landscapes is influenced by the nature of the special qualities and purposes of designation and/or the valued elements, qualities or characteristics, indicating the degree to which these may be unduly affected by the development proposed.

6.4.16 Susceptibility of accessible or recreational landscapes is influenced by the nature of the landscape involved; the likely activities and expectations of people within that landscape and the degree to which those activities and expectations may be unduly affected by the development proposed.

6.4.17 Susceptibility of visual receptors is primarily a function of the expectations and occupation or activity of the receptors (GLVIA3, para 6.32).

6.4.18 **Landscape Value** is "the relative value that is attached to different landscapes by society" (GLVIA3, page 157).

Table 6.3: Landscape Value

National/International	Designated landscapes which are nationally or internationally designated for their landscape value.
Local / District	Locally or regionally designated landscapes; also areas which documentary evidence and/or site observation indicates as being more valued than the surrounding area.
Community	'Everyday' landscape which is appreciated by the local community but has little or no wider recognition of its value.
	Despoiled or degraded landscape with little or no evidence of being valued by the community.

6.4.19 **Sensitivity** is assessed by combining the considerations of susceptibility and value described above. The differences in the tables below reflect a slightly greater emphasis on value in considering landscape receptors, and a greater emphasis on susceptibility in considering visual receptors.

Table 6.4: Landscape Sensitivity

Landscape Sensitivity		Susceptibility		
		High	Medium	Low
Value	National/International	High	High-Medium	Medium
	Local/District	High-Medium	Medium	Medium-Low
	Community	Medium	Medium-Low	Low
	Limited	Low	Low-Negligible	Negligible

Table 6.5: Visual Sensitivity

Visual Receptor Sensitivity		Susceptibility		
		High	Medium	Low
Value	National/International	High	High-Medium	Medium
	Local/District	High-Medium	High-Medium	Medium
	Community	High-Medium	Medium	Medium-Low
	Limited	Medium	Medium-Low	Low

6.4.20 For visual receptors, susceptibility and value are closely linked - the most valued views are also likely to be those where viewer's expectations will be highest. The value attributed relates to the value of the view, e.g. a National Trail is nationally valued for access, not necessarily for the available views. Typical examples of visual receptor sensitivity are plotted in a diagram in **Technical Appendix 6.1**.

Magnitude of Effect

6.4.21 Scale of effect is assessed for all landscape and visual receptors and identifies the degree of change which will arise from the development.

Table 6.6: Scale of Effect

Large	Total or major alteration to key elements, features, qualities or characteristics, such that post development the baseline will be fundamentally changed.
Medium	Partial alteration to key elements, features, qualities or characteristics, such that post development the baseline will be noticeably changed.
Small	Minor alteration to key elements, features, qualities or characteristics, such that post development the baseline will be largely unchanged despite discernible differences.
	Very minor alteration to key elements, features, qualities or characteristics, such that post development the baseline will be fundamentally unchanged with barely perceptible differences.

6.4.22 Duration of effect is assessed for all landscape and visual receptors and identifies the time period over which the change to the receptor as a result of the development will arise.

Table 6.7: Duration of Effect

Permanent	The change is expected to be permanent and there is no intention for it to be reversed.
Long-term	The change is expected to be in place for 10-25 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.
Medium-term	The change is expected to be in place for 2-10 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.
	The change is expected to be in place for 0-2 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.

6.4.23 The effects are considered to be reversible as after a period of 50 years the proposed development will be removed, unless a further application to extend the life of the proposed development is applied for and granted, or an alternative application to 'repower' with new wind turbines and associated infrastructure is applied for and granted. Whilst 50 years is regarded as Permanent for the purposes of this assessment, the effects of the proposed development on the landscape are reversible.

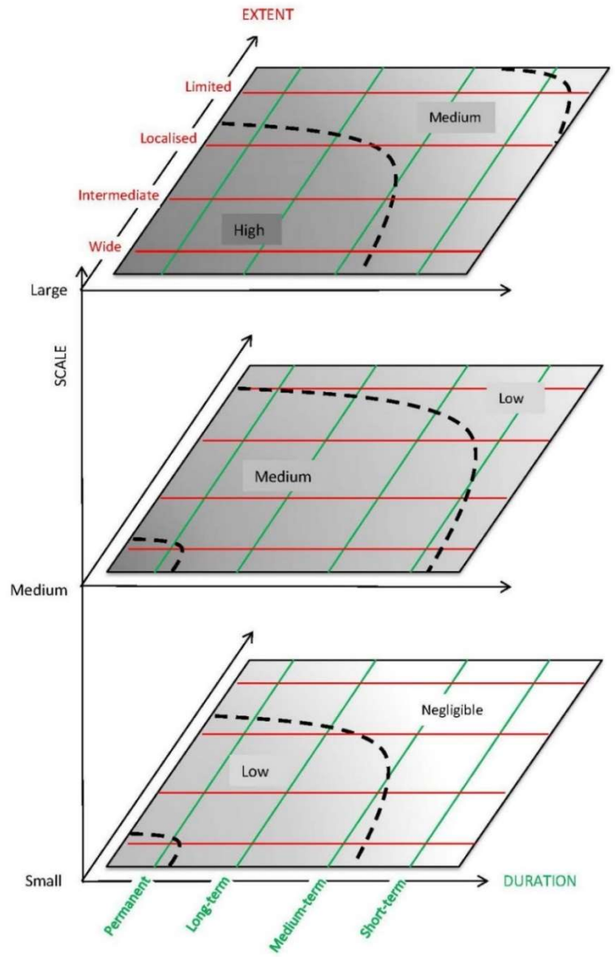
6.4.24 Extent of effects is assessed for all receptors and indicates the geographic area over which the effects will be felt.

Table 6.8: Extent of Effect

Wide	Beyond 4km, or more than half of receptor.
Intermediate	Up to approx. 2-4km, or around half of receptor area.
Localised	Site and surroundings up to 2km, or part of receptor area (up to approx. 25%).
	Site, or part of site, or small part of a receptor area (< approx. 10%).

6.4.25 The Magnitude of effect is informed by combining the scale, duration and extent of effect. **Diagram 6.1** illustrates the judgement process:

Diagram 6.1: Magnitude of Effect



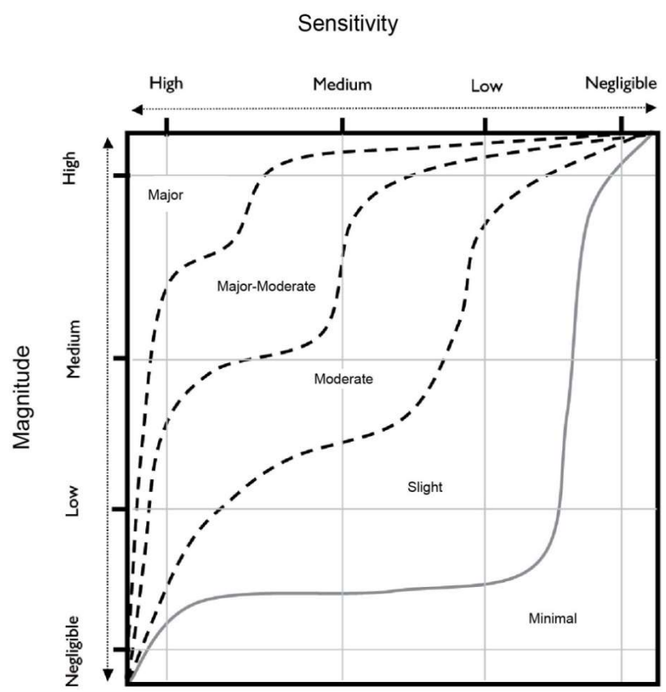
6.4.26

6.4.27 As can be seen from the illustration above, scale (shown as the layers of the diagram) is the primary factor in determining magnitude; most of each layer indicates that magnitude will typically be judged to be the same as scale, but may be higher if the effect is particularly widespread and long lasting, or lower if it is constrained in geographic extent or timescale. Where the Scale of effect is judged to be Negligible, the Magnitude is also assumed to be Negligible and no further judgement is required.

Significance Criteria

6.4.28 **Significance** indicates the importance or gravity of the effect. The process of forming a judgement as to the degree of significance of the effect is based upon the assessments of magnitude of effects and sensitivity of the receptor to come to a professional judgement of how important this effect is. This judgement is illustrated by Diagram 6.2 below:

Diagram 6.2: Significance



6.4.29

6.4.30 The significance ratings indicate a 'sliding scale' of the relative importance of the effect, with Major being the most important and Minimal being the least. Effects that are Major-Moderate or Major are considered to be significant. Effects of moderate significance or less are *"of lesser concern"* (GLVIA3, para 3.35). It should also be noted that whilst an effect may be significant, that does not necessarily mean that such an impact will be unacceptable, or should necessarily be regarded as an *"undue consequence"* (GLVIA3, para 5.40).

6.4.31 Where intermediate ratings are given, e.g. 'Moderate-Slight', this indicates an effect that is both less than Moderate and more than Slight, rather than one which varies across the range. In such cases, the higher rating will always be given first; this does not mean that the impact is closer to that higher rating but is done to facilitate the identification of the more significant effects within tables. Intermediate judgements may also be used for judgements of Magnitude.

Beneficial / Adverse / Neutral

6.4.32 Effects are defined as adverse, neutral or beneficial. Neutral effects are those which overall are neither adverse nor beneficial but may incorporate a combination of both.

6.4.33 The decision regarding the significance of effect and the decision regarding whether an effect is beneficial or adverse are entirely separate. For example, a rating of Major and Beneficial would indicate an effect that was of great significance and on balance beneficial, but not necessarily that the proposals would be extremely beneficial.

6.4.34 Whether an effect is Beneficial, Neutral or Adverse is identified based on professional judgement. GLVIA3 indicates at paragraph 2.15 that this is a *"particularly challenging"* aspect of assessment, particularly in the context of a changing landscape.

Night Time Assessment

6.4.35 Onshore wind turbines of over 150m in height require mandatory visible spectrum aviation lighting. Night time assessment of visible aviation lighting for onshore wind turbines on landscape and visual receptors is a relatively new area and there is as yet no specific policy or guidance on the subject. Emerging best-practice, including Annex 1 of 'NatureScot preapplication guidance for onshore wind farms' by NatureScot (2023)[29], is followed in undertaking this assessment.

[29] NatureScot. (September 2023). NatureScot pre-application guidance for onshore wind farms. Available at: https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms

6.4.36 A study area of 15km for night time effects has selected as appropriate for this assessment. Beyond 15km lighting from other sources, such as from cumulative schemes, settlements or roads, will result in the proposed development being seen as a minor element within the view.

6.4.37 East Lothian Council have requested night viewpoints at two locations outwith the 15km study area, viewpoints 11 and 30 (**Figures 6.23 and 6.42**). These are included as illustrative night viewpoints to represent the effects from distances greater than 15km and to allow East Lothian Council to understand likely night time effects from within their administrative area.

Effects on Landscape Character

6.4.38 For landscape character areas, susceptibility is judged based on the degree to which they are currently characterised by darkness and/or an absence of development. Value is judged based on the same factors as for the daytime assessment unless particular factors suggest otherwise. For example, identification of a Dark Sky Park which would increase value; or where factors that contribute to value in daytime are irrelevant at night, which may reduce value at night.

Effects on Visual Receptors

6.4.39 For visual receptors, the assessment will take account of the different importance attached to views in the night time environment. Generally, the value attached to night-time views is considered to be low unless there is a particular feature that can be best appreciated in the hours of darkness. This may include views of stars and the night sky that are only possible in particularly dark areas or views of well-known landmarks that are lit up at night.

6.4.40 The susceptibility of receptors also differs at night reflecting the different activities people undertake in the hours of darkness. For example, drivers using roads at night tend to be more focused on the road and the area illuminated by their headlights than during the day and may have oncoming headlights, cat's eyes or other reflective signage drawing their attention, resulting in lower susceptibility. This is particularly the case on unlit rural roads that may be narrow and winding. On the other hand, people taking part in activities requiring darkness, such as stargazing, would be of higher susceptibility. **Technical Appendix 6.1** provides further detail on the approach taken to visual receptor sensitivity at night.

Cumulative Assessment

6.4.41 Cumulative assessment relates to the assessment of the effects of more than one development.

6.4.42 A search area of 35km from the site (typically of a similar scale to the study area) has been agreed with key stakeholders. In terms of selecting which wind turbine proposals within the study area should be included, NatureScot Guidance 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (2021)[30] advises that:

6.4.43 "An assessment of cumulative impacts associated with a specific development proposal should encompass the effects of the proposal in combination with:

- existing development, either built or under construction;
- approved development, awaiting implementation; and
- proposals awaiting determination within the planning process with design information in the public domain. Proposals and design information may be deemed to be in the public domain once an application has been lodged, and the decision-making authority has formally registered the application." [para. 26] – note that this category also includes recently refused applications which may yet be appealed.

6.4.44 For this assessment, the following detailed criteria are used for the cumulative assessment:

i Full details (including wind turbine locations and heights) are included for wind farms of 50m to tip (or greater) within the full 35km study area. The 35km radius is applied flexibly such that wind farms only just beyond this distance and/or those that are judged to be particularly relevant to the assessment based on the assessed effects of the proposed development are also included in full detail.

ii A cut-off for finalising the sites of 08 September 2023 has been used. Ditcher Law, submitted to the ECU on the 13 September 2023 (ECU ref: ECU00004890), has been subsequently included after the cut-off date due to its proximity to the proposed development.

iii The visualisations model all developments within 20km of the proposed wind turbines. This extends beyond the 15km extent initially indicated in the formal scoping report (March 2023) to ensure that all of the closest current planning applications are included within the assessment and captures the full extent of the existing wind farms at Crystal Rig I, II and III/Aikengall I, II and IIa.

[30] NatureScot. (March 2021). Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

6.4.45 These criteria were proposed in the formal scoping report (March 2023) and further discussed, where relevant, with key stakeholders (refer to **Table 6.1**).

6.4.46 Schemes which are in scoping are noted for context but are not included within the assessment unless they have become active applications before the LVIA is submitted. This is because reliable information with respect to the scheme design is not available for these schemes and any assessment could not therefor have any degree of certainty.

6.4.47 The cumulative assessment examines the same landscape and visual receptors as the assessment for the proposed development. The assessment is informed by cumulative ZTVs, showing the extent of visual effects of the schemes in different colours to illustrate where visibility of more than one development is likely to arise. Cumulative wireframes have been prepared which show each of the developments in different colours so that they are each readily identifiable.

6.4.48 In addition, the effects on users of routes through the area, from which wind farms may be sequentially visible as one passes through the landscape are also considered. This assessment is based on the desk study of ZTVs and aerial photography, and site visits to travel along the routes being assessed.

6.4.49 It is important to note the following:

- Operational and consented wind farms are treated as being part of the landscape and visual baseline i.e. it is assumed that consented schemes will be built except for occasional exceptions where there is good reason to assume that they will not be constructed. Reflecting this, the main LVIA assesses effects on the basis that these developments are (and will be for consented developments) in place as part of the baseline.
- Schemes 'in planning' are assessed via a series of scenarios involving one or several of the other developments being consented along with (or before) the proposed development. Two assessment ratings are provided for each scenario – one which indicates the combined effects if all of the schemes in in that scenario were consented together (combined effects); and one which indicates the additional effects that consenting the application scheme would have if the other schemes were already consented (incremental effects).

6.4.50 For each assessed receptor, combined effects may be the same as for the application scheme, or greater (where the influence of multiple schemes would increase effects, or where schemes in planning other than the application scheme would have the predominant effects).

6.4.51 For each assessed receptor, incremental effects may be the same as for the application scheme, or reduced (where the influence of other schemes in planning would be such that were they consented and considered to be part of the baseline, the incremental change arising from the addition of the application scheme would be less).

Residential Visual Amenity Assessment

6.4.52 Wind farms are generally regarded as being a form of development for which it is appropriate to undertake a residential visual amenity assessment, as the scale of development is such that the wind turbines may lead to effects being perceived as 'overbearing' or 'overwhelming' as set out within the Landscape Institute's Residential Visual Amenity Assessment (RVAA) Guidance (LI TGN 02/19) (2019).

6.4.53 For the proposed development a 2.5km study area for the RVAA has been selected. The full methodology for the study, in line with LI TGN 02/19, is set out within **Technical Appendix 6.3**.

6.4.54 Cross references are made between the LVIA and the RVAA as follows:

- where viewpoints are located close to properties, this is noted in the RVAA;
- the availability of views from properties towards the proposed development will be noted where relevant within the LVIA (for example in respect of effects on settlements); and
- an overview of visual effects on the properties covered by the RVAA will be provided within the summary.

Distances

6.4.55 Where distances are given in the assessment, these are approximate distances between the nearest wind turbine and the nearest part of the receptor in question, unless explicitly stated otherwise.

6.5 Baseline

6.5.1 An overview of the baseline study is provided in this section, presenting a review of the key local guidance documents and all of the landscape and visual receptors identified within the extent of the study area.

6.5.2 This section has undertaken an initial assessment of all the identified receptors and sets out which receptors merit further detailed consideration in Section 6.6: Assessment of Potential Effects; and which receptors are not taken forward for further assessment, as effects *"have been judged unlikely to occur or so insignificant that it is not essential to consider them further"* (GLVIA3, para. 3.19). Full baseline descriptions are provided alongside the assessment of effects for those receptors taken forward to Section 6.6, for ease of reference.

6.5.3 Both this baseline study section and Section 6.6 describe landscape character and visual receptors before considering designated landscapes. It is common for designations to encompass both character and visual considerations within their special qualities or purposes of designation. It therefore makes a more natural reading sequence to draw together those aspects of character and views which relate to the designation if they have been described earlier in the report.

Zone of Theoretical Visibility (ZTV) Studies

6.5.4 ZTV studies have been generated based on the layout of the proposed development and the candidate wind turbine sizes. The ZTVs have been used as a tool to inform the professional judgements made in this LVIA during the iterative design process and stages.

6.5.5 The ZTV studies are shown on **Figures 6.5** and **6.6** and indicate areas of potential visibility. In accordance with NatureScot guidance 'Visual Representation of Wind Farms' (2017)[31] the analysis has been prepared using a topographic model alone (**Figure 6.5**) and including woodlands and settlements (with heights derived from NEXTMAP25 surface mapping data) as visual barriers to provide a more realistic indication of potential visibility (**Figure 6.6**).

6.5.6 The ZTV studies have been used to determine which landscape and visual receptors are likely to be affected and merit detailed consideration in the assessment of effect, and those which are unlikely to have visibility.

6.5.7 Further ZTV studies have been prepared to support the assessment of character (**Figure 6.7**), night time lighting (**Figure 6.12**) and cumulative effects (**Figures 6.9 and 6.10**) effects.

6.5.8 It should be borne in mind that the ZTVs represents a theoretical model of the potential visibility of the proposed development. In reality, landscape features such as trees, hedgerows, embankments, landform and / or buildings found on the ground, but not accounted for within the surface mapping dataset, are likely to combine to screen the proposed development to a greater degree. It should be noted that there is active forestry within the area, resulting in the felling and replanting of some areas of woodland modelled in the ZTV study (Figure 6.6) which may result in localised variations to the visibility pattern. As a result, the extent of actual visibility experienced on the ground may differ to that suggested by the ZTV study.

ZTV and Zone of Visual Influence (ZVI)

6.5.9 The ZTV studies shown of **Figures 6.5 and 6.6** indicate that the proposed development will theoretically be largely visible within 5km of the proposed wind turbines, except on the sides of steep sided hills furthest from the site, and at the base of steep sided valleys and cleughs.

6.5.10 Between 5-15km theoretical visibility to the east, south and west, becomes more intermittent, due to the landform and areas of forest/woodland. To the north, the Lammermuir Hills create a break in theoretical visibility beyond approximately 5km, where the landform falls on the north side of the hills (see Figure 6.4) When theoretical visibility resumes in this direction it is largely limited to intermittent visibility of blade tips between 5-15km.

6.5.11 Further from the site, between 15-25km, theoretical visibility becomes more limited, particularly to the east and south. In the west, theoretical visibility is shown on the east facing slopes of the Moorfoot Hills. To the north there is an increase in theoretical visibility, particularly along the A1 road corridor and to the south of Gullane, Dirleton and North Berwick. Theoretical visibility to the north varies between hub and tip visibility and blade tip only visibility.

[31] NatureScot. (February 2017). Visual Representation of Wind Farms. Available at: https://www.nature.scot/doc/visual-representation-wind-farms-guidance

6.5.12 Beyond 25km theoretical visibility in the east, south-east, south and west becomes increasingly fragmented with theoretical visibility only shown on areas of higher or more open ground. Theoretical visibility is largely absent in the south-west and is predominantly shown on hill tops and ridge lines; this is due in part to the large areas of forestry within this area and the presence of tall hills closer to the site which provide a degree of screening. To the north and north-west theoretical visibility is shown across the Firth of Forth, with patchy visibility shown along the landform on the north side of the Firth. To the north-east, visibility across the mouth of the Firth/the North Sea is reduced close to shore due to the screening provided by the Lammermuir Hills closer to the site.

6.5.13 The anticipated main areas of visibility, hereafter referred to as the 'Zone of Visual Influence' (ZVI), is described below. A ZVI is used to describe the ZTV with a greater degree of accuracy and is based on site observations and detailed study of the ZTVs.

6.5.14 Site observations confirm that the ZVI will extend:

- to the edge of Gullane, Dirleton and North Berwick in the north;
- approximately 5km to the north-east along the southern half of the Lammermuir Hills;
- approximately 17km to the east to Black Hill Wind Farm and Camp Moor;
- approximately 21km to the south-east towards Greenlaw and Swethope Hill;
- approximately 25km to the south;
- approximately 25km to the south-west and west to encompass the Moorfoot Hills; and
- along the eastern side of the Pentland Hills north of Carlops, to Arthur's Seat and to Tranent in the north-west.

6.5.15 The ZVI is drawn on **Figure 6.5** for ease of reference.

6.5.16 Based on fieldwork observations, whilst there may be some areas with visibility of the proposed turbines, it is judged that landscape or visual receptors outside the ZVI described above will experience Negligible change and are not assessed in further detail in this report.

Current Baseline

Landscape Character

6.5.17 Paragraphs 5.13-5.15 of GLVIA3 indicate that landscape character studies at the national or regional level are best used to *"set the scene"* and understand the landscape context. It indicates that Local Authority Assessments provide more detail and that these should be used to form the basis of the assessment of effects on landscape character, with (appropriately justified) adaptation, refinement and interpretation where required.

6.5.18 In Scotland, NatureScot commissioned a series of regional Landscape Character Assessments (LCAs) in the 1990s which mapped the landscape character of all of Scotland and typically covered individual local authority areas.

6.5.19 Following a review, these assessments were superseded by NatureScot's 2019 Landscape Character Assessment[32], which provides a unified approach to Landscape Character Types (LCTs) across local authority areas and takes into account the latest available data.

6.5.20 NatureScot's 2019 Landscape Character Assessment is used as the basis of consideration of effects on landscape character for this assessment.

6.5.21 The latest landscape capacity studies for onshore wind, produced by some local authorities within the study area, were produced prior to the 2019 update to the NatureScot LCA and reference the LCAs from the 1990s to form judgements on the sensitivity of individual LCTs. It is noted that the 1990s LCTs remain broadly similar to those within NatureScot's 2019 assessment. Where LCTs differ between the 2019 assessment and those listed within the landscape capacity studies, these changes are described and reasonable inferences made in transposing the information.

6.5.22 In England, landscape character in Northumberland is covered either within the Northumberland Landscape Character Assessment (2010)[33] or the Update of Landscape Character Assessment for Northumberland National Park (2019)[34].

6.5.23 The relevant LCTs and LCAs are shown on **Figure 6.3**.

[32] NatureScot. (2019). Scottish Landscape Character Assessment. Available at: https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions

[33] Northumberland County Council. (August 2010). Northumberland Landscape Character Assessment. Available at: https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Studies%20and%20Evidence%20Reports/Landscape%20Green%20Spaces%20Studies/1.%20Landscape%20Character/Landscape-Character-Part-A.pdf

[34] Northumberland National Park Authority. (June 2019). Update of Landscape Character Assessment for Northumberland National Park. Available at: https://www.northumberlandnationalpark.org.uk/wp-content/uploads/2020/07/NNPA-022-Landscape-Character-Assessment.pdf

National Landscape Character

6.5.24 There is no 'high level' national landscape character assessment for Scotland, instead landscape character is assessed at a local level within NatureScot's 2019 Landscape Character Assessment.

6.5.25 In England, national landscape character is described within Natural England's National Character Area (NCA) Profiles (2014)[35]. Within the study area these include:

- NCA1: North Northumberland Coastal Plain (37.7km, east)
- NCA3: Cheviot Fringe (29.0km, south-east)
- NCA4: Cheviots (36.9km, south-east)

6.5.26 The NCA profiles provide the wider context to the landscape character assessment. Together they describe the transition in character from the smooth rounded hills of the Cheviots (NCA4), which rise steeply above the lowland belt of the Cheviot Fringe NCA (NCA3) to the gently undulating, windswept plain along Northumberland's coast (NCA1).

6.5.27 The NCAs provide context to assessment. However, they lie outwith the 15km landscape character study area and effects on NCAs are not assessed in further detail.

Local Landscape Character

6.5.28 Only those LCTs within 15km of the nearest wind turbine are included in this assessment, as LCTs beyond 15km will not experience more than Negligible effects on character, given the reduction of effects with distance, the theoretical visibility pattern shown on the ZTV (see **Figure 6.7**) and the existing pattern of wind farm development (see **Figure 6.8**) across the study area. **Figure 6.7** has been prepared which overlays the ZTV study (**Figure 6.5**) with the landscape character areas/types shown on **Figure 6.3** to help aid the narrative below. The NatureScot Landscape Character Assessment (2019) provides the sole reference for landscape character within this 15km area.

NatureScot Landscape Character Assessment (2019)

6.5.29 The site is predominantly located within the western extent of LCT90 – Dissected Plateau Moorland, which extends eastward along the boundary between East Lothian and Scottish Borders Council. A short section of the site access route is located within LCT115 – Upland Valley with Mixed Farmland which broadly follows the A68 road corridor between Oxton and Lauder.

6.5.30 The following LCTs are excluded from more detailed assessment on the basis that effects are likely to be negligible:

- LCT269 – Upland Fringes – Lothians (4.5km, north) – this linear LCT runs east to west in the transitional landscape to the north of the Lammermuir Hills. It is noted that visibility of existing turbines is not dominant in most of this LCT due to the rolling landform, shelterbelts and plantations that reduce turbine impacts. **Figure 6.7** shows limited visibility of the proposed development within the LCT except for in more distant views to the west, where the existing Dun Law, Pogbie and Keith Hill Wind Farms (see **Figure 6.8**) lie between the site and this LCT. Due to the visibility pattern and the locations of existing wind farms, the proposed development is unlikely to alter the character of this area.
- LCT270 – Lowland River Valleys – Lothians (8.6km, north-west) & LCT270 – Lowland River Valleys – Lothians (11.3km, north) – these two areas of LCT270 are primarily characterised by meandering water courses with views generally enclosed by topography and dense woodland. This enclosure explains the limited visibility shown within these areas of LCT270 on **Figure 6.7**. Visibility of the proposed development will be limited to a very small number of blade tips from small areas of these LCTs, often seen behind or in the context of existing wind farms. This semi-distant, limited visibility is unlikely to alter the character of these LCTs which will remain predominantly enclosed, rural and tranquil.

6.5.31 Effects on the following LCTs are assessed within Section 6.6, with baseline descriptions provided alongside the assessment of effects for ease of reference:

- LCT90 – Dissected Plateau Moorland (includes site)
- LCT115 – Upland Valley with Mixed Farmland (includes site)
- LCT266 – Plateau Moorland – Lothians (2.2km, north)
- LCT91 – Plateau Grassland – Borders (2.3km, west)
- LCT99 – Rolling Farmland – Borders (3.8km, south)
- LCT267 – Plateau Grassland – Lothians (5.2km, north-west)

[35] Natural England. (2014). National Landscape Character Area Profiles. Available at: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

- LCT117 – Pastoral Upland Fringe Valley (7.0km, south)
- LCT270 – Lowland River Valleys – Lothians (7.4km, north)
- LCT103 – Undulating Upland Fringe (7.6km, south)
- LCT115 – Upland Valley with Mixed Farmland (8.3km, east)
- LCT275 – Lowland Farmed Plains – Lothians (8.3km, north)
- LCT114 – Pastoral Upland Valley (9.4km, south-west)
- LCT105 – Upland Fringe Moorland with Hills (9.8km, east)
- LCT90 – Dissected Plateau Moorland (13.1km, south-west)
- LCT108 – Lowland Margin (13.2km south-east)
- LCT109 – Lowland Margin with Hills (13.4km, south)
- LCT102 – Upland Fringe with Prominent Hills (14.0km, east)

Visual Receptors

6.5.32 Visual receptors are *"the different groups of people who may experience views of the development"* (GLVIA, 3rd edition, para 6.3). The ZTV studies, baseline desk study and site visits have been used to identify those groups who may be significantly affected.

6.5.33 The different types of groups assessed within this report encompass local residents; people using key routes such as roads; cycle ways, people within accessible or recreational landscapes; people using Public Rights of Way and Core Paths; or people visiting key viewpoints. In dealing with areas of settlement, Public Rights of Way and local roads, receptors are grouped into areas where effects might be expected to be broadly similar, or areas which share particular factors in common.

6.5.34 30 representative viewpoints have been selected to assess the effects on visual receptors. In addition, specific viewpoints may be identified where there are key promoted viewpoints within the study area, or illustrative viewpoints to *"demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations"* (GLVIA, 3rd edition, para 6.19).

Visual Environment of the Site

6.5.35 As shown on **Figure 6.1**, the proposed development is located across a series of level topped hills of moorland. At present, the site is predominantly used for sport hunting with additional sheep and cattle grazing. Whalplaw Burn passes through the centre of the site in a steep sided, convex valley, before flowing into Cleekhimin Burn and onwards towards Leader Water. Soonhope Burn also passes through the west of site where it feeds into Cleekhimin Burn.

6.5.36 **Figure 6.4** shows the topography of the site, which ranges from around 200m AOD along the access route adjacent to Cleekhimin Burn at the southern end of the site, to 490m AOD at the northern end of the site near Hunt Law. In general, the hill tops are higher on the eastern side of the site, where they range from 414m AOD to 490m; in the west, hill tops range from 360m AOD to 399m AOD.

6.5.37 The landscape directly to the north, east and west of the site is that of the wider Lammermuir Hills and remains as a generally upland plateau landscape, with further level topped hills and steep sided valleys. Immediately to the south of the site the A68 and A697 pass along the broad flat valley floor which follows the route of Leader Water.

6.5.38 The village of Oxton lies on the lower valley slopes 3.6km west of the nearest wind turbine and is accessed via a number of minor roads off the A68. Lauder, the nearest town, is located 6.4km south of the nearest wind turbine on the A68. There are a number of smaller settlements and farmsteads close to the site, which are generally located to the south and west at the base of valleys or on the lower slopes (see **Figure 6.1** and **Technical Appendix 6.3**).

6.5.39 As shown on **Figure 6.8** there are multiple operational and consented wind farms within 35km of the site, particularly along the Moorfoot and Lammermuir Hills. The nearest operational wind farm is Fallago Rig, which lies adjacent to the north-eastern boundary of the site. Further operational and consented wind farms within the study area include: Pogbie I & II, Keith Hill, Dun Law I & II, Toddleburn, Longpark, Carcant, Bowbeat, Crystal Rig I, II & III, Aikengall I, II & IIa, Ferneylea, Hoprigshiels, Quixwood, Black Hill, Brockholes, Penmanshiel, Howpark and Drone Hill.

Visual Receptor Groups

6.5.40 Visual effects are assessed for groups of visual receptors within close proximity of each other and that are judged to experience similar visual effects arising from the proposed development. These are referred to as 'visual receptor groups' and include motorists on local roads, users of rights of way and open spaces, and local residents or visitors to settlements.

6.5.41 The following visual receptor groups have been identified within the extent of the ZVI and are taken forward for detailed assessment in Section 6.6. The extents of the Visual Receptor Groups are described in the following sections.

6.5.42 It is judged that for those visual receptors located outside of the ZVI there will be little to no visibility of the proposed development, and that effects will be Negligible at most. Visual receptors located outside of the ZVI are not taken forward for detailed assessment.

Table 6.9: Visual Receptor Groups taken forward for assessment

Visual Receptor Group Name	Location / Description
(1) Lammermuir Hills around the site (includes site).	Recreational users, residents and users of minor roads within the Lammermuir Hills north of the A68 and A697, east of Keith Hill, Pogbie I & II and Dun Law I & II Wind Farms, south of Blinkbonny Wood and west of Longformacus, Harecleugh Forest and Spottiswoode (see VPs 1,4,6,9 and 19 (**Figures 6.13, 6.16, 6.18, 6.21 and 6.31**)).
(2) Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw (2.0km, south-west).	Residents and recreational users along the A68 and A697 road corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw and the landscape up to approximately 1km on immediately on either side (see VPs 2,3,5,7,23 and 25 (**Figures 6.14, 6.15, 6.17, 6.19, 6.35 and 6.37**)). This group includes the settlements of Oxton, Lauder, Greenlaw, Earlston and other minor residential clusters. Users of the recreational landscapes and routes, such as Thirlestane Castle, and Core Paths are included where they pass through this receptor group.
(3) Recreational landscapes, minor roads and settlements west of the site (4.2km, west).	Recreational users, residents and users of minor roads in an area bound in the east and west by the A68 and A7, and in the north and south by Fala Moor and Melrose and Galashiels respectively. This group includes users of Lauder Common and local Core Paths (see VPs 8,20,22 and 24 (**Figures 6.20, 6.32, 6.34 and 6.36**)).
(4) Minor roads, residents and recreational landscapes east of the Lammermuir Hills (5.3km, east).	Users of the B6456 (see VP26 – **Figure 6.38**) and minor roads, residents and recreational users of the landscape between the A697 and Longformacus and east of Harecleugh Forest and Spottiswoode.
(5) Recreational landscapes, minor roads and settlements south of the site (8.1km, south).	Recreational users, residents and users of minor roads in an area bound by the A697 between High Cross and Greenlaw in the north and the A68 between St Leonards Hill and Ravenswood Roundabout in the west (see VP10 – **Figure 6.22**).
(6) Semi-rural recreational landscapes, minor roads and minor settlements north of the Lammermuir Hills (7.5km, north).	Recreational users, residents and users of minor roads in the area north of the Lammermuir Hills and Fala Moor, east of Gorebridge and Dalkeith, and south of east Linton, Haddington and Ormiston (see VPs 12 and 28 (**Figures 6.24 and 6.40**)). This area also includes Ormiston.
(7) Semi-rural recreational landscapes, minor roads and minor settlements north of the Moorfoot Hills (14.6km, west).	Recreational users, residents and users of roads in the area north of the Moorfoot Hills, west of Gorebridge, and south of Bonnyrigg and Penicuik.
(8) Landscape and settlements along the A1 road corridor from Tranent to West Barns (16.1km, north).	Residents and recreational users along the A1 and A199 road corridors from Tranent to West Barns and the landscape up to approximately 3km on immediately on either side in the west and 1.5km either side in the east (see VPs 11 and 27 (**Figures 6.23 and 6.39**)). This group includes the settlements of Tranent, Haddington, East Linton and other minor residential clusters. Users of the recreational landscapes and routes.
(9) Recreational landscapes, minor roads and settlements between East Linton and North Berwick (18.8km, north).	Recreational users, residents and users of roads in the area north of East Linton and South of Gullane, Dirleton and North Berwick (see VPs 15 and 30 (**Figures 6.27 and 6.42**)).
(10) Residents, users of local roads and landscapes in Edinburgh (24.1km, north-west).	Residents, users of local roads and landscape within Edinburgh, north of the A720. This group includes users of open landscapes and key viewpoints, such as Holyrood Park/Arthur's Seat (see VP17 – **Figure 6.29**), Blackford Hill and the Braid Hills.
(11) Landscape and settlements along, and to the east of, the A701 road corridor from the A720 to Carlops (26.6km, north-west).	Residents and recreational users along the A701 road corridor from the A720 to Carlops and the landscape up to approximately 2-4km east of the A701. This group includes the settlements of Loanhead, Penicuik and other minor residential clusters. Users of the recreational landscapes and routes are included, however the Pentland Hills are not included within this group.
(12) Pentland Hills from the A720 to Carlops (30.5km, north-west).	Recreational users, residents and users of minor roads within the Pentland Hills west of the A701 between the A720 and Carlops (see VP18 – **Figure 6.30**).
(13) Moorfoot Hills and the landscape to the south (11.1km, west).	Recreational users, residents and users of the minor roads to the west of the A7 and south of the Moorfoot Hill (inclusive) (see VP13 – **Figure 6.25**).
(14) Distant roads, residents and recreational landscapes south of Galashiels and Melrose (20.4km, south).	Users of landscape south of Galashiels and Melrose, including residents, users of minor roads and users of the recreational landscape - including long distance walking routes and the popular local viewpoint on Eildon Hill (see VP14 – **Figure 6.26**).

Roads and Rail

6.5.43 The following key road routes lie within the ZVI and are considered in detail in the Assessment of Effects at Section 6.6:

- A697 (3.0km, south) – which runs south-east from Oxton/the A68, passed the site entrance, towards Coldstream.
- A68 (3.3km, west) – which runs south-east from the edge of Edinburgh through Lauder towards Jedburgh and the Scottish Border.
- A6089 (8.4km, south) – which runs in a south-west alignment from Whiteburn to Kelso.
- A6105 (13.7km, south) – which runs on an east-west axis from Earlston to Berwick-upon-Tweed.
- A6093 (15.8km, north) – which connects the A68 south of Fordel to Haddington.
- A6137 (16.7km, north) – which passes north from Haddington to Aberlady on the coast.

- A1 (17.1km, north) – which runs east from central Edinburgh towards Dunbar, before continuing south down the coast.
- A199 (17.1km, north) – which follows a broadly the same route as the A1, connecting Edinburgh to Dunbar in the east.
- A6106 (19.5km, north-west) – which passes from Fordel to Portobello.
- A198 (19.7km, north) – which provides a loop along the coast from Tranent to Tyninghame.
- A702 (30.3km, north-west) – which routes from Edinburgh past the Pentland Hills to St John's Town of Dalry in the south-west.

6.5.44 There are a number of road routes within the ZVI which are excluded from the detailed assessment. These include:

- A7 (11.1km, west) – which runs broadly north to south from Edinburgh to Carlisle, via Galashiels. This route runs along the base of a river valley for the majority of its route within the ZVI; the ZTV (**Figure 6.6**) shows no theoretical visibility for the majority of the route. Where short sections of theoretical visibility are present, such as on the edge of Edinburgh, any visibility will be screened by local vegetation not captured by the ZTV.
- A72 (18.7km, south) – which is a fragmented route that runs broadly east to west from Hamilton to Galashiels. No theoretical visibility is shown along this route where it passes within the ZVI.
- A6124 (19.5km, north-west) – which runs from Musselburgh to Fordel on a broadly north-south axis. Visibility of the proposed development will be limited to glimpsed views above and behind vegetation at the junction of the A6124 and the A68. The majority of this route will not experience views of the proposed development.
- A6091 (20.2km, south) – this short section of road connects Galashiels to Newton St Boswells, via Melrose. No theoretical visibility is shown along this route.
- A6094 (22.8km, north-west) – which runs from Leadburn to Wallyford. Visibility along this route will be limited to a short section (less than 700m) of this 24.1km route between Rosewell and Bonnyrigg, where blades will be visible above the distant hills. Roadside vegetation often interrupts visibility along this section, reducing the potential visual effects.
- A707 (23.4km, south) – which winds north from Selkirk to near Clovenfords. No theoretical visibility is shown along this route where it passes within the ZVI.
- A768 (23.6km, north-west) – passes from Eskbank to Bilston along a parallel route to the Edinburgh City Bypass. The ZTV (**Figure 6.5**) shows that visibility is unlikely to occur along the majority of this route. Where theoretical visibility is shown on the ZTV, this is unlikely to occur due to screening provided by roadside vegetation and buildings.
- A720 (24.1km, north-west) – which forms the Edinburgh City Bypass and runs around the edge of Edinburgh from Gogar to Whitecraig. Due to the vegetated embankments on either side of this route, visibility will be substantially reduced from that shown on the ZTV (**Figure 6.6**). Actual visibility will be limited to two approximately 150m stretches of road east of Straiton and for approximately 850m east of Lothianburn. In all instances, the proposed development will be seen in the distance above and behind vegetation.
- A699 (24.4km, south) – which runs east to west from Selkirk to Kelso. Within the wider study area this route will experience very limited areas of theoretical visibility as shown on the ZTV (**Figure 6.6**). Visibility within the ZVI will be largely reduced from that shown on the ZTV, due to local highpoints and vegetation not captured by the ZTV. Actual visibility will be limited to infrequent, glimpsed views above and behind existing vegetation.
- A772 (24.8km, north-west) – this short route runs from Nether Liberton to Eskbank on the edge of Edinburgh. Roadside vegetation will predominantly screen all areas of theoretical visibility shown on the ZTV study (**Figure 6.6**).
- A6095 (26.6km, north-west) - which runs from Cameron Toll, Edinburgh to Musselburgh along an east-west axis. Visibility is unlikely to occur along the majority of this route. Recent development along this route, particularly between the A1 and Musselburgh, is not captured by the ZTV and will screen areas of theoretical visibility.
- A701 (28.3km, north-west) - is a fragmented route that runs from Dumfries in the south to Edinburgh in the north. Within the ZVI theoretical visibility along this route is limited to short stretches of road to the north of Penicuik. Actual visibility will be reduced to a short section of road between the B7003 roundabout and Bilston, and limited glimpsed views across large open car parks in New Pentland/Loanhead. For the rest of the route, local vegetation will screen the majority of theoretical views.
- A703 (28.7km, north-west) – is a fragmented route, a short section of which passes through the ZVI from Hillend, south of Edinburgh to the north of Penicuik. Vegetation not captured on the ZTV (**Figure 6.6**) will significantly reduce the amount of theoretical visibility shown on the ZTV to brief, distant views of the proposed development, particularly between Damhead Holdings and Pentland Grove.
- A766 (30.4km, north-west) – is a short route on the outskirts of Edinburgh that runs from Penicuik to Nine Mile Burn. Actual visibility will be reduced from that shown on the ZTV (**Figure 6.6**) to an approximately 200m stretch to the east of

Eight Mile Burn where the wind turbines will be seen as a minor element of the distant horizon. For the remainder of the route local vegetation and undulations in landform, not picked up on the ZTV, will screen the proposed development from view.

6.5.45 There are two main rail routes within the study area: the East Coast Main Line (ECML) railway line and local branch lines, which serve the outskirts of Edinburgh and provides a link to North Berwick off the ECML; and the Borders Railway which follows a similar route to the A7 and connects Edinburgh to the Tweedbank. At their closest point within the ZVI the ECML is located 18.9km north and the Borders Railway is located 11.5km west.

6.5.46 It was agreed at scoping stage that all rail routes within the study area will be scoped out of the Assessment of Effects due to a lack of theoretical visibility along the majority of the routes (see **Figure 6.6**). Should visibility occur from these rail routes, the proposed development will be seen behind and in the context of existing operational wind farms in brief, intermittent views.

Long Distance Routes

6.5.47 The following long distance walking route is located within the ZVI and is considered in the Assessment of Effects:

- Southern Upland Way (3.4km, south-east)

6.5.48 The following routes lies within the ZVI and are excluded from the detailed assessment:

- Borders Abbeys Way (19.3km, south) – this circular walking route links the historic border towns and villages within the Scottish Borders Area. The route passes through the south of the ZVI via Tweedbank, Melrose and Newton St Boswells. Theoretical visibility within the ZVI (see **Figure 6.6**) is limited to parts of the route between Abbotsford and Glenwhilt/Lindean Moor. Actual visibility is likely to occur from a single location near Shillinglaw Plantation and between Glenwhilt/Lindean Moor and Caulshiels Hill. In both instances the proposed development will appear as a minor element on distant hills.
- St Cuthbert's Way (20.3km, south) – this linear route links Melrose to Holy Island off the Northumberland Coast. Within the ZVI this route passes south from Melrose over the saddle of the Eildon Hills before turning north-east to Newton St Boswells. The ZTV (**Figure 6.6**) is largely accurate and visibility will occur across the Eildon Hills and along the minor road between Whitelee and Newton St Boswells. Due to the distance and the limited extent of visibility along this route it is not taken forward for detailed assessment.
- John Muir Way (19.4km, north) – this linear route crosses central Scotland from Helensburgh in the west to Dunbar in the east. Theoretical visibility within the ZVI (**Figure 6.6**) is largely accurate, with the exception of the area of tip visibility near Heckies Hole/Hedderwick Sands which is unlikely to occur. Visibility will largely consist of views of blades and some nacelles, with occasional limited tower visibility in more distant views. The proposed turbines will often be seen in the context of neighbouring cumulative schemes. Due to the distance and existing cumulative context this receptor is not taken forward for detailed assessment.

6.5.49 Scotland's tourism site 'Visit Scotland' also promotes a series of Scenic Driving Routes, one of which runs through the ZVI:

- Borders Historic Route (Scots Dyke to Edinburgh) (11.1km, west)

6.5.50 This route follows the A7, which as previously mentioned experiences no theoretical visibility for the majority of the route. Therefore, this route is not considered further as part of the detailed assessment.

National, Regional and Local Cycle Routes

6.5.51 **Figure 6.2** shows the National Cycle Routes (NCRs) present in the study area. The routes within the ZVI are as follows:

- NCR 196 (13.2km, north).
- NCR 76 (15.8km, north).
- NCR 1 (16.3, west).

6.5.52 It was agreed at scoping stage that all cycle routes within the study area will be scoped out of the Assessment of Effects due to a lack of theoretical visibility along the majority of the routes (see **Figure 6.6**).

6.5.53 In general, these routes will experience very little to no theoretical visibility, especially those to the south and west of the proposed development. The ZTV study (**Figure 6.6**) shows the greatest visibility will be along routes to the north of the proposed development, around the settlement of Haddington on NCR76 and NCR196. NCR76 runs along a former railway line in a sunken, tree lined cutting to the north of Haddington and visibility is unlikely to occur. Should users of NCR76 and NCR196 experience visibility within this area, the proposed development will be seen behind, and in the context of, the operational wind farms of Pogbie I & II, Dun Law I & II, Keith Hill and Fallago Rig.

6.5.54 For these reasons, the NCRs are not considered within the Assessment of Effects.

Specific Viewpoints

6.5.55 The following specific viewpoints identified on OS Maps are located within the ZVI and included as viewpoints within this assessment:

- Eildon Mid Hill (22.3km, south) (VP14 – **Figure 6.26**).
- North Berwick Law (25.9km, north) (VP15 - **Figure 6.25**).
- Arthur's Seat (31.0km, north-west) (VP17 – **Figure 6.29**).
- Allermuir Hill (32.5km, west) (VP18 – **Figure 6.40**).

6.5.56 The following specific viewpoints identified on OS Maps are excluded from the detailed assessment:

- Blackford Hill (31.7km, north-west) – views from this viewpoint will be similar in character to the nearby Arthur's Seat viewpoint where a viewpoint is included (VP17 – **Figure 6.29**) to be representative of both locations.
- Seven Hills Viewpoint, Buckstone Snab (31.8km, north-west) – this specific viewpoint is a 180 degree viewpoint facing north, away from the proposed development.

6.5.57 The surrounding Councils also identify key viewpoints within their renewable energy guidance, where these have been produced.

6.5.58 The Scottish Borders Council Supplementary Guidance: Renewable Energy (2018)[36] identifies 'Iconic Viewpoints' at the following locations within the ZVI:

- Southern Upland Way: Chester Hill, Lauder (7.9km, south) – Included as Viewpoint 24 (**Figure 6.36**).
- Southern Upland Way: Twin Law, Longformacus (6.2km, east) – Included as Viewpoint 6 (**Figure 6.18**).
- St Cuthbert's Way: Eildon Hills (22.3km, south) – included as Viewpoint 14 (**Figure 6.26**).
- A6105: Greenlaw Moor (17.5km, south-east) – this location lies on the edge of the ZVI, Viewpoint 26 (**Figure 6.38**) has been as an alternate location at a similar distance and direction.
- Hills: Black Hill Earlston (18.0km, south) – located to the south of the ZVI, VP14 (**Figure 6.26**) on the Eildon Hills provides a representative view from a similar distance and direction.
- Hills: Dirrington Little Law, Westruther (12.7km, east) – this hill lies between Viewpoints 6 and 26 (**Figures 6.18 and 6.38**), which are located in a similar direction, and provide representative views.

6.5.59 Midlothian Council's 'Landscape Capacity Study for Wind Turbine Development in Midlothian' (2007)[37] and lists the following key views within the ZVI which have the potential for visibility of the proposed development:

- Caerketton Hill, Pentlands (31.7km, north-west) – this hilltop lies adjacent to Allermuir Hill, an OS Specific Viewpoint included as Viewpoint 18 (**Figure 6.30**). VP18 will provide representative views for both locations.
- Scald Law, Pentlands (34.7km, east) – this viewpoint is located in the Pentland Hills. Viewpoint 18 (**Figure 6.30**) provides a representative viewpoint from the Pentland Hills.
- Arthur's Seat, Edinburgh (31.0km, north-west) – included as Viewpoint 17 (**Figure 6.29).**
- B7007: Broad Law corner & B7007 National Cycle Route (18.5km, west) – included as Viewpoint 13 (**Figure 6.25**).
- B6386: Soutra Aisle (8.7km, west) – included as Viewpoint 8 (**Figure 6.20**).

6.5.60 The remaining key views listed within Midlothian Council's Landscape Capacity Study for Wind Turbine Development in Midlothian (2007) are excluded on the basis that they lie outwith the area of theoretical visibility or ZVI, as shown on the ZTV Study (**Figure 6.6**), or that no visibility is likely to occur to localised screening, or that the focal point of the view is looking away from the site. A full list of these viewpoints is extracted in **Technical Appendix 6.2**.

6.5.61 East Lothian Council's 'Landscape Capacity Study for Wind Turbine Development in East Lothian' (2005) also identified key views within their council area. For East Lothian, the following key views are located within the ZVI and are likely to experience views of the proposed development:

- A1: Haddington (17.3km, north) – included Viewpoint 11 (**Figure 6.23**).
- A198: Whitekirk (23.4km, north) – representative viewpoints included nearby with Viewpoints 11, 15 and 30 (**Figures 6.23, 6.27 and 6.42**).
- B6368: NE Soutra Aisle (8.7km, west) – included as Viewpoint 8 (**Figure 6.20**).
- B6355: Lammermuirs (7.4km, north) – included as Viewpoints 21 and 9 (**Figures 6.33 and 6.21).**
- A6093: Pencaitland to Haddington at Samuelston (15.9km, north) – representative viewpoint included nearby with Viewpoints 11 (**Figure 6.23**).
- Minor Road to Longformacus (8.2km, east) – included as Viewpoint 9 (**Figure 6.21**).
- North Berwick Law (25.9km, north) - included as Viewpoint 15 (**Figure 6.27**).

[36] Scottish Borders Council. (July 2018). Scottish Borders Council Supplementary Guidance: Renewable Energy. Available at: https://www.scotborders.gov.uk/info/20051/plans_and_guidance/766/renewable_energy_supplementary_guidance

[37] Midlothian Council. (January 2007). Landscape Capacity Study for Wind Turbine Development in Midlothian. Available at: https://www.midlothian.gov.uk/downloads/download/432/landscape_capacity_study_for_wind_turbine_development

- Traprain Law (17.3km, north) - representative viewpoint included nearby at Viewpoint 11 (**Figure 6.23**).
- Garleton Hills (19.1km, north) - representative viewpoint included nearby at Viewpoint 11 (**Figure 6.23**).
- Arthur's Seat, Edinburgh (31.0km, north-west) – included as Viewpoint 17 (**Figure 6.29**).
- Meikle Says Law (3.5km, north) – this viewpoint is located directly behind Fallago Rig, which sits between the site and this summit. Representative views from nearby locations are included at Viewpoints 4 and 21 (**Figures 6.16 and 6.33**).
- Lammer Law (5.2km, north) – included as Viewpoint 4 (**Figure 6.16**).
- Southern Upland Way, near Longformacus (14.9km, east) – located adjacent to Black Hill Wind Farm (operational). Alternate locations have been selected along the Southern Upland Way at Viewpoints 6, 7, 19 and 24 (**Figures 6.18, 6.19, 6.31 and 6.36**).
- Southern Upland Way, Twin Law (6.2km, east) – included as VP6 (**Figure 6.18**).

6.5.62 The remaining key views listed within East Lothian Council's Landscape Capacity Study for Wind Turbine Development in East Lothian (2005) are excluded on the basis that they lie outwith the area of theoretical visibility or ZVI, as shown on the ZTV Study (**Figure 6.6**), or that no visibility is likely to occur to localised screening, or that the focal point of the view is looking away from the site. A full list of these viewpoints is extracted in **Technical Appendix 6.2**.

Landscape Designations and Value

Designated Landscapes

6.5.63 Landscape designations are shown on **Figure 6.2**.

6.5.64 It was agreed at the scoping stage that the Upper Tweeddale National Scenic Area (NSA), located at the edge of the study area, approximately 32.7km south-west of the closest proposed wind turbine will be scoped out of detailed assessment due to the lack of theoretical visibility within this part of the study area and the minimal areas of theoretical visibility in areas of the NSA beyond the study area. Adverse effects of this NSA are therefore unlikely to occur.

6.5.65 The following designated landscapes lie within the ZVI and are considered in detail in the Assessment of Effects:

National Scenic Areas (NSA)

- Eildon and Leaderfoot NSA (17.2km, south-west).

Regional Parks

- Pentland Hills Regional Park (30.5km, north-west).

Local Landscape Areas (LLAs)

6.5.66 Significant effects are unlikely to occur on LLAs beyond 15km of the proposed development, beyond this distance effects from existing operational wind farms and other features within the wider landscape will reduce the scale of effects arising from the proposed development. The following LLAs located within the ZVI and 15km of the proposed development are likely to experience views of the proposed development and are included within the assessment of effects:

- Scottish Borders LLA6 Lammermuir Hills (includes site)
- East Lothian LLA1 Lammermuir Moorland (2.3km, north)
- Midlothian LLA2 Fala Moor (9.5km, north-west)
- East Lothian LLA12 Bolton (12.4km, north)
- East Lothian LLA22 Samuelston (14.4km, north)

6.5.67 The following LLAs within 15km of the proposed development are excluded from the detailed assessment:

- East Lothian LLA3 Lammer Law, Hopes to Yester (3.1km, north) – the ZTV shows that visibility will be limited to a very small area of this ZTV on Lammer Law (Viewpoint 4 – **Figure 6.16**) with the majority of the LLA unlikely to experience views of the proposed development.
- East Lothian LLA2 Whiteadder (7.7km, north-east) – the majority of this LLA lies outwith the ZVI where effects will be Negligible. Visibility from this LLA within the ZVI is limited.
- East Lothian LLA9 Humbie Headwater (7.0km, north-west) – the ZTV indicates that visibility will be limited to blade tips only within a small area of this LLA.
- Midlothian LLA3 Fala Rolling Farmland & Policies (7.0km, north-west) – the ZTV indicates that visibility will be limited to blade tips only within a small area of this LLA.
- East Lothian LLA5 Danskine to Whitecastle (7.1km, north-east) – the ZTV indicates that visibility within this LLA will be limited to small areas of blade tips only. Fallago Rig is located between the proposed development and this LLA.
- East Lothian LLA20 Linplum (10.8km, north) – the ZTV indicates that visibility will be limited to blade tips only on the very edges of this LLA.
- East Lothian LLA8 Whittingehame to Deuchrie (11.9km, north-east) – the ZTV indicates that visibility within this LLA will be limited to small areas of blade tips only. Fallago Rig is located between the proposed development and this LLA.

- East Lothian LLA25 Morham (13.8km, north) – the ZTV indicates that visibility is unlikely to occur within this LLA.
- East Lothian LLa15 Traprain and Tyne Valley (14.5km, north) – most of this LLA is located beyond 15km of the proposed development where effects are likely to be Negligible. Within 15km of the proposed development visibility will be limited to blade tips only.
- Midlothian LLA6 Tyne Valley (14.5km, north-west) – most of this LLA is located beyond 15km of the proposed development where effects are likely to be Negligible.
- Midlothian LLA5 Gladhouse Reservoir & Moorfoot Scarp (14.7km, west) – most of this LLA is located beyond 15km of the proposed development where effects are likely to be Negligible.
- East Lothian LLA21 Clerkington and Tyne Walk (14.6km, north) most of this LLA is located beyond 15km of the proposed development where effects are likely to be Negligible.

Gardens and Designed Landscapes (GDLs)

6.5.68 The following GDLs located within the ZVI are likely to experience views of the proposed development and are included within the assessment of effects:

- Thirlestane Castle GDL (4.6km, south).
- Lennoxlove (Lethington) GDL (14.1km, north).
- Mellerstain GDL (16.0km, south).
- Oxenfoord Castle GDL (16.9km, north-west).
- The Drum GDL (26.0km, north-west).
- Palace of Holyroodhouse GDL (29.9km, north-west).

6.5.69 The following GDLs are excluded from the detailed assessment:

- Yester House GDL (7.4km, north) - the ZTV shows that visibility will be limited to blade tips across the northern and western edges of the area, away from the main areas of formal parkland.
- Carolside and Leadervale GDL (13.9km, south) - this GDL is set within areas of woodland, albeit it is noted that there are long open views up and down the valley. Visibility is likely to be limited to infrequent glimpsed views of blade tips, which will be largely screened by the woodland planting in and around the GDL.
- Winton House GDL (15.7km, north-west) - located to the east of Ormiston, this GDL is located on relatively flat agricultural land, and it is noted that views to the Lammermuir Hills are available from the Castle on clear days. It is also noted that the boundary woodland prevent views into the area. Detailed assessment suggests that visibility of the proposed development is unlikely to occur from this GDL, should the proposed development be seen, it will be in minor glimpsed views of a very small number of blade tips.
- Arniston GDL (19.8km, west) - this GDL is located to the west of Gorebridge. Visibility of the proposed development will be largely limited to very infrequent glimpsed views of distant blade tips.
- Tyninghame GDL (20.6km, north) - this GDL is located close to the estuary of the River Tyne and is noted to have long views south to the Lammermuir Hills. Visibility of the proposed development will be most prevalent from open areas in the north and south of the GDL where the proposed development will be seen as a very minor element on the distant Lammermuir Hills, seen largely behind existing operational wind farms.
- Abbotsford GDL (20.1km, south) - this GDL is located to the south of Galashiels. Visibility of the proposed development is unlikely to occur around the main house. Any glimpsed views of turbines from higher areas, particularly in the south of this GDL, will be distant.
- Balgone House GDL (23.3km, north) - the ZTV study (**Figure 6.6**) shows theoretical visibility of the proposed development from open fields within the GDL. In reality, woodland along the boundary of the GDL is likely to screen the majority of views. Should the proposed development be visible it will be seen as a very minor element on the distant Lammermuir Hills, set in the context of existing operational wind farms.
- Craigmillar Castle GDL (28.6km, north-west) - this GDL is a ruined castle and the Lammermuir Hills are noted as forming part of the setting. Visibility of the proposed development from within the GDL will be largely screened by vegetation, however glimpsed distant views may be possible. In these views the proposed development will be seen as a very minor element on the distant Lammermuir Hills, set in the context of existing operational wind farms.
- Duddingston House GDL (28.8km, north-west) - this GDL is located on the south-east side of Holyrood House and it is noted that good-views are present to the north-west, away from the site. The GDL includes the former house, a school and golf course, the latter of which provides a high level of tree cover which will screen the majority of views towards the proposed development.
- Prestonfield House (Priestfield) GDL (29.7km, north-west) - this GDL is located to the south of Holyrood Park with prominent views north towards Arthur's Seat. A golf course occupies the majority of the grounds within this GDL and the associated tree cover will screen the majority of views towards the proposed development.
- Penicuik GDL (30.0km, west) - this GDL is located to the south of Penicuik and visibility of the proposed development will be limited to small areas of the GDL

where the proposed turbines will be visible on the distant hills in the context of existing operational wind farms.

Local Landscape Value

6.5.70 Within the study area there are a number of features that contribute to the value of the landscape and townscape value.

6.5.71 Areas with national or international designations are deemed to be of National/International value. Within the ZVI this includes the Eildon and Leaderfoot NSA.

6.5.72 Whilst outwith the ZVI, Edinburgh's Old and New Towns are designated as a World Heritage Site and are of National/International Value. The wider city centre, located within the ZVI, is judged to be of Local/District value due to the high concentration of Conservation Areas and the City's status as the capital of Scotland. The outskirts of Edinburgh away from the historic centre are judged to be of Community value.

6.5.73 The area within the Pentland Hills Regional Park is judged to be of Local/District value. Areas identified as LLAs are also judged to be of Local/District value.

6.5.74 Beyond the areas stated above, the parts of the study area that lie within the ZVI are judged to be of Community value.

Future Baseline

6.5.75 In the absence of the proposed development, it is likely that the land will continue to be used as for farming and shooting, and the character of the site is therefore unlikely to undergo significant change.

6.5.76 There are some small areas of forestry within the local area which are likely to give rise to some changes in the surrounding landscape through the felling and replanting of trees.

6.6 Assessment of Potential Effects

Introduction

6.6.2 This section sets out the effects that the proposed development will have on both landscape and visual receptors. The effects are considered to be reversible as after a period of 50 years the proposed development will be removed, unless a further application to extend the life of the proposed development is applied for and granted, or an alternative application to 'repower' with new wind turbines and associated infrastructure is applied for and granted. Whilst 50 years is regarded as Permanent for the purposes of this assessment, the effects of the proposed development on the landscape are reversible.

Construction and Decommissioning Effects

6.6.3 Key potential impacts during the construction of the wind turbines and associated infrastructure will be short-term, with the construction programme anticipated to be 16 months in duration. Activities will include the movement of vehicles; construction of foundations, hardstands, access tracks, site entrances, the substation compound, the battery energy storage system (BESS) and the temporary construction compound; the opening of borrow pits; and the use of large cranes to erect the wind turbines.

6.6.4 The footprint of the wind turbines is relatively small, and the ground works associated with the foundations, hardstands, compounds and access tracks will be largely screened beyond 2.5km from the site. The main effects that will arise will be from cranes and the erection of wind turbines. These effects will be different in nature to those experienced once the proposed development is complete, but similar in their magnitude and significance.

6.6.5 Construction effects are assumed to be broadly the same as operational effects whilst cranes or standing wind turbines are on-site. Before and after the wind turbines are on-site effects from all other construction activities will be restricted to localised, very short term, temporary views of construction activity, which will not give rise to significant effects. Construction activities will not give rise to significant landscape character or visual effects over and above those of the operational site. The primary effects arising will be from the wind turbines and this assessment therefore focusses on the operational effects.

6.6.6 Decommissioning effects will be largely similar to those during construction, albeit in reverse. These effects are considered synonymous to the construction effects and are not discussed separately.

Operational Effects on Landscape Character

6.6.7 The proposed development is located across a series of level-topped hills of moorland, dissected by distinct steep-sided valleys. The site is typical of its primary host character type, LCT90 – Dissected Plateau Moorland, with much of the area managed for shooting. The site features a pattern of dispersed farm-building groups and the influence of multiple wind energy developments, in particular Fallago Rig, which is directly to the north-east of the site within this character type.

6.6.8 Large scale effects will be limited to areas of the site with limited intervisibility to existing operational wind farms, particularly in the valleys where the sense of being in located within a wind farm will be created. These areas will be limited due to the presence of multiple operational wind farms near the site.

6.6.9 Medium scale effects will be limited to the host landscape character type, within approximately 5km, in all directions except the north-east, where Fallago Rig Wind Farm will reduce the scale of effects. These effects will quickly reduce due to the presence of other operational wind farms, which will reduce the sense of the proposed development forming an entirely new feature within the landscape.

6.6.10 Medium-Small scale effects will occur to the north within the area of LCT266 which lies within 5km of the proposed development, to the south-east within LCT99 and to the south-west within LCT115. In these areas the proposed development will either feature as a large new wind farm that is partially screened behind existing wind development (LCT266) or as a partially screened/semi-distant new feature within areas of landscape that have less influence from existing wind development.

6.6.11 Small scale effects will occur in LCTs between approximately 5-18km east of the proposed development and in areas approximately 6km south-west near Viewpoint 20 (**Figure 6.32**). From these areas there will be open visibility of the proposed development viewed in the context of existing wind farms. From these areas the scale of the proposed wind turbines will exert a degree of change on the character areas. However the overall character will remain that of an area with minor influences from wind development.

6.6.12 Small scale effects will also occur within the northern end of LCT117, approximately 9km south of the proposed development, where there will be minor glimpsed views of the proposed development along the valley. Here the proposed development will form a minor, but new feature within the character area, exerting a small degree of change.

6.6.13 Beyond these areas the scale of effects will quickly diminish to Negligible, predominantly due to the presence of existing wind farms which already exert an influence on the character areas and will create a sense of separation between the character area and the proposed development.

6.6.14 Taking the above considerations into account, effects on the following character types will be Negligible and effects on these areas are not considered further:

- LCT267 – Plateau Grassland – Lothians (5.2km, north-west)
- LCT270 – Lowland River Valleys – Lothians (7.4km, north)
- LCT275 – Lowland Farmed Plains – Lothians (8.3km, north)
- LCT114 – Pastoral Upland Valley (9.4km, south-west)
- LCT90 – Dissected Plateau Moorland (13.1km, south-west)
- LCT109 – Lowland Margin with Hills (13.4km, south)
- LCT102 – Upland Fringe with Prominent Hills (14.0km, east)

6.6.15 Descriptions for each of the assessed LCTs are briefly summarised below, along with an assessment of effects which is informed by site-based observations.

NatureScot Landscape Character Assessment (2019)

LCT90 – Dissected Plateau Moorland (includes site)

6.6.16 As illustrated on **Figure 6.3** this LCT encompasses the main body of the site; a small section of the access track and the separate transfer station are located in LCT115 to the south-west. The site is located within the western extent of LCT90 which extends to the east, following the Scottish Borders/East Lothian boundary in an area of the Lammermuir Hills. Fallago Rig, Crystal Rig I, II and IV are located within this LCT and there are neighbouring wind farms to the east on west of this LCT which influence the character of the area. Viewpoints 1, 6 and 9 (**Figure 6.13, 6.18 and 6.21**) lie within this LCT. The key characteristics are defined within NatureScot's 2019 Landscape Character Assessment as:

- "Plateau landform consisting of a series of level-topped hills and ridges.
- Strong topographic identity and overall grandeur of scale.
- Individual hill masses separated by steep sided valley features of differing scales.
- Semi-natural peatland, heather moorland and grassland communities dominant, with a high degree of perceived naturalness of vegetation cover.
- Very low settlement density with isolated, dispersed pattern.
- Scattered prehistoric settlement and burial mounds above water courses.
- Sense of wildness created by wide horizons and long distance, unobstructed views."

6.6.17 The character assessment notes that "There are wind energy developments with multiple turbines both within and surrounding these areas, with Fallago Rig wind farm forming a point feature on the central Lammermuir Plateau." Further stating that "Views, however, from within the hills are punctuated by the presence of windfarms, with clusters of development at Crystal Rig in the east, Fallago Rig in the centre and Dun Law to the west, forming notable features in many opens views across the hills. By contrast within the valleys, views are restricted by topography or by woodland features, and the scale is more intimate."

6.6.18 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016)[38] identifies this LCT as having a Medium landscape sensitivity. The study notes the area as having Low landscape capacity for turbine over 120m tall, stating that *"Extensive large scale wind energy developments are located within and adjacent to the LCA: the northern part of the LCA on the boundary with East Lothian is reaching capacity and becoming a Landscape with Wind Turbines with areas of Wind Turbine Landscape around Crystal Rig/Aikengall and Fallago Rig."* Further noting that *"There is capacity for limited additional development of larger turbines provided this is associated with existing windfarms."* In terms of this assessment, this is considered to equate to Medium susceptibility to the type of development proposed. This LCT is predominantly covered by the Lammermuir Hills LLA and is assessed to be of Local value. The LCT is judged to be of Medium sensitivity.

6.6.19 As set out above, effects on this character area will be Large scale within certain areas of the site; Medium scale within approximately 5km of the proposed development, in all directions except the north-east, where Fallago Rig Wind Farm will reduce the scale of effects; Small by Viewpoint 9 (**Figure 6.21**); and Negligible by Crystal Rig I, II and IV.

6.6.20 At worst, Large scale effects will occur across a Limited extent of this LCT (within the site) and Medium scale effects will occur across a Wide extent of this LCT (wider LCT). Effects on this Medium sensitivity LCT will be of Medium magnitude, Moderate significance (not significant) and Adverse within the site, and High-Medium magnitude, Moderate significance (not significant) and Adverse within the wider LCT.

LCT115 – Upland Valley with Mixed Farmland (includes site)

6.6.21 As shown on **Figure 6.3** this LCT encompasses the broad valley floor between Oxton and Lauder. A short section of the site access road and the separate transfer section lie within this LCT, with the majority of the site and proposed development in the LCT to the east. Viewpoints 2, 4, 7 and 24 (**Figures 6.14, 6.16, 6.19 and 6.36**) lie within this LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Broad flat valley floor with distinct floodplain and meandering river channel.*
- *Evenly sloping valley sides.*
- *Rich red soils derived from Old Red Sandstone parent materials.*
- *Land cover dominated by arable and improved pasture land, with medium to large sized fields.*
- *Valley bottom and lower valley sides well-treed, with hedgerows, hedgerow trees, small woodlands and coniferous plantations all locally prominent.*
- *Significant designed landscapes in each valley.*
- *Unity of vernacular architecture utilising local red sandstone and whinstone."*

6.6.22 The assessment notes that "Wind farm development, located on the adjoining upland character types, is strongly evident at the upper reaches of both the Whiteadder and Leader valleys, forming visually prominent point features from many areas within the valleys."

6.6.23 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) classifies the landscape sensitivity for this LCT as Medium/High notes that the siting of new turbines should take into account the settings of Oxton and Lauder. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. A part of this LCT lies within the Lammermuir Hills LLA, however not enough to increase the value beyond Community level. The LCT is judged to be of Medium sensitivity.

6.6.24 Medium-Small scale effects will occur across a Wide extent of this Medium sensitivity LCT. Ditcher Law, Dun Law I & II and Toddleburn are all located close to the boundary of this LCT and the proposed development will form another neighbouring wind farm. Effects will be of Medium magnitude, Moderate significance (not significant) and Adverse.

[38] Sottish Borders Council. (2016). Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study. Available at: https://www.scotborders.gov.uk/downloads/file/2758/ironside_farrar_-_wind_energy_landscape_capacity_study_part_1

LCT266 – Plateau Moorland – Lothians (2.2km, north)

6.6.25 As shown on **Figure 6.3** LCT266 is a linear LCT that encompasses the northern extent of the Lammermuir Plateau within East Lothian. Aikengall I, II & IIa and Crystal Rig II & III lie within the eastern end of this LCT. Viewpoints 4 and 21 (**Figures 6.16 and 6.33**) lie within this LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Modest hills and moors forming broad plateaux with rounded.*
- *Smooth convex hill slopes dissected by a complex tracery of valley landforms which vary in scale and appearance, from minor burn narrow incised gullies to occasional wider flat-bottomed valleys of larger rivers.*
- *Medium to large scale landscape.*
- *Open upland character with sparse tree cover.*
- *Expanses of heather moorland, with rough grasses on upper slopes, with poor rough grassland and occasional improved pasture on lower slopes.*
- *Generally unenclosed, with some post and wire fences along roads and access tracks, and occasional stone sheep stells and walls around farmsteads.*
- *Sparsely inhabited, with scattered farmsteads in valleys.*
- *Reservoirs creating local focal points.*
- *Historic human influences evident in the many enclosures, cairns, hill forts and stone circles.*
- *Steep north-facing scarps with spectacular panoramic views overlooking the coastal plain of Lothian to the north with views across the Firth of Forth.*
- *Forms the skyline when viewed from the lower land to the north."*

6.6.26 The LCT assessment notes the presence of the wind farms within this LCT and those in neighbouring LCTs. It notes that "Many of the wind farms are seen from within the Plateau Moorland – Lothians Landscape Character Type but also from the Lowlands where they are often seen in small areas, spaced at intervals on the extensive skyline formed by the hills, with the majority of the skyline retained as an unbroken element. They are less visible around the Moorfoot Hills in Midlothian." The assessment notes the panoramic views to the north and notes that wind farms detract from the sense of wild naturalness that can be found within this character type.

6.6.27 East Lothian's Landscape Capacity Study for Wind Turbine Development in East Lothian dates from 2005 and utilises slightly different landscape character areas to those found within the updated 2019 NatureScot Assessment, albeit these are similar enough to infer reasonable judgements on landscape sensitivity. The 2005 study describes East Lothian's Central Lammermuir Plateau and East Lammermuir Plateau Landscape Character Areas which occupy the same extents as LCT266 within East Lothian. Within the study the Central Lammermuir Plateau, which occupies the western end of LCT266 is described as High sensitivity, whilst the East Lammermuir Plateau is listed as Medium-High sensitivity. This landscape capacity study was produced in 2005 and as such, fails to capture the changes in landscape character from that date, the presence of more operational wind farms, in particular Fallago Rig, Crystal Rig II-IV and Aikengall I, II & IIa are not captured within the study. In addition, given its age, the study only gives consideration to wind turbines up to a height of 120m and doesn't consider wind turbines of the size of commercially available wind turbines today.

6.6.28 Given the changes that have occurred since the 2005 study, it is considered that the susceptibility of this LCT to the type of development proposed is High-medium. This LCT is predominantly covered by a number of LLAs and is assessed to be of Local value. The LCT is judged to be of High-medium sensitivity.

6.6.29 Medium-Small scale effects will occur within 5km directly north of the proposed development, where the proposed development will increase the influence of wind farms on this LCT. Effects within the north-east of this LCT will be Negligible as the operational Fallago Rig Wind Farm will be located between the proposed development and this area of the LCT and effects from the proposed development will be very minor. Overall, Medium-Small scale effects will occur across a Limited extent of this Medium sensitivity LCT, giving rise to effects that will be of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

LCT91 – Plateau Grassland – Borders (2.3km, west)

6.6.30 As shown on **Figure 6.3** LCT91, is loosely 'T-shaped' and runs south from the northern border of the Scottish Borders to Whitelee. The area forms an upland plateau landscape of smooth gently rolling hills covered by coarse acid grassland. Viewpoints 5, 8, 20 and 22 (**Figures 6.17, 6.20, 6.32 and 6.34**) lie within this LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Large scale, rolling plateau topography with gentle slopes and smooth relief.*

- *Vegetation cover dominated by coarse grassland with localised patches of heather moorland, rush pasture and scattered small coniferous plantations and shelterbelts.*
- *Low density settlement with widely dispersed farm buildings.*
- *Wind farm development in the northern and central parts of the Landscape Character Type.*
- *Remote, isolated quality.*
- *Open, panoramic views."*

6.6.31 The assessment notes that "Multiple wind farm developments occur within the character type, with Dun Law, Pogbie, and Toddleburn in north and Long Park lying in the central part."

6.6.32 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium landscape sensitivity. In terms of this assessment, this is considered to equate to Medium susceptibility to the type of development proposed. A part of this LCT lies within the Lammermuir Hills LLA, however not enough to increase the value beyond Community level. The LCT is judged to be of Medium-low sensitivity.

6.6.33 Effects on this LCT will be limited due to the widespread presence of existing wind farms within this LCT and the wider landscape. Small scale effects will occur in areas directly to the south-west of the proposed development, near Viewpoint 20 (**Figure 6.32**), where the proposed development will form a new feature in views from this LCT but will feel separated from LCT 91 by the intervening valley. Within the wider LCT effects will be Negligible due to the presence of existing wind farms within this LCT. Overall, Small scale effects will occur across a Localised extent of this Medium-low sensitivity LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT99 – Rolling Farmland – Borders (3.8km, south)

6.6.34 As shown on **Figure 6.3** this LCT99 is located to the south of the site and encompasses an area of undulating upland fringe landscape of large-scale fields, with mixed arable and pastoral land use. Viewpoints 19 and 25 (**Figures 6.31** and **6.37**) are located within this character type. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Undulating relief, becoming more pronounced at higher elevations.*
- *Distinctive areas of flat or constant gentle gradients, giving wide horizons and skyscapes.*
- *Large-scale strong geometric field pattern, enclosed by hedgerows, with scattered coniferous woods.*
- *Mix of arable, ley pasture and permanent grazing land.*
- *Moderately densely settled, with frequent farmsteads and small villages.*
- *Well kempt, prosperous appearance."*

6.6.35 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists the landscape sensitivity as Medium-High and notes the presence of small (<100m) individual or paired turbines within this character type. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. A very small area of this LCT lies within the Lammermuir Hills LLA, however not enough to increase the value beyond Community level. The LCT is judged to be of Medium sensitivity.

6.6.36 Medium-Small scale effects will occur across a Wide extent of this Medium sensitivity LCT. Effects will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

LCT117 – Pastoral Upland Fringe Valley (7.0km, south)

6.6.37 Figure 6.3 identifies the extent of this LCT, which follows the valley of the Leader Water from Lauder to Drygrange Mains. Viewpoint 23 (**Figure 6.35**) is located at the northern end of the valley. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Medium scale pastoral valley with flat floor enclosed by upland fringe pastures, often with rough grassland and moorland covered hills above.*
- *Smooth large scale landform modified in places by bluffs and moraine on valley floor, scree slopes or rock outcrops on valley sides.*
- *Narrow, often wooded tributary side valleys.*
- *Broadleaf woodlands and scrub on bluff slopes and scattered trees along river banks, occasional coniferous plantations and shelter belts on valley sides.*
- *Valley floor pastures enclosed by drystone dykes with occasional hedgerows, interspersed with occasional patches of scrub, coarse grass and rushes.*
- *Scattered villages, farmsteads and mansion houses with policy woodlands."*

6.6.38 The assessment notes that "The Lower Leader Water valley has the distinctive twin peaks of Black Hill and White Hill locally prominent in the lower stretches. It has an intimate, enclosed character created by landform, with widespread broadleaf and coniferous woodlands. The A68 trunk road is prominent along the valley floor, and there are views of Leaderfoot viaduct and the adjoining road bridge from minor roads."

6.6.39 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium-High landscape sensitivity. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. This LCT lies outside the designations identified in Section 6.5 and is assessed to be of Community value. The LCT is judged to be of Medium sensitivity.

6.6.40 Where the proposed development is visible it will be seen as a minor glimpsed element at the end of the valley. This minimal, intermittent visibility will be a minor alteration to the intimate, enclosed character of the LCT. Small scale effects will occur across a Localised extent of this LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT103 – Undulating Upland Fringe (7.6km, south)

6.6.41 As shown on Figure 6.3 this LCT is located to the south of the site and encompasses the transitional zone between the valley landscapes and the upland plateaux. Viewpoint 24 (**Figure 6.36**) is located just outwith this character type but provides representative views from the northern end of the LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Large scale, moderately to steeply sloping and undulating landform incised in places by steep gullies and narrow valleys.*
- *Unity of land cover characterised by improved pastures, with prominent field pattern delineated by a well maintained network of drystone dykes, and scattered small to medium sized coniferous plantations.*
- *Medium density settlement with small villages and farmsteads sited typically in sheltered valleys and on lower slopes.*
- *A simple, uniform landscape of smooth flowing curves, open in character with distant views over adjoining valley types and the Lammermuir and Moorfoot hills.*
- *Boundaries clearly defined by major river valleys."*

6.6.42 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium-High landscape sensitivity, noting the presence of Longpark Wind Farm in the LCT to the west and the presence of multiple small (<50m) turbines within the area. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. This LCT lies outside the designations identified in Section 6.5 and is assessed to be of Community value. The LCT is judged to be of Medium sensitivity.

6.6.43 The proposed development will give rise to Small scale effects in the northern end of this LCT. These effects will reduce to Negligible by the middle of the LCT due to the distance from the proposed development and the proximity to Longpark Wind Farm. Small scale effects will occur across a Localised extent of this LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT115 – Upland Valley with Mixed Farmland (8.3km, east)

6.6.44 As shown on Figure 6.3 this LCT is located to the east of the site and forms a broad upland vale characterised by its geology and soils. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Broad flat valley floor with distinct floodplain and meandering river channel.*
- *Evenly sloping valley sides.*
- *Rich red soils derived from Old Red Sandstone parent materials.*
- *Land cover dominated by arable and improved pasture land, with medium to large sized fields.*
- *Valley bottom and lower valley sides well-treed, with hedgerows, hedgerow trees, small woodlands and coniferous plantations all locally prominent.*
- *Significant designed landscapes in each valley.*
- *Unity of vernacular architecture utilising local red sandstone and whinstone."*

6.6.45 The assessment notes that "Wind farm development, located on the adjoining upland character types, is strongly evident at the upper reaches of both the Whiteadder and Leader valleys, forming visually prominent point features from many areas within the valleys."

6.6.46 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium-High landscape sensitivity, noting the visibility of the neighbouring Crystal Rig and Black Hill Wind Farms from this LCT. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. This LCT is predominantly covered by the Lammermuir Hills LLA and is assessed to be of Local value. The LCT is judged to be of High-medium sensitivity.

6.6.47 Visibility of the proposed development within the LCT will be limited and, in most cases, it will be seen behind and in the context of the existing operational Fallago Wind Farm. The proposed development will form a minor alteration to the character of the area, slightly increasing the visual presence of wind development within the LCT, but not substantially altering the character. Small scale effects will occur across a localised extent of this LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT105 – Upland Fringe Moorland with Hills (9.8km, east)

6.6.48 As shown on **Figure 6.3** this LCT covers an unusual landscape of exposed flat to gently sloping upland fringe moorland, punctuated by prominent dome shaped hills. Viewpoint 26 (**Figure 6.38**) is located on the western edge of this LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Landform consists of a uniform, flat to gently sloping platform interrupted by two prominent dome-shaped hills, and a distinctive meandering glacial moraine.*
- *Open land cover with few trees dominated by rough grassland with rushes and bog vegetation on lower ground and heather moorland on upper slopes.*
- *Very widely dispersed isolated farm buildings and few field boundaries.*
- *A dramatic, large scale landscape with open views.*
- *Unique within the region, with well-defined visual identity."*

6.6.49 The assessment notes that "Views from low-lying areas are open and panoramic but typically confined within the unit itself. This, together with the sparseness of settlement and field boundaries, enhances the sense of isolation and wildness of the landscape. Views from the Dirrington Laws are distant and expansive towards the Merse lowlands and the Southern Uplands in the south, and the Lammermuir Hills in the north."

6.6.50 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium landscape sensitivity, noting the presence of Black Hill Wind Farm to the north-east. In terms of this assessment, this is considered to equate to Medium susceptibility to the type of development proposed. Part of this LCT lies within the Lammermuir Hills LLA, however not enough to increase the value beyond Community level. The LCT is judged to be of Medium-low sensitivity.

6.6.51 The proposed development will form a minor element on the semi-distant Lammermuir Hills, where it will be seen in the context of the existing Fallago Rig Wind Farm. The proposed development will not alter the openness of the views, however it will create a minor reduction in the sense of isolation and wildness. Small scale effects will occur across a Wide extent of this LCT, giving rise to effects that will be of Medium-low magnitude, Moderate-slight significance (not significant) and Adverse.

LCT108 – Lowland Margin (13.2km south-east)

6.6.52 As shown on **Figure 6.3** this LCT is located to the south-east of the site and forms an open agricultural landscape characterised by an even, very gently sloping landform with a distinctive regular grid of drystone dykes. Viewpoint 10 (**Figure 6.22**) is located within the centre of the LCT. The key characteristics are defined in NatureScot's 2019 Landscape Character Assessment as:

- *"Even, very gently sloping landform with extensive flat low-lying areas.*
- *Large arable and pasture fields divided by drystone dykes.*
- *Widely dispersed woodlands.*
- *Medium density settlement of scattered stone built farmsteads and villages.*
- *A large scale, regular, uniform landscape with distant and panoramic views to uplands, punctuated by volcanic hills in the middle distance outwith the unit."*

6.6.53 Scottish Borders Council's Wind Energy Consultancy: Update of Wind Energy Landscape Capacity and Cumulative Impact Study (2016) lists this LCT as having Medium-High landscape sensitivity, noting the openness of this LCT, the limited vertical scale and the limited number of small turbines (<50m) within the area. In terms of this assessment, this is considered to equate to High-medium susceptibility to the type of development proposed. This LCT lies outside the designations identified in Section 6.5 and is assessed to be of Community value. The LCT is judged to be of Medium sensitivity.

6.6.54 The proposed development will be perceived as a minor element on the distant hills, due to the visual separation the scale of the turbines will be in keeping with the heights of local vegetation and will not add to the vertical scale of the landscape. Small scale effects will occur across an Intermediate extent of this LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

Operational Visual Effects

Visual Aids

6.6.55 Wirelines and photomontage visualisations have been used to aid the assessment. These were generated from a 3-dimensional model of the proposed wind turbines, site and surrounding topography. Key landmarks and compass bearings were used to match the modelled views to the photographs.

6.6.56 The proposed borrow pits are not modelled due to their temporary nature. Other elements of low-level infrastructure, such as the substation compound, BESS and access tracks are not modelled due to the general lack of visibility of these features when compared to the proposed wind turbines.

6.6.57 The photographs, wirelines and photomontages are shown on **Figures 6.13 - 6.42** supporting this LVIA. A detailed description of the methods by which the wirelines and photomontages are prepared is included in **Technical Appendix 6.1**. The visualisations are numbered according to the viewpoint that they show (e.g. VP_01 for Viewpoint 1), with a suffix indicating the type of visualisation (BP – baseline panorama and wireline (including cumulative schemes), WL – wireline, PM – photomontage, NP – night photomontage. The range of visualisations prepared for each viewpoint has been agreed with key stakeholders and is recorded in Table 6.10 using these suffixes.

6.6.58 The viewpoint description, description of effects and scale of effect for each viewpoint (refer to **Figures 6.5 and 6.6** for locations) is set out within **Technical Appendix 6.4.** The scale of effect for each viewpoint is summarised in Table 6.10:

Table 6.10: Representative Viewpoints

Viewpoint Reference & Location	Visualisation types	Distance, Direction	Scale of Effect	Positive / Neutral / Adverse
VP1: Lylestone Hill, Core Path 16	BP, WL, PM	1.4km, south	Large	Adverse
VP2: Station Road, Oxton	BP, WL, PM, NP	4.0km, west	Medium-small	Adverse
VP3: A68 North of Lauder	BP, WL, PM, NP	5.4km, south	Medium-small	Adverse
VP4: Lammer Law	BP, WL, PM	5.2km, north	Medium	Adverse
VP5: A68 South of Dun Law Wind Farm	BP, WL, PM, NP	5.9km, west	Small	Adverse
VP6: Southern Upland Way, Twin Law Cairns	BP, WL, PM	6.2km, east	Medium	Adverse
VP7: Thirlestane Castle GDL, Southern Upland Way	BP, WL, PM, NP	7.2km, south	Medium-Small	Adverse
VP8: B368 North-East Soutra Aisle	BP, WL, PM	8.7km, west	Small	Neutral
VP9: Minor Road to Longformacus	BP, WL, PM, NP	9.3km, east	Small	Adverse
VP10: A6105 East of Gordon	BP, WL	15.7km, south-west	Medium-Small	Adverse
VP11: A1 North-East of Haddington	BP, WL, PM, NP	17.2km, north	Small-Negligible	Adverse
VP12: Minor Road South of Gorebridge	BP, WL	18.3km, west	Small-Negligible	Neutral
VP13: B7007 & NCN1 near Broad Law	BP, WL, PM	18.7km, west	Small-Negligible	Neutral
VP14: Eildon Hills	BP, WL	22.3km, south	Small-Negligible	Neutral
VP15: North Berwick Law	BP, WL	25.9km, north	Small-Negligible	Neutral
VP16: A6112/B6470 Junction East of Swinton	BP, WL	29.6km, east	Negligible	Neutral
VP17: Arthur's Seat	BP, WL, PM	31.0km, north-west	Negligible	Neutral
VP18: Allermuir Hills, Pentland Hills Regional Park	BP, WL	32.5km, west	Negligible	Neutral
VP19: Southern Upland Way, Edgarhope Wood	BP, WL, PM	5.6km, south	Medium	Adverse
VP20: Corepaths west of Oxton	BP, WL, PM	6.0km, south-west	Medium	Adverse
VP21: Redstone Rig	BP, WL	7.0km, north	Negligible	Neutral
VP22: Lauder Common	BP, WL, PM	10.0km, south-west	Medium	Adverse
VP23: A68 near The Roan	BP, WL, PM	9.6km, south	Small-Negligible	Adverse
VP24: Southern Upland Way, Chester Hill	BP, WL, PM	7.9km, south	Medium	Adverse
VP25: B6456 near A697 Junction	BP, WL, PM	8.8km, south	Medium	Adverse
VP26: B6456 near Camp Moor	BP, WL, PM	16.5km, east	Small	Adverse
VP27: Fa'Side Hill Viewpoint	WL	21.6km, north-west	Small-Negligible	Adverse
VP28: B6369 north of Gifford	WL	11.4km, north	Negligible	Adverse
VP29: Elie Harbour	WL	41.9km, north	Negligible	Neutral
VP30: A198 at Dirleton	BP, WL, PM, NP	25.8km, north	Negligible	Neutral

6.6.59

6.6.60 Each of the viewpoints is a 'sample' of the potential effects, representing a wide range of receptors – including not only those actually at the viewpoint, but also those nearby, at a similar distance and/or direction.

6.6.61 From these viewpoints it can be seen that:

- The extent of **Large** scale effects, where the proposed development will form a total or major alteration to key elements, features, qualities and characteristics of the view such that the baseline will be fundamentally changed, will generally be limited to locations within or close proximity to the site (generally <2.5-4km) where there are open views looking directly at the site and there is little intervening vegetation or topography to reduce the scale of effects.
- The extent of **Medium** or **Medium-Small** scale effects is generally limited to areas in close to proximity to the site where users have an elevated or semi-open view that is largely unobscured by existing wind farms, but has a sense of separation created by the landform or local vegetation. This is approximately 5km to the north, to the edge of the Lammermuirs; 0.6km to the north-east to the edge of Fallago Rig Wind Farm; approximately 10km to the east, south-east, south and south-west; and approximately 5-8km to the west and north-west to the edge of the Toddleburn, Dun Law I & II, Pogbie I & II and Keith Hill Wind Farms.
- Beyond these locations the scale of effects will reduce to **Small** or **Small-Negligible** due to the wider presence of other wind farms within the view and/or a greater sense of screening and separation by the landform and vegetation. **Small** scale effects will persist in some longer views where there is a lack of screening between the viewer and the proposed development.
- Where the proposed development will either be screened from visual receptors by changes in landform or vegetation within the landscape, or the proposed development will form a very limited change in views, the scale of effect will be **Negligible**.

Visual Receptor Groups

6.6.62 This assessment focuses primarily on effects on groups of visual receptors, incorporating effects on views from public spaces and streets within settlements (or around the houses in areas with isolated dwellings), and the routes and accessible landscape in the surrounding countryside. Residents and visitors within these communities are assessed to be of High-Medium sensitivity.

6.6.63 The assessment of effects on settlements focuses on the visual amenity of public spaces, though views from groups of dwellings will also be noted in the descriptions where appropriate. Effects on private residential amenity are a separate matter, and only require assessment when a development is likely to have effects over the Residential Visual Amenity Threshold referred to in LI TGN 02/2019. These effects are included within the RVAA in Technical Appendix 6.3.

6.6.64 This section should be read in conjunction with the viewpoint descriptions in **Technical Appendix 6.4** which provide a detailed description of views across the study area.

Lammermuir Hills around the site (includes site)

6.6.65 This visual receptor group encompasses the Lammermuir Hills within and around the site north of the A68 and A697, east of Keith Hill, Pogbie I & II and Dun Law I & II Wind Farms, south of Blinkbonny Wood and west of Longformacus, Harecleugh Forest. Receptors within this group are predominantly those using the hills for recreation and this includes users of the Southern Upland Way, Core Paths and other Public Rights of Way (PRoW) (see **Figure 6.1**). A small number of individual settlements and farmsteads lie within this receptor group; these are serviced by minor roads. Viewpoints 1, 4, 6, 9 and 19 (**Figures 6.13, 6.16, 6.18, 6.21 and 6.31**) lie within this area.

6.6.66 As set out in **Table 6.10** and within the viewpoint descriptions in **Technical Appendix 6.4,** effects will be of Large scale within, or in close proximity to the site, including along Core Path 16 (see VP1) that passes directly through the site. (Note that as part of the Outline Outdoor Access Management Plan (refer to Technical Appendix 3.4) it is proposed that Core Path 16 could be realigned along the route of the new access track within the site. This will form a minor change and the route will broadly follow the same alignment.) These effects will reduce to Medium scale outwith the immediate environs of the site (see VPs 4, 6 and 19) and Medium-Small scale in the north west along the minor road between Gifford and Longformacus (see VP9); along this road the effects are reduced by the visual influence of Fallago Rig Wind Farm, which lies between the viewer and the proposed development.

6.6.67 High to Medium effects will occur across a Wide extent of this High-medium sensitivity receptor group and will be of **High-Medium magnitude, Major significance (significant) and Adverse**.

Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw (2.0km, south-west)

6.6.68 This receptor group follows the road corridors of the A68 and A697 from Soutra Hill to Ravenswood Roundabout (A68) and the minor settlement of Greenlaw (A697). This group includes the settlements of Oxton, Lauder, Greenlaw, Earlston and other minor residential clusters. Users of the recreational landscapes and routes, such as Thirlestane Castle and Core Paths, are included where they pass through this receptor group. Viewpoints 2, 3, 5, 7, 23 and 25 (**Figures 6.14, 6.15, 6.19, 6.35 and 6.37**) lie within this receptor group.

6.6.69 Towards Soutra Hill, this group is located at a higher elevation and users will experience Small scale effects due to the sense of separation and the setting within existing wind farms (see VP5). Closer to the site, this receptor group is set within the wide valley floor and effects will increase to Medium-small scale where the proposed development will be more openly visible above the valley sides but remain partially screened (see VPs 2 and 3). To the south of Lauder along the A68, and east of Lauder along the A697, the scale of effects quickly reduces (see VP23) to Small-Negligible and Negligible where the local landform and vegetation along the road corridors serve to screen the majority of views.

6.6.70 There are occasional open views within the wider landscape where the proposed development will be seen above local landform and vegetation, such as at Viewpoint 25 (**Figure 6.37**), where Medium scale effects have been identified.

6.6.71 On balance, Medium scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor group. These effects will be of Medium magnitude, Moderate significance (not significant) and Adverse.

Recreational landscapes, minor roads and settlements west of the site (4.2km, west)

6.6.72 This receptor group includes the area between the A68 and A7, north of Galashiels and Melrose, and south of Fala Moor. The group includes Fala Moor, Lauder Common and local Core Paths. Viewpoints 8, 20, 22 and 24 (**Figures 6.21, 6.32, 6.34 and 6.36**) lie within the receptor group.

6.6.73 The scale of effects will be Medium in areas to the south-west of the site, where users are on elevated ground looking across the valley towards the proposed development (see VPs 20, 22 and 24). To the north and south of these areas, the scale of effects will reduce to Small where intervening landform, vegetation and views of other wind farms will reduce the visual effects.

6.6.74 On balance, Medium-Small scale effects will occur across an Intermediate extent of the High-Medium sensitivity receptor group. These effects will be of Medium-Low magnitude, Moderate (not significant) and Adverse.

Minor roads, residents and recreational landscapes east of the Lammermuir Hills (5.3km, east)

6.6.75 This receptor group includes users of the B6456 and minor roads, residents and recreational users of the landscape between the A697 and Longformacus and east of Harecleugh Forest and Spottiswoode.

6.6.76 Viewpoint 26 (**Figure 6.38**) represents the view when travelling towards the site along the B6456, where just over half of the proposed turbines will be partially visible above the distant hill tops. Visibility will vary across the receptor group, being partially screened by local vegetation or landform, but in general areas of theoretical visibility provide open, partial views towards the proposed development from across the receptor group.

6.6.77 The scale of effects will range from Medium in locations closer to the site, or from open elevated locations, to Small towards the east of the receptor group. On balance, Medium-Small scale effects will occur across an Intermediate extent of the High-Medium sensitivity receptor group. These effects will be of Medium-Low magnitude, Moderate (not significant) and Adverse.

Recreational landscapes, minor roads and settlements south of the site (8.1km, south)

6.6.78 This receptor group encompasses the area of land bound by the A697 between High Cross and Greenlaw in the north and the A68 between St Leonards Hill (south west of Lauder) and Ravenswood Roundabout (east of Melrose) in the west. This area includes minor link roads, small settlements and isolated dwellings. Viewpoint 10 (**Figure 6.22**) is located between Gordon and East Gordon on the A6105 within this receptor group.

6.6.79 There will be Medium-Small scale effects in the northern half of this receptor group, reducing to Small scale at the edge of the ZVI where the increasing distance and increasing landform creates a sense of separation, reducing the proposed development to a background feature within the view and thus reducing the scale of effects.

6.6.80 At worst, Medium-Small scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor group. These effects will be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Semi-rural recreational landscapes, minor roads and minor settlements north of the Lammermuir Hills (7.5km, north)

6.6.81 This receptor group encompasses the area to the north of the Lammermuir Hills and Fala Moor and south of Dalkeith, Tranent and East Linton. Receptors within this group are primarily those accessing the small-medium sized settlements, road users or those accessing recreational resources such as Traprain Law hill and Vogrie Country Park. Viewpoints 12 and 28 (**Figures 6.24 and 6.40**) lie within this group.

6.6.82 Hills within Lammermuir range, adjacent to the north of the site, provide a high degree of screening within this receptor group; for the majority of areas, views are limited to a small number of blade tips, with the nacelles and towers predominantly screened (see VP28) – giving rise to Negligible scale effects. More turbines within the proposed development will be visible in views from distant areas within this receptor group, such as around Gorebridge (see VP12) and Mayfield. Reflecting the intervening vegetation and landform, and the distance from the proposed development, the scale of effect will slightly increase to Small-Negligible.

6.6.83 From areas of visibility within this receptor group, the proposed development will predominantly be seen in the context of existing wind farms along the Lammermuir Hills.

6.6.84 Small-Negligible scale effects will occur across a Localised extent of this receptor group. On balance, effects on this High-Medium sensitivity receptor group will be of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

Semi-rural recreational landscapes, minor roads and minor settlements north of the Moorfoot Hills (14.6km, west)

6.6.85 This receptor group encompasses recreational users, residents and users of roads in the area north of the Moorfoot Hills, west of Gorebridge, and south of Bonnyrigg and Penicuik. This group forms a transitional landscape between the settled urban fringe of Edinburgh and the more rural countryside to the south around the Moorfoot Hills; It includes the larger settlement of Rosewell, alongside small settlements, clusters of properties and isolated dwellings.

6.6.86 As with the previous receptor group, views of the proposed development will often be in conjunction with closer operational wind farms located along the Lammermuir Hills.

6.6.87 Small-negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor group, giving rise to effects of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

Landscape and settlements along the A1 road corridor from Tranent to West Barns (16.1km, north)

6.6.88 This receptor group includes land and settlements adjacent to the parallel routes of the A1 and A199 from Tranent to West Barns. This group includes the settlements of Tranent, Haddington, East Linton and other minor residential clusters, users of the recreational landscapes and routes. It is represented by Viewpoints 11 and 27 (**Figures 6.23 and 6.39**).

6.6.89 Small-Negligible scale effects will be experienced across an Intermediate extent of the receptor group where the proposed development will be seen at a distance and in the context of existing wind farms across the Lammermuir Hills. Effects within this High-Medium sensitivity receptor group will be of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

Recreational landscapes, minor roads and settlements between East Linton and North Berwick (18.8km, north)

6.6.90 This receptor group encompasses recreational users, residents and users of roads in the area north of East Linton and South of Gullane, Direlton and North Berwick, including these coastal settlements. Gullane Links, North Berwick Law and John Muir Country Park are included within the receptor group. As with other receptor groups to the north of the Lammermuir Hills views of the proposed development will often be in conjunction with closer operational wind farms located along the Lammermuir Hills.

6.6.91 Effects on this receptor group will generally be Negligible, due to the limited amount of visibility, the sense of separation created by the distance and intervening features, and the context of existing wind farms within which the proposed development will be seen (see VP30 – **Figure 6.42**). The effects will increase in scale slightly from more elevated locations, such as North-Berwick Law (see VP15 – **Figure 6.27**) where a wider extent of the proposed development will be visible, and the user's focus is primarily on enjoying the view.

6.6.92 On balance, Negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor and will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

Residents, users of local roads and landscapes in Edinburgh (24.1km, north-west)

6.6.93 This receptor group includes the area of Edinburgh within the ZVI encompassed by the City of Edinburgh Bypass (A720). Receptors include residents, users of local roads and landscapes within Edinburgh. Viewpoint 17 (**Figure 6.29**) is located at Arthur's Seat, one of the highpoints within this receptor group.

6.6.94 The scale of effects across this receptor group will be Negligible as the proposed development will form a very minor, distant alteration to the view. Due to the distance, the proposed development will only be visible on days with very good visibility (as classified by the met office[39]) or better where it will be seen on the distant ridgelines in the context of other existing wind farms. These effects will occur across a Localised extent of this High-Medium sensitivity receptor and will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

Landscape and settlements along, and to the east of, the A701 road corridor from the A720 to Carlops (26.6km, north-west)

6.6.95 This receptor group encompasses residents and recreational users along the A701 road corridor from the A720 to Carlops and the landscape up to approximately 2-4km east of the A701. This group includes the settlements of Loanhead, Penicuik and other minor residential clusters. Users of the recreational landscapes, including Roslin Glen Country Park, and recreational routes are included, however the Pentland Hills are not within this group.

6.6.96 Views of the proposed development will be possible from open areas within this receptor group; however, they are unlikely to occur within the dense built-up areas of Penicuik and Loanhead.

6.6.97 Due to the developed nature of this receptor groups, views will be limited to infrequent, glimpsed views where the proposed development will be visible as a minor, or very minor element on the distant ridgelines where it will be seen in the context of existing operational wind farms. These views will range from Small-Negligible to Negligible scale.

6.6.98 Overall effects on this High-Medium sensitivity receptor group will occur across an Intermediate extent of the area, leading to effects of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

Pentland Hills from the A720 to Carlops (30.5km, north-west)

6.6.99 This receptor group encompasses the area of the Pentland Hills Regional Park within the ZVI and includes users of Hillend Country Park, recreational users, residents and users of the minor roads. Viewpoint 18 (**Figure 6.30**) is located at the summit of Allermuir Hill within this receptor group.

6.6.100 Effects on this receptor group will generally be Negligible, due to the limited amount of visibility, the sense of separation created by the distance and intervening features, and the context of existing wind farms within which the proposed development will be seen (see VP18). These effects will occur across an Intermediate extent of this High-Medium sensitivity receptor and will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

Moorfoot Hills and the landscape to the south (11.1km, west)

6.6.101 The receptor group encompasses the Moorfoot Hills and the largely recreational landscape to the south, bound in the east and south by the A7. Receptors include users of the landscape, residents in and around the minor/isolated settlements and users of the minor roads. Viewpoint 13 (**Figure 6.25**) is located within this receptor group.

6.6.102 Views from this receptor group occur across the east-facing hill sides and tops in the east, with areas of visibility reducing to predominantly hill tops in the west due to the steep sided V-shaped valleys between the hills.

6.6.103 The scale of effect will vary across the receptor group, and would be Small-Negligible in the north (see VP13) and south where the user will see the proposed development behind the operational wind farms of Carcant, Toddleburn and Longpark. In these locations the proposed development will form a minor to very-minor addition to the view, with turbines in the foreground creating a more prominent focus. From areas within the middle of this receptor group, the scale of effect will increase to Small, as the proposed development will be seen as a minor addition to a view that includes wind farm across the fore-, mid- and back-ground of the view.

6.6.104 Overall Small to Negligible effects will occur across an Intermediate extent of this High-Medium sensitivity receptor group, and will be of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

[39] Met Office. (2023). Definitions of Codes. Available at: https://www.metoffice.gov.uk/services/data/datapoint/code-definitions

Distant roads, residents and recreational landscapes south of Galashiels and Melrose (20.4km, south)

6.6.105 This receptor group encompasses the area of the ZVI to the south of Galashiels and Melrose including residents, users of minor roads and users of the recreational landscape - including the popular local viewpoint on Eildon Hill (see VP14 – **Figure 6.26**).

6.6.106 Effects within this receptor group will be of Small-Negligible scale from elevated locations, such as on the Eildon Hills (see VP14), where the proposed development will form a minor to very-minor alteration to the view and will be visible on the distant hills and in the context of multiple existing windfarms. These effects will reduce to Negligible scale from lower-lying land. On balance, Small-Negligible effects will occur across a Localised extent of this High-Medium sensitivity receptor and will be of Low-Negligible magnitude, Slight-Minimal significance (not significant) and Neutral due to presence of wind farms across the wider landscape.

Roads and Rail

A697 (3.0km, south)

6.6.107 This road runs south-east from Oxton/the A68 past the site entrance towards Coldstream. Visibility is likely to be slightly reduced from that shown on the ZTV study (**Figure 6.5**) due to localised vegetation and topography that will provide a degree of screening. Views to existing wind farms are not a prominent feature of views from this route, as the landform and vegetation along the road often provide screening. There are views of some of the existing turbines at Fallago Rig from stretches of the route.

6.6.108 Near the D124/A697 junction, views of the proposed development will be more open to the north of the site access track and increasingly screened by the landform to the south of the access point. Here the scale of effect will range from Large-Medium near Boghall/Cleekhimmin Bridge; Small between Cleekhimmin Burn and Newbiggins Walls, where the landform will reduce views to a small number of blades/blade tips; and Medium between Newbiggins Walls and Drummonds-hall where a larger number of blades and the occasional tower will be visible above the hills.

6.6.109 Visibility will resume between Whiteburn and Greenlaw where the scale of effect will gradually reduce from Medium (see VP25 for reference (**Figure 6.37**)) to Small-Negligible as the viewer moves further from the site. Fallago Rig can be seen from some of this stretch of the route, including at VP25. Views will change from semi-distant, open views of towers and blades in the east, to more distant views, primarily limited to blades, in the west.

6.6.110 Beyond Greenlaw the distance and screening provided by landform and vegetation will reduce the scale of effects to Negligible.

6.6.111 Within the ZVI drivers using this route will be of Low sensitivity and, at worst, will experience Medium scale effects across an Intermediate extent of the route and Small scale effects across a Localised extent. These effects will be of Medium magnitude, Slight significance (not significant) and Adverse around Boghall/Cleekhimmin Bridge, and from Newbiggins Walls to Hexpathdean Bridge to the east of Houndslow. Low magnitude, Slight significance (not significant) and Adverse effects will occur between Cleekhimmin Burn and Newbiggins Walls, and between Hexpathdean Bridge and Greenlaw.

A68 (3.3km, west)

6.6.112 This road runs south-east from the edge of Edinburgh through Lauder towards Jedburgh and the Scottish Border. Visibility is likely to occur:

- Between Soutra Hill and VP5 (**Figure 6.17**), where some blade tips will be visible behind the combined existing wind farms of Keith Hill, Pogbie I & II and Dun Law I and II adjacent to the A68, where there is an existing feeling of driving through a wind farm landscape. The scale of effect here will be Negligible.
- At VP5 and along a short stretch of road between VP5 and Oxton where a small number of blades will be visible above the hillside, beyond existing turbines, and the scale of effect will be Small.
- Between Oxton and Lauder (see VP3 – **Figure 6.15**) where users of the A68 will be in relatively close proximity to the proposed development, which will be clearly visible across and behind the local hills. Here the scale of effect will increase to Medium-small.
- Between Lauder and Galadean where the scale of effects will gradually decrease to Small-Negligible as the proposed development becomes increasingly screened by landform and vegetation. Views will reduce to a small number of blades visible above local features (see VP23 – **Figure 6.35**).

- In very rare, glimpsed views between Galadean and the edge of the ZVI where views will be limited to the blades of a small number of turbines, seen at increasing distance. In these views the scale of effect will be Negligible.

6.6.113 Drivers using this route will be of Low sensitivity and, at worst, will experience Medium scale effects across a Localised extent of the route and Small scale effects across a Limited extent of the route. These effects will be of Medium magnitude, Slight significance (not significant) and Adverse between Oxton and Lauder, and of Negligible magnitude, Minimal significance (not significant) and Adverse along the wider route.

A6089 (8.4km, south)

6.6.114 Within the ZVI the northern end of the A6089 runs in a south-west alignment from Whiteburn to Sneep Covert on its route towards Kelso. Compared to the ZTV study (**Figure 6.6**) there will be no actual visibility to the south of Gordon due to roadside vegetation which effectively screens views, albeit in winter there may be occasional glimpsed views where deciduous trees are located. The ZTV is a largely accurate representation of likely visibility to the north of Gordon, although there will be a slightly reduction in visibility on the edge of Gordon and Whiteburn due to local roadside vegetation.

6.6.115 Drivers using this route will be of Low sensitivity. Within the ZVI, Medium scale effects will occur across a Localised extent of this route. effects will be of Medium magnitude, Slight significance (not significant) and Adverse.

A6105 (13.7km, south)

6.6.116 Within the ZVI this road runs on an east-west axis from Earlston via Gordon and Greenlaw. As shown on the ZTV study (**Figure 6.6**), visibility is unlikely to occur between Earlston and Gordon. Between Gordon and Greenlaw views are represented by Viewpoint 10 (**Figure 6.22**). To the east of Gordon, theoretical visibility is relatively accurate on the ZTV study, albeit there will be a slight reduction to the east of Gordon and a reduction around East Gordon where roadside vegetation and buildings will screen views. The scale of effects will vary along the route dependant on the openness of views and the amount of the proposed development visible; around VP10 effects will be Medium-Small scale; west of East Gordon these will reduce to Small scale due to the intermittent roadside vegetation which gives rise to filtered views; directly east of East Gordon the scale of effects will be Medium, the highest for this route, where open views will result in a large proportion of the proposed development being visible; east of these locations effects will be Small scale.

6.6.117 Drivers using this route will be of Low sensitivity. On balance, Medium-Small scale effects will occur across a Localised extent of this road within the ZVI. Effects will be of Medium-Low magnitude, Slight significance (not significant) and Adverse.

A6093 (15.8km, north)

6.6.118 This 17.1km long road connects Haddington to the A68 south of Fordel. Visibility will mostly occur along the eastern half of the road, between Easter Pencaitland and Haddington, where the visibility will be predominantly limited to views of a single turbine (T11) with some limited visibility of turbines within the east of the site, most notably T10 and T12, closer to Haddington. The remaining turbine will be screened behind landform.

6.6.119 Drivers using this route will be of Low sensitivity and Small-Negligible scale effects will occur across an Intermediate extent of the route. Effects will be of Low-Negligible magnitude, Minimal significance (not significant) and Neutral due to the limited visibility.

A6137 (16.7km, north)

6.6.120 This 8km road runs north from Haddington towards Aberlady on the coast. Within the ZVI the ZTV (**Figure 6.6**) is relatively accurate; within the north and southern ends of this area of visibility there will be open views of the proposed development behind the distant ridgeline, and within the centre of this area vegetation along the western side of the road will screen the majority of turbines from view. In both instances, the proposed development will be seen in the context of existing operational wind farms across the Lammermuir Hills.

6.6.121 Drivers using this route will be of Low sensitivity and Small-Negligible scale effects will occur across a Localised extent of the route. Effects will be of Negligible magnitude, Minimal significance (not significant) and Adverse.

A1 (17.1km, north)

6.6.122 This route runs east from central Edinburgh towards Dunbar, before continuing south along the coast and across the Scottish Border to London. Within the ZVI there will be occasional, glimpsed views from sections of the route near Edinburgh, where the turbines will be seen as a very minor element on the horizon. Due to the distance and brief nature of these views the scale of effects will be Negligible.

6.6.123 Visibility will also occur between Tranent and Haddington, albeit this will be notably reduced from that shown on the ZTV study (**Figure 6.5**) between Tranent and Haddington due to the presence of roadside vegetation and structures that screen a large number of views; the A1 lies in a cutting between Gladsmuir and Haddington, with vegetated banks on either side of the road. Where visibility occurs, the proposed development will mostly be seen as a minor element on distant hills, between foreground trees and buildings.

6.6.124 Visibility will increase to the east of Haddington, where there will be open views of the proposed development amongst existing operational windfarms on the distant Lammermuir Hills. Viewpoint 11 (**Figure 6.23**) is located on a road bridge above the A1 and provides a representation of views from this location.

6.6.125 Drivers using this route will be of Low sensitivity and, on balance, Small-Negligible scale effects will occur across a Localised extent of the route within the ZVI. Effects will be of Negligible magnitude, Minimal significance (not significant) and Adverse.

A199 (17.1km, north)

6.6.126 This route follows broadly the same route as the A1, connecting Edinburgh to Dunbar in the east. Views from within the ZVI will be largely the same as those from the A1, albeit with slightly more visibility to the west of Haddington and slightly less to the east, due to the localised screening from roadside vegetation and the slight changes of level between the routes.

6.6.127 Drivers using this route will be of Low sensitivity and, on balance, Small-Negligible scale effects will occur across a Localised extent of the route within the ZVI. Effects will be of Negligible magnitude, Minimal significance (not significant) and Adverse.

A6106 (19.5km, north-west)

6.6.128 This 13.7km route lies almost wholly within the ZVI, where it runs from Fordel to Portobello. Visibility will occur between Cauldcotts and Sheriffhill Mains, where the proposed development will be seen on the distant horizon in the context of existing operational wind farms.

6.6.129 Drivers using this route will be of Low sensitivity and given the distance from the proposed development, Small-Negligible scale effects will occur across a Localised extent of the route. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

A198 (19.7km, north)

6.6.130 This 36.5km route provides a loop along the coast from Tranent to Tyninghame. Views from within the ZVI are represented by VP30 (**Figure 6.42**) on the edge of Dalkeith. The landscape along the route is largely open, with limited roadside vegetation to screen views of the proposed development which will be seen as a very minor element on the distant ridgeline, set amongst existing operational wind farms.

6.6.131 Drivers using this route will be of Low sensitivity and Negligible scale effects will occur across an Intermediate extent of the route. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

A702 (30.3km, north-west)

6.6.132 This road runs from Edinburgh past the Pentland Hills towards St John's Town of Dalry in the south-west. Within the ZVI visibility will occur between the A720, City of Edinburgh Bypass and Carlops. Visibility along this route will be reduced to short, intermittent stretches of visibility due to local landform and vegetation which effectively screens the proposed development. Where the proposed development will be visible it will be seen as a very minor, distant element in the view and will be visible in the context of existing operational wind farms.

6.6.133 Drivers using this route will be of Low sensitivity and Negligible scale effects will occur across an Intermediate extent of the route. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

Long Distance Routes

Southern Upland Way (3.4km, south-east)

6.6.134 This 344km long distance footpath is the longest of Scotland's Great Trails and runs from coast to coast, connecting Portpatrick in the west and Cockburnspath in the east. Within the ZVI the route passes north from Galashiels to Lauder, before turning north-east towards Longformacus. Viewpoints 6, 7, 19 and 24 (**Figures 6.18, 6.19 6.31 and 6.36**) provide representative views from along the trail. Existing wind farms begin to become a feature of views from the Southern Upland Way in the vicinity of Lauder, on higher ground between the area south west of Lauder to the area east of Twin Law Cairns near VP6.

6.6.135 The scale of effect will be highest directly to the south-east of the site where the route passes within 5km of the proposed development; along this section of route the scale of effects will be Large-medium, where the full extent of the proposed development will be visible as a new wind farm on the local hills.

6.6.136 Beyond 5km the scale of effects will reduce. In the east, this will be to Medium scale at Twin Law Cairns (VP6), reducing to Negligible to the east of Watch Water Reservoir due to the substantial reduction in visibility resulting from the landform and local vegetation, coupled with the increasing cumulative visibility with Fallago Rig wind farm, which will be located between the viewer and the proposed development.

6.6.137 To the south, the scale of effects will vary between Medium and Medium-small scale as shown by Viewpoints 7, 19 and 24. Beyond Viewpoint 24, visibility will be more intermittent and the scale of effect will gradually reduce to Small by Melrose and Negligible south of Galashiels. As the distance from the proposed development increases, the proposed turbines will be seen as a smaller feature on the horizon, increasingly screened by intervening landform and vegetation and seen in the wider context of operational wind farms.

6.6.138 Users of the Southern Upland Way are assessed to be High-Medium sensitivity. Effects on this route within 5km of the proposed development will be of Large-medium scale and occur across a Limited extent of the route. These effects will be of Medium-low magnitude, Moderate significance (not significant) and Adverse. Beyond 5km, effects will be more intermittent and Medium to Medium-small scale effects will occur across an Intermediate extent of the route within the ZVI; on balance, effects along these sections of the route will also be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

Operational Effects on Designated Landscapes

National Scenic Areas (NSA)

Eildon and Leaderfoot NSA (17.2km, south-west).

6.6.139 NSAs are defined by the Planning etc. (Scotland) Act 2006 Scottish[40] as areas *"of outstanding scenic value in a national context"*. NPF4 states (Policy 4) that development that affects a NSA will only be permitted where:

- "The objectives of the designation and the overall integrity of the NSA won't be compromised; or
- or any significant adverse effects on its special qualities are outweighed by social, environmental or economic benefits of national importance."

6.6.140 The proposed development lies outwith Eildon and Leaderfoot NSA. NatureScot's 2010 report 'The special qualities of the National Scenic Areas'[41] describes the special qualities of this NSA as:

- "Great landscape diversity within a compact area
- The distinctive triad of the Eildon Hills
- Spectacular views from the hill summits
- A strongly united landscape pattern of lively rhythm and colour
- A richly wooded scene of great variety
- The Tweed, an iconic river of international renown
- A rich array of historic buildings, structures and estates
- The hub of Border settlement
- A harmonious and varied prospect from unequalled viewpoints
- Inspiration for the arts, literature and painting
- Border country ballads and battles
- The historic crossings of Leaderfoot
- Scott's View
- The Wallace Statue"

6.6.141 Viewpoint 14 (**Figure 6.26**) is located atop Eildon Mid Hill within this NSA, and represents the views from hill summits and viewpoints. Scott's View, the main listed viewpoint within the special qualities, is a 180 degree viewpoint that looks west towards Melrose and the Eildon Hills, no visibility is expected to occur within the main aspect of this view.

6.6.142 Theoretical visibility, as shown on the ZTV study (**Figure 6.6**) indicates limited visibility within the NSA. Where visibility is shown, it is primarily limited to open hill tops, particularly along the Eildon Hills, at Bermersyde Hill and Black Hill.

6.6.143 Effects on the setting of the Eildon Hills will be limited due to the visual separation between the hills and proposed development. From the hill summits the change in view is represented by Viewpoint 14. Effects from this viewpoint are listed within **Technical Appendix 6.4** as Small-Negligible and Neutral.

6.6.144 Due to the infrequent, limited visibility from within the NSA, there will be little impact on setting of its internal landscape, including the rivers, historic buildings and estates.

6.6.145 The NSA is assessed to be of National value and Medium susceptibility to the type of development proposed, which is judged to result in a High-medium sensitivity. Small-Negligible scale effects on the special qualities of the NSA, in this case relating to the views from hill summits, will occur across a Limited extent of the area. Effects will be of Negligible magnitude, Minimal significance (not significant) and Adverse.

[40] Scottish Government. (2006). Planning etc. (Scotland) Act 2006. Available at: https://www.legislation.gov.uk/asp/2006/17/pdfs/asp_20060017_en.pdf

[41] NatureScot. (2010). The special qualities of the national Scenic Areas. Scottish Natural Heritage Commissioned Report No. 374 (iBids and Project no 648). Available at: https://www.nature.scot/doc/naturescot-commissioned-report-374-special-qualities-national-scenic-areas

Regional Parks

Pentland Hills Regional Park (30.5km, north-west).

6.6.146 This regional park covers multiple council areas, within Midlothian's Local Development Plan (2017) Policy RD3 states that *"the Council will seek to support the stated aims of the Regional Park which are:*

- to retain the essential character of the hills as a place for the peaceful enjoyment of the countryside;
- caring for the hills, so that the landscape and the habitat are protected and enhanced;
- within this caring framework, to encourage responsible public enjoyment of the hills; and
- co-ordination of these aims so that they can co-exist with farming and other land uses within the Park."

6.6.147 Similarly, the Edinburgh Local Development Plan (2016) states that "development which supports the aims of the Pentlands Hills Regional Park will be permitted provided it has no unacceptable impact on the character and landscape quality of the Park."

6.6.148 The ZTV study (**Figure 6.6**) indicates that visibility will occur across the hills tops and east facing slopes within the Pentlands. These views are represented by Viewpoint 18 (**Figure 6.30**) located on Allermuir Hill where the proposed development is seen on the distant Lammermuir Hills in the context of existing operational wind farms.

6.6.149 The Regional Park is assessed to be of Local value and Medium susceptibility to the type of development proposed, which is judged to result in a Medium sensitivity. Negligible scale effects will occur across an Intermediate extent. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

Local Landscape Areas (LLAs)

Scottish Borders LLA6 Lammermuir Hills (includes site)

6.6.150 The location of LLA6 is shown on **Figure 6.2**. Within the Scottish Borders LLAs are described within the Local Landscape Designations Supplementary Planning Guidance (2012)[42]. LLA6 is noted to include the open moorland of the main Lammermuir Plateau, from Lauderdale in the west to Abbey St Bathans in the east. It includes the Lammermuir plateau, the upper Whiteadder, Dirrington Laws and the fringes of upper Lauderdale. The designation statement lists the remote, wild qualities of the LLA, despite its managed nature, and highlights the openness which lend scenic value. Wind farms are listed as being prominent within the LLA and a force for change; at present Dun Law I & II, Fallago Rig, Crystal Rig I, II & IV and Aikengall IIa wind farms are located within this LLA. Viewpoints 1, 5, 6, 9 and 19 (**Figures 6.13, 6.17, 6.18, 6.21 and 6.31)** are located within this LLA.

6.6.151 The proposed development will be located at the western end of this LLA adjacent to Fallago Rig where it will increase the influence of wind development within the area. The western extent of the LLA is located close to Lauder, Oxton and two A roads. Within this area of the LLA the sense of openness and remoteness is lower than elsewhere within the LLA. This LLA is assessed to be of Local/District value and High susceptibility to the type of development proposed, giving rise to a High-medium landscape sensitivity.

6.6.152 Medium scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Medium magnitude, Major-Moderate significance (significant) and Adverse.

[42] Scottish Borders Council. (August 2012). Local Landscape Designations Supplementary Planning Guidance. Available at: https://www.scotborders.gov.uk/downloads/file/1124/local_landscape_designations

East Lothian LLA1 Lammermuir Moorland (2.3km, north)

6.6.153 The location of LLA1 is shown on **Figure 6.2**. Within East Lothian, LLAs are described within the Special Landscape Areas Supplementary Planning Guidance (2018)[43]. Viewpoint 21 (**Figure 6.33**) is located within this LLA. The statement of importance for LLA1 describes the LLA as open, upland moorland in the heart of the Lammermuir Hills. It notes the key characteristic of the area as *"its sense of expansiveness and space, dominated by the large, open area of moorland and big skies."* The SPG notes the presence of Fallago Rig and Crystal Rig wind farms on the edge of this LLA, however it notes that despite the presence of infrastructure "*the area retains an 'away from it all' elemental feel, deriving from its remote location, topography and generally sparse built development*".

6.6.154 This LLA is assessed to be of Local/District value and High susceptibility to the type of development proposed, giving rise to a High-Medium landscape sensitivity.

6.6.155 The proposed development is located outwith this LLA and the operational Fallago Rig Wind Farm will be located between the LLA and the proposed development. Consequently, the proposed development will not further affect the open, wild character and the perception of scale within the LLA.

6.6.156 Small scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Low magnitude, Slight significance (not significant) and Adverse.

Midlothian LLA2 Fala Moor (9.5km, north-west)

6.6.157 The location of LLA2 is shown on **Figure 6.2**. LLAs within Midlothian are described within the Midlothian Local Development Plan Special Landscape Areas Supplementary Guide (2018)[44]. The Supplementary Guide describes the LLA as "*an open, seemingly remote landscape largely contained from views from the surrounding area yet offering dramatic and panoramic views over the Lothians to the north. The uninhabited plateau of blanket bog and moorland is a rare habitat within Midlothian that is of great ecological value, and contrasts with its surrounding farmed hill slopes and coniferous shelterbelts."* The guide notes *"the rarity of this secluded and natural upland moorland in Midlothian"* and the *"extensive open views from the moor across the Lothians"* as reasons for its designation.

6.6.158 This LLA is assessed to be of Local/District value and High susceptibility to the type of development proposed, giving rise to a High-Medium landscape sensitivity.

6.6.159 The proposed development is located outwith this LLA and the operational Dun Law I & II, Pogbie I & II and Keith Hill Wind Farms lie between the LLA and the proposed development. Visibility from this area will be extremely limited and, whilst shown on the ZTV (**Figure 6.6**) actual visibility will be limited to a very small number of turbines if possible.

6.6.160 Negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

East Lothian LLA12 Bolton (12.4km, north)

6.6.161 LLA12, shown on **Figure 6.2**, is a small LLA that encompasses a *"A small traditional settlement centred about a historic church and farm steading in a picturesque wooded valley setting,"* as described within East Lothian's Special Landscape Areas Supplementary Planning Guidance (2018). The special qualities describe a rolling arable landscape centred around the settlement of Bolton and the surrounding woodlands which enclose and define the valley. The guidelines for development note that proposals must not harm the setting of this LLA.

6.6.162 This LLA is assessed to be of Local/District value and High susceptibility to development, giving rise to a High-Medium landscape sensitivity.

6.6.163 The proposed development is located outwith this LLA and visibility from within the LLA is likely to be more limited than that shown on the ZTV (**Figure 6.6**) due to the aforementioned woodlands within the LLA. Where visible, the proposed development will be seen as a very minor element on the horizon and will be largely screened by local vegetation bounding the rolling arable fields, it will not affect the setting.

6.6.164 Negligible scale effects will occur across a Localised extent of this High-Medium sensitivity receptor. Effects will be of Negligible magnitude, Minimal significance (not significant) and Neutral.

[43] Midlothian Council. (October 2018). Midlothian Local Development Plan Special Landscape Areas Supplementary Guide. Available at: https://www.midlothian.gov.uk/downloads/download/594/special_landscape_areas

[44] East Lothian Council. (October 2018). Special Landscape Areas Supplementary Planning Guidance. Available at: https://www.eastlothian.gov.uk/info/210547/planning_and_building_standards/12284/natural_environment_and_planning/2

East Lothian LLA22 Samuelston (14.4km, north)

6.6.165 LLA22, shown on Figure 6.2, is another small LLA that encompasses "a particularly picturesque historic agricultural settlement set on the banks of the meandering River Tyne in the bucolic, rolling countryside of the Mid Tyne Plain, with an abundance of both flora and fauna, of traditional and natural character, with high local scenic value and good recreation access." The special qualities and features reflect this description and note the scenic views towards the Lammermuir Hills. The guidelines for development note that proposals must not harm the setting of the area or the key views.

6.6.166 This LLA is assessed to be of Local/District value and High susceptibility to development, giving rise to a High-Medium landscape sensitivity.

6.6.167 The proposed development is located outwith this LLA and will be partially visible from open areas within this LLA. Most of the proposed development will be screened by landform within the Lammermuir Hills and visibility will be limited to a small number of blades (<6 wind turbines) visible on the hills and seen in the context of other operational wind farms.

6.6.168 Small-Negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Low-Negligible magnitude, Slight significance (not significant) and Adverse.

Gardens and Designed Landscapes (GDLs)

Thirlestane Castle GDL (4.6km, south).

6.6.169 This GDL is located to the south of the proposed development with views from the grounds represented by Viewpoint 7 (**Figure 6.19**) and views from inside the Castle represented by Heritage Viewpoint H6 (**Figure 7.10**). Of landscape and visual relevance, Historic Environment Scotland (HES) note that the principal drives afford good views; from here the proposed development will be partially visible above and behind local hills (see VP7). Views of the proposed development from inside the Castle and areas immediately adjacent to the building are unlikely to occur due to the dense belt of woodland directly to the east (see Heritage Viewpoint H6).

6.6.170 GDLs are assessed to be of High-Medium sensitivity. Medium-Small scale effects will occur across an Intermediate extent of this GDL, giving rise to effects that will be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Lennoxlove (Lethington) GDL (14.1km, north).

6.6.171 Located on the edge of Haddington, with a notable vista from the house looking south, along which the distant blade tips of some proposed turbines may be visible. Visibility from the wider GDL will be limited to infrequent glimpsed views of a small number of wind turbine blades.

6.6.172 Small-Negligible scale effects will occur across a Limited extent of the GDL, giving rise to effects that will be of Negligible magnitude, Minimal significance (not significant) and Adverse.

Mellerstain GDL (16.0km, south).

6.6.173 This GDL contains long axial vistas which are terminated to the north by a local hill. Views of the proposed development will be limited to areas of agricultural land within the north of the GDL, outwith the formal parkland, where the proposed development will be clearly visible in mid-distance views amidst other operational wind farms on the Lammermuir Hills.

6.6.174 Medium-Small scape effects will occur across a Localised extent of this High-Medium sensitivity receptor. Effects will be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Oxenfoord Castle GDL (16.9km, north-west).

6.6.175 This GDL is located on the west bank of the River Tyne, it is noted that views out are limited mainly to the neighbouring estate of Prestonhall and the parkland. The proposed development will be visible as a minor element on the distant ridgeline from across the higher ground within this GDL. The parkland trees will partially screen and filter views from across the area.

6.6.176 Small-Negligible scale effects will occur across a Wide extent of this High-Medium sensitivity receptor. Effects will be of Low magnitude, Slight significance (not significant) and Adverse.

The Drum GDL (26.0km, north-west).

6.6.177 This GDL is located on the edge of Edinburgh, the house is listed as facing to the south-east along a wide avenue. The proposed development will be visible from areas of the GDL where it will be seen as a minor element on the distant Lammermuir Hills, set in the context of existing operational wind farms.

6.6.178 Small-Negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Low-Negligible magnitude, Minimal significance (not significant) and Neutral.

Palace of Holyroodhouse GDL (29.9km, north-west).

6.6.179 This GDL encompasses Holyrood Park, including Arthur's Seat where Viewpoint 17 (**Figure 6.29**) is located.

6.6.180 Small-Negligible scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Low-Negligible magnitude, Minimal significance (not significant) and Neutral.

Potential Operational Night time Effects and Lighting

6.6.181 Onshore wind turbines of over 150m in height require mandatory visible spectrum aviation lighting. A proposed lighting scheme has been discussed with the Civil Aviation Authority (CAA) and the agreed scheme will comprise:

- 1 no. medium intensity steady red (2000 candela) light mounted on the nacelles of wind turbines T1, T3, T6, T8, T11, T13, T15, T17 and T19 – automatically dimmed to 10% of peak intensity (200 candela) when visibility is in excess of 5km;
- a second 2000 candela light on the nacelles of the above wind turbines to act as alternates in the event of a failure of the main light – these will not be lit at the same time as the primary light;
- no requirement for intermediate 32 candela steady red lights mounted around the tower.

6.6.182 The lights must be on "*by night*", which is defined in UK air legislation as 30 minutes after sunset until 30 minutes before sunrise. The switching of the lights on and off will be controlled by a timer, and not by photocells or similar that respond to light levels, thereby not giving rise to effects in the daytime. During periods of greater ambient light (e.g. twilight, dusk, dawn), there will be a reduced effect as the contrast of the aviation lighting against the background will be less. The hours of darkness vary considerably in Dumfries and Galloway throughout the year meaning that in summer, experience of the lighting whilst people are typically more active and likely to be outside is considerably reduced. In winter, however, the lighting will be in use for greater periods of time and potentially active during peak activity times, i.e. morning and evening rush hours.

6.6.183 Due to the location of the lighting on the wind turbines relative to the rotating blades, this can result in a flashing or flickering effect caused by the screening effect of blades as they travel past the lights. These effects are dependent upon the rotation speed of the blades, direction of wind and the location of the receptor. Where a number of lit wind turbines are present in the view, such flashing is likely to be un-coordinated.

Night time Lighting Environment of the Study Area

6.6.184 The existing intensity of artificial lighting across the study area is illustrated on **Figure 6.11** using the latest satellite data (2022) from VIIRS. The figure illustrates that there are low levels of artificial light within 5km of the site, with the exception of the settlement of Oxton to the south-west of the site. Between 5-10km from the site the level of artificial light is present around the settlements of Lauder to the south of the site and Gifford to the north, as well as isolated areas such as the quarry at Soutra Hill. Between 10-15km there are higher levels of artificial light to the north where lighting from settlements along the A1 corridor begins to enter the study area and west from settlements along the A7 corridor.

6.6.185 Lighting from beyond the study area is also experienced from many areas within it for example, elevated locations may see the lights and skyglow from larger settlements such as Edinburgh and the settlements along and to the north of the A1 corridor.

6.6.186 None of the existing wind farms within the study area are currently lit. However, Crystal Rig IV Wind Farm (consented) will include wind turbine lighting on seven of the wind turbines once construction is complete.

ZTV Studies

6.6.187 A ZTV study has been prepared to inform this assessment based on the nine wind turbines listed above being lit and at the highest nacelle height within the development parameters. This is shown on **Figure 6.12** and illustrates the number of wind turbines visible at hub height (to indicate the number of nacelle lights visible).

6.6.188 The ZTV study includes the screening effect of woodland and settlements to provide a more realistic illustration of potential visibility of proposed lighting compared to that of a bare earth model. It is however acknowledged that lights may, in limited instances, be visible through areas of woodland where they are not particularly dense or when leaves are not present on trees. Where this may be the case for a particular receptor this is noted in the text. However, it will have little bearing on the overall pattern of visibility within the study area.

6.6.189 As can be seen from the two ZTV studies, the wind turbine lights will be most visible from the following areas:

- The higher ground of the Lammermuir Hills in the vicinity of the site, particularly to the south east and north west;
- Higher ground and east facing slopes of the land between the A68 and A7 corridors to the south west of the site; and

- Higher ground in the belt between the A68 and Greenlaw to the south-east and south.

Effects on Landscape Character

6.6.190 Local LCTs within the 15km study area are illustrated on **Figure 6.11**. The character types most likely to experience significant effects are those which are less closely associated with lighting (i.e. not those with larger settled settlements or main road corridors) and are sufficiently close to the site that the introduction of aviation lighting nearby would be fundamentally different to other remote sources of artificial lighting.

6.6.191 The source of effects will occur as a result of the nacelle lighting. As detailed above, **Figure 6.12** indicates that the primary areas of visibility of the nacelle lights outside of the areas associated with existing lighting occur across:

- LCT90 – Dissected Plateau Moorland (includes site)
- LCT115 – Upland Valley with Mixed Farmland (includes site)
- LCT266 – Plateau Moorland – Lothians (2.2km, north)
- LCT91 – Plateau Grassland – Borders (2.3km, west)
- LCT99 – Rolling Farmland – Borders (3.8km, south)
- LCT103 – Undulating Upland Fringe (7.6km, south)
- LCT105 – Upland Fringe Moorland with Hills (9.8km, east)

6.6.192 For other LCTs considered within the assessment of effects above, either **Figure 6.12** indicates there would be little to no visibility of the lighting associated with the proposed development or there are existing sources of lighting that are prominent within the LCT such as road corridors or settlements.

6.6.193 The key characteristics of the LCTs are set out within the assessment of effects above. The night time character is generally not discussed within NatureScot's character assessment, so observations made during site visits are made below in relation to each LCT.

LCT90 – Dissected Plateau Moorland (includes site)

6.6.194 The area generally has very few sources of light within the night time environment, and these mainly originate from the scattered farmsteads and small settlements within the area. The south-western edge of this LCT will experience some skyglow and light sources from Oxton and Lauder which are set in the valley below the plateau, as illustrated by **Figure 6.11**.

6.6.195 Whilst there are limited light sources within the character area, visibility of lighting on Crystal Rig IV Wind Farm in the north-east of the LCT will be possible when it is constructed. The undulating nature of this LCT means that views vary between the low and the higher ground. There are no specific indicators of night time landscape value for this LCT. However, this area lies wholly within the Lammermuir Hills LLA. The area is judged to be the same as in the day – i.e. of Local value and Medium sensitivity.

6.6.196 The proposed development will introduce a cluster of red aviation lighting into a dark area. This will result in Large scale effects in the area immediately around the site in the west of the LCT. Visibility of the proposed lighting will vary with in areas immediately surrounding the site, from no visibility in the valley bottoms, to full visibility on higher ground. Within approximately 5km to the south-east and north-west this visibility will become much more limited and infrequent. To the north-east and south-west visibility will be limited from just beyond the site, with only isolated areas of greater visibility from localised high points.

6.6.197 The effects will be of Large-medium scale and will occur across an Intermediate extent of the LCT. These will be of High-medium magnitude, Major-moderate significance (significant) and Adverse.

LCT115 – Upland Valley with Mixed Farmland (includes site)

6.6.198 This LCT includes the settlements of Oxton and Lauder, as well as the road corridors of the A68 and A697. There are localised areas of existing lighting associated with the settlements, and although the road corridors are not lit, vehicular lights along the roads will exert an influence on this character area. These features represent a large proportion of this LCT.

6.6.199 There are no specific indicators of night time landscape value for this LCT. However, this area lies within the Lammermuir Hills LLA. The area is judged to be the same as in the day – i.e. of Community value and Medium sensitivity.

6.6.200 The proposed development will introduce a cluster of red aviation lights that will be visible primarily from the south-western side of this LCT. From this side of the LCT, both the settlements and road corridors provide separation between the LCT and the proposed development. However, the wind turbine lights will still exert some influence on the north-east facing elevated areas of this LCT.

6.6.201 Effects will be of Medium-small scale in the south-western side of this LCT, reducing to Negligible scale in the north-east side. These Medium-small effects will occur across an Intermediate extent of the LCT and will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

LCT266 – Plateau Moorland – Lothians (2.2km, north)

6.6.202 Within 15km of the site, there are very few existing sources of light within this LCT. There are also few roads that influence the night time character. There will be visibility of lighting on Crystal Rig IV Wind Farm close to the southern boundary of the LCT when it is constructed.

6.6.203 There are no specific indicators of night time landscape value for this LCT. However, this area is covered by a number of LLAs. The area is judged to be the same as in the day – i.e. of Local value and High-medium sensitivity.

6.6.204 The proposed development will introduce a cluster of red aviation lights that will be visible primarily from the south-western edge of this LCT, where it lies within approximately 3.5-4km of the proposed wind turbines. Across the remainder of the LCT, visibility of the proposed wind turbine lighting would be very limited, with views only possible from areas of higher ground at a distance of more than 7km from the proposed wind turbines.

6.6.205 Effects will be of Medium-small scale along the south western edge of this LCT, reducing to Negligible scale across much of the remainder of the LCT. These Medium-small effects will occur across a Limited extent of the LCT and will be of Low-negligible magnitude, Slight significance (not significant) and Adverse.

LCT91 – Plateau Grassland – Borders (2.3km, west)

6.6.206 Within this LCT, there are very few existing sources of light. There are also few roads that influence the night time character. However, similarly to LCT 115, the settlements of Oxton and Lauder, as well as the road corridors of the A68 and A697, provide sources of lighting between the site and the LCT.

6.6.207 There are no specific indicators of night time landscape value for this LCT. However, this area lies partly within the Lammermuir Hills LLA. The area is judged to be the same as in the day – i.e. of Community value and Medium-low sensitivity.

6.6.208 The proposed development will introduce a cluster of red aviation lights that will be visible from two bands of this LCT, one along the eastern edge adjacent to LCT115 and a second band of higher ground in the centre of the LCT. Given the elevated nature of these bands, all of the lit wind turbines are likely to be visible. However, both the settlements and road corridors provide separation between the LCT and the proposed development, which will be between 6-10km away.

6.6.209 Effects will be of Medium-small to Small scale in the areas of this LCT where there is likely to be visibility of the proposed lighting. These effects will occur across an Intermediate extent of the LCT and will be of Medium-low to Low magnitude, Moderate to Slight significance (not significant) and Adverse.

LCT99 – Rolling Farmland – Borders (3.8km, south)

6.6.210 Within this LCT there are some small settlements as well as the road corridors of the A697, A6089 and B6456. Although the roads are not lit, the presence of traffic travelling along them influences the night time character.

6.6.211 There are no specific indicators of night time landscape value for this LCT. A very small area of the LCT lies within the Lammermuir Hills LLA. The area is judged to be the same as in the day – i.e. of Community value and Medium sensitivity.

6.6.212 The proposed development will introduce a cluster of red aviation lights that will be visible from two main bands of this LCT as well as a smaller area along the northern edge of the LCT. These bands are a second band of higher ground in the centre of the LCT, south east of the B6456, and the second from the north-west facing slopes south of Eden Water. Given the elevated nature of these bands, all of the lit wind turbines are likely to be visible from the highest ground, but visibility will drop off quickly as the elevation decreases. However, with the exception of the area along the northern edge of the LCT, these areas will be between 7.5-15km from the proposed development.

6.6.213 Effects will be of Small scale in the main bands of this LCT where there is likely to be visibility of the proposed lighting. These effects will occur across an Intermediate extent of the LCT and will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT103 – Undulating Upland Fringe (7.6km, south)

6.6.214 Within this LCT, there are very few existing sources of light. There are also few roads that influence the night time character. However, similarly to LCT 91, the settlements of Oxton and Lauder, as well as the road corridor of the A68, provide sources of lighting between the site and the LCT.

6.6.215 There are no specific indicators of night time landscape value for this LCT, which lies outside any designated landscapes. The area is judged to be the same as in the day – i.e. of Community value and Medium sensitivity.

6.6.216 The proposed development will introduce a cluster of red aviation lights that will be visible from fragmented areas of higher ground within this LCT, with visibility broken up by a combination of large woodlands and landform. Given the elevated nature of the areas with visibility, all of the lit wind turbines are likely to be visible in many of these areas. However, both the settlements and road corridor provide separation between the LCT and the proposed development, which will be between 7-15km away.

6.6.217 Effects will be of Medium-small to Small scale in the areas of this LCT where there is likely to be visibility of the proposed lighting. These effects will occur across an Intermediate extent of the LCT and will be of Medium-Low to Low magnitude, Moderate to Slight significance (not significant) and Adverse.

LCT105 – Upland Fringe Moorland with Hills (9.8km, east)

6.6.218 Within this LCT, there are very few existing sources of light, although the B6456 does run through the LCT. Although the road is not lit, the presence of traffic travelling along it influences the night time character.

6.6.219 There are no specific indicators of night time landscape value for this LCT. A small area of the LCT lies within the Lammermuir Hills LLA. The area is judged to be the same as in the day – i.e. of Community value and Medium-low sensitivity.

6.6.220 The proposed development will introduce a cluster of red aviation lights that will be visible from fragmented areas within this LCT, with visibility broken up predominantly by landform. Within most areas of the LCT, visibility would be limited to between one and three of the proposed wind turbine lights. However, the road corridor is located between most of the areas of potential visibility and the proposed development, which will be between 10-15km away.

6.6.221 Effects will be of Small scale in the areas of this LCT where there is likely to be visibility of the proposed lighting. These effects will occur across an Intermediate extent of the LCT and will be of Low magnitude, Slight significance (not significant) and Adverse.

Effects on Visual Receptors

Visual Aids

6.6.222 Viewpoints 2 at Oxton (Figure 6.14), 3 at Lauder (**Figure 6.15**), 5 on the A68 (**Figure 6.17**), 7 near Thirlestane Castle (**Figure 6.19**), 9 near Longformacus (**Figure 6.21**), 11 from the A1 near Haddington (**Figure 6.23**) and 30 from the A198 near Dirleton (**Figure 6.42**) include night photomontages to help illustrate the effects at night. These viewpoints have been selected as locations where visual receptors are most likely to be significantly affected by lighting or have been requested by key stakeholders (see **Table 6.1**) to demonstrate likely visual effects at night, including some locations beyond the 15km study area.

6.6.223 Within the 15km study Viewpoints 1, 4, 6, 8, 19, 20, 22 and 24 were discounted as the majority of receptors are unlikely to visit these locations outside of daylight hours, Viewpoints 9, 21 and 25 were discounted due to the presence of vehicles along the road which will form the dominant element at night, and Viewpoint 23 was discounted due to a lack of visibility (see **Figure 6.12**).

6.6.224 For each of the selected viewpoints, the photographs were taken within the hour after sunset when the landform can still be distinguished, rather than in full darkness, in accordance with the guidance provided by NatureScot in 'Visual Representation of Wind Farms'. Photomontages are calibrated with reference to photography of the built wind turbine at Methil, Fife which has a 2000 candela nacelle light. Further detail in respect of the production of night time photomontages is included in **Technical Appendix 6.1**.

6.6.225 The viewpoint description, description of effects and scale of effects for each viewpoint (see **Figure 6.12** for viewpoint locations) is set out in **Technical Appendix 6.4**. The scale of effect at each viewpoint within the 15km study area for the night time assessment is summarised in **Table 6.11**.

Table 6.11: Summary of Scale of Night Time Effects on Viewpoints

Viewpoint Reference & Location	Distance, Direction	Turbine lights visible	Scale of Effect	Beneficial / Neutral / Adverse
VP1: Lylestone Hill, Core Path 16	1.4km, south	All 9 lights	Large	Adverse
VP2: Station Road, Oxton	4.0km, west	2 lights (T1 and T19)	Medium-small	Adverse
VP3: A68 North of Lauder	5.4km, south	4 lights (T1, T3, T17 and T19)	Medium-small	Adverse
VP4: Lammer Law	5.2km, north	All 9 lights	Medium	Adverse

Viewpoint Reference & Location	Distance, Direction	Turbine lights visible	Scale of Effect	Beneficial / Neutral / Adverse
VP5: A68 South of Dun Law Wind Farm	5.9km, west	4 lights (T11, T13, T15, T17)	Medium-small	Adverse
VP6: Southern Upland Way, Twin Law Cairns	6.2km, east	All 9 lights	Medium	Adverse
VP7: Thirlestane Castle GDL, Southern Upland Way	7.2km, south	6 lights (T1, T3, T13, T15, T17 and T19)	Medium-small	Adverse
VP8: B368 North-East Soutra Aisle	8.7km, west	All 9 lights	Small	Adverse
VP9: Minor Road to Longformacus	9.3km, east	6 lights (T3, T6, T8, T11, T13 and T17)	Small	Adverse
VP19: Southern Upland Way, Edgarhope Wood	5.6km, south	8 lights (T1, T3, T6, T8, T11, T13, T15 and T17)	Medium-small	Adverse
VP20: Corepaths west of Oxton	6.0km, south-west	All 9 lights	Medium	Adverse
VP21: Redstone Rig	7.0km, north	1 turbine (T11)	Small-negligible	Neutral
VP22: Lauder Common	10.0km, south-west	All 9 lights	Small	Adverse
VP23: A68 near The Roan	9.6km, south	3 turbines (T1, T17 and T19)	Negligible	Neutral
VP24: Southern Upland Way, Chester Hill	7.9km, south	All 9 lights	Medium-small	Adverse
VP25: B6456 near A697 Junction	8.8km, south	All 9 lights	Small	Neutral
VP30: A198 at Dirleton	25.8km, north	3 turbines (T3, T11 and T13)	Negligible	Neutral

6.6.226 Each of the viewpoints is a 'sample' of the potential effects, representing a wide range of receptors – including not only those actually at the viewpoint, but also those nearby, at a similar distance and/or direction.

6.6.227 From these viewpoints it can be seen that:

- The extent of Large and Large-Medium scale visual effects, where the proposed aviation lights will form a major new element in the view will predominantly be limited to area immediately around the site up to approximately 2.5-4km from the proposed development, where there are open views looking directly at the site and there is little intervening vegetation or topography to reduce the scale of effects.
- Beyond this area effects will generally be Medium to Medium-Small due to a combination of the distance, screening effects of landform and other light sources within the night time environment; this will reduce to Small to Small-Negligible by beyond approximately 8.5km.
- Effects of greater than Negligible scale are unlikely to occur beyond approximately 11km.

Visual Receptor Groups

6.6.228 As indicated within **Technical Appendix 6.1**, residents and visitors within settlements with lighting are assessed to be of Medium sensitivity; users of local roads at night are assumed to be driving and of Medium-Low sensitivity and main road users are considered to be of Low sensitivity. Effects on private residential visual amenity are considered in Technical Appendix 6.3. The following visual receptor groups are located within the 15km study area for the assessment of night time effects.

Lammermuir Hills around the site (includes site)

6.6.229 Viewpoints 1, 4, 6, 9 and 19 (**Figures 6.13, 6.16, 6.18, 6.21** and **6.31**) lie within this area. A night photomontage is provided for Viewpoint 9 (**Figure 6.21**). Most of the other viewpoints are located in areas where receptors are unlikely to visit outside of daylight hours.

6.6.230 As set out above and within **Technical Appendix 6.4**, effects will be Large for views closest to the site, reducing to Medium and then Small with distance. Receptors within this group will mainly be travelling on minor roads, where the focus will be on driving, or local residents in unlit locations as they enter or exit their properties. Effects will arise across a Wide extent of this Medium sensitivity receptor group. These effects will be of High-medium magnitude, Moderate significance (not significant) and Adverse.

Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw (2.0km, south-west)

6.6.231 This receptor group follows the road corridors of the A68 and A697 from Soutra Hill to Ravenswood Roundabout (A68) and the minor settlement of Greenlaw (A697). Viewpoints 2, 3, 5, 7, 23 and 25 (**Figures 6.14, 6.15, 6.19, 6.35** and **6.37**) lie within this receptor group. Night photomontage are provided for Viewpoints 2 (**Figure 6.14**), 3 (**Figure 6.15**), 5 (**Figure 6.17**) and 7 (**Figure 6.19**). The settlements of Oxton and Lauder are sources of existing lighting within this receptor group, as shown on **Figure 6.11**. Although the main roads are not lit, traffic along the roads also creates night time lighting.

6.6.232 Within much of this receptor group, visibility will be of a maximum of six wind turbine lights, with the landform to the east frequently screening the remainder of the lights from view. Effects from much of this receptor group will be of Medium-small scale, as a result and as described in **Technical Appendix 6.4**.

6.6.233 Effects will occur for an Intermediate extent of this Medium sensitivity receptor group, giving rise to effects that will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

Recreational landscapes, minor roads and settlements west of the site (4.2km, west)

6.6.234 Viewpoints 8, 20, 22 and 24 (**Figures 6.21, 6.32, 6.34** and **6.36**) lie within this receptor group. This receptor group is predominantly a rural recreational landscape and as such these viewpoints are located in areas where receptors are unlikely to visit outside of daylight hours. The main receptors within this group will be users of minor roads, whose primary focus will be on the road. However, there are also recreational spaces after dark.

6.6.235 The scale of effects will be Medium in areas closest to the site, west of Oxton, where users are on elevated ground looking across the valley towards the proposed development. These views will be over the lit settlements of Oxton and Lauder, and vehicles along the A68. The scale of effects will reduce to Medium-small and small with distance from the site.

6.6.236 On balance, Medium scale effects will occur across a Localised extent of the Medium sensitivity receptor group. These effects will be of Medium magnitude, Moderate (not significant) and Adverse.

Minor roads, residents and recreational landscapes east of the Lammermuir Hills (5.3km, east)

6.6.237 Viewpoint 26 (**Figure 6.38**) represents the view when travelling towards the site along the B6456, just outside the study area for the night time assessment. As shown by **Figure 6.11**, there are limited existing sources of light within this receptor group, with the exception of some lighting in the small settlements and traffic travelling along the roads. Much of the receptor area is unlikely to be heavily used at night as it is a remote rural landscape.

6.6.238 Within much of this receptor group, visibility will be of a maximum of six wind turbine lights, with the landform to the west and north west frequently screening the remainder of the lights from view. Effects from much of this receptor group will be of Medium-small to Small scale, as a result.

6.6.239 Effects will occur for a Localised extent of this Medium sensitivity receptor group, giving rise to effects that will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

Recreational landscapes, minor roads and settlements south of the site (8.1km, south)

6.6.240 Viewpoint 10 (**Figure 6.22**) is located between Gordon and East Gordon on the A6105 within this receptor group, just beyond the 15km study area for the night time assessment. Settlements on the periphery of this receptor group provide localised sources of light within the night time environment, along with traffic on the main roads. Much of the receptor area is unlikely to be heavily used at night as it is a remote rural landscape.

6.6.241 Within much of this receptor group, visibility of the wind turbine lighting would be intermittent. All of the wind turbine lights would be visible, at a distance, from areas of higher ground, with numbers of wind turbines potentially visible reducing rapidly away from these elevated locations. Effects from much of this receptor group will be of Small scale, as a result of the distance from the proposed development.

6.6.242 Effects will occur for a Localised extent of this Medium sensitivity receptor group, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

Semi-rural recreational landscapes, minor roads and minor settlements north of the Lammermuir Hills (7.5km, north)

6.6.243 This receptor group encompasses the area to the north of the Lammermuir Hills and Fala Moor and south of Dalkeith, Tranent and East Linton. Viewpoint 28 (**Figure 6.40**) lies within this group. **Figure 6.12** indicates there would be almost no visibility of the proposed wind turbine lighting from within this receptor group. Consequently, night time effects on receptors would be no greater than Negligible.

Semi-rural recreational landscapes, minor roads and minor settlements north of the Moorfoot Hills (14.6km, west)

6.6.244 This receptor group encompasses recreational users, residents and users of roads in the area north of the Moorfoot Hills, west of Gorebridge, and south of Bonnyrigg and Penicuik. **Figure 6.12** indicates there would be little to no visibility of the proposed wind turbine lighting from within this receptor group. Consequently, night time effects on receptors would be no greater than Negligible.

Road and Rail

6.6.245 Night time effects on main road will be Negligible due to the limited visibility of the proposed development and the proximity of other lighting within the night time environment, combined with the focus on driving for users of road routes.

Long Distance Routes

Southern Upland Way (3.4km, south-east)

6.6.246 Although the Southern Upland Way passes through areas where wind turbine lighting is likely to be visible, mainly to the south east of the site, use of the route at night is likely to be very limited as a result of its unlit route through rural areas. Where the route passes through more urban areas, these have been assessed within the visual receptor groups above.

National, Regional and Local Cycle Routes

6.6.247 No cycle routes lie within the 15km night study area that are likely to have visibility of the proposed development.

Designated Landscapes

6.6.248 There are no Dark Sky Parks or Discovery sites (locally popular star gazing sites nominated by local groups) within the study area. The Northumberland Dark Sky Park is located approximately 37km to the south-east of the site at its closest point and beyond the area likely to experience anything more than Negligible effects.

6.6.249 The following designations lie within the study area:

National Scenic Areas (NSA)

Eildon and Leaderfoot NSA (17.2km, south-west)

6.6.250 At 17.2km from the closest wind turbine, this NSA lies beyond the area likely to experience anything more than Negligible effects.

Regional Parks

Pentland Hills Regional Park (30.5km, north-west)

6.6.251 At 30.5km from the closest wind turbine, this Regional Park lies beyond the area likely to experience anything more than Negligible effects.

Local Landscape Areas (LLAs)

6.6.252 Midlothian LLA2 Fala Moor (9.5km, north-west), East Lothian LLA12 Bolton (12.4km, north) and East Lothian LLA22 Samuelston (14.4km, north) were assessed in relation to the operational daytime effects of the proposed development. However, given their distance from the proposed development, the judgements reached in relation to daytime effects and the limited visibility shown on the night time ZTV at **Figure 6.12**, effects would be no greater than Negligible for these LLAs.

Scottish Borders LLA6 Lammermuir Hills (includes site)

6.6.253 Viewpoints 1, 5, 6, 9 and 19 (**Figures 6.13, 6.17, 6.18, 6.21** and **6.31**) are located within this LLA. Night time photomontages are provided for Viewpoints 5 (**Figure 6.17**) and 9 (**Figure 6.21**). Most of the other viewpoints are located in areas where receptors are unlikely to visit outside of daylight hours.

6.6.254 Effects on this High-medium sensitivity designation will be as described across the LCTs that it covers, these are primarily LCT90 and parts of 91, 105 and 115. This will result in Large scale effects in the area immediately around the site. Effects would reduce to Medium-small to Small scale between 6-10km to the west and Small scale 10-15km to the east.

6.6.255 Large scale effects will occur across a Localised extent of this LLA. Effects will be of High magnitude, Major-moderate significance (significant) and Adverse.

East Lothian LLA1 Lammermuir Moorland (2.3km, north)

6.6.256 Viewpoint 21 (**Figure 6.33**) is located within this LLA. Effects on this High-Medium sensitivity designation will be as described across the LCT that it covers, which is LCT 266.

6.6.257 Effects will be of Medium-small scale along the south western edge of this LLA, reducing to Negligible scale across much of the remainder of the LLA. These Medium-small effects will occur across a Localised extent of the LCT and will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

Gardens and Designed Landscapes (GDLs)

6.6.258 Of the GDLs assessed in relation to the operational daytime effects of the proposed development, only Thirlestane Castle GDL is shown to have any visibility on the night time ZTV at **Figure 6.12**.

Thirlestane Castle GDL (4.6km, south).

6.6.259 Views from the grounds of Thirlestane Castle are represented by Viewpoint 7 (**Figure 6.19**), which is also provided as a night time photomontage, and views from inside the Castle are represented by Heritage Viewpoint H6 (**Figure 7.10**). At night, much of the south west boundary of the GDL is influenced by existing lighting within Lauder.

6.6.260 The night time ZTV (**Figure 6.12**) indicates that from the majority of the GDL with potential visibility, a maximum of six wind turbine lights would be visible, with large areas where a maximum of three wind turbine lights would be visible. Views of the proposed development from inside the Castle and areas immediately adjacent to the building are unlikely to occur due to the dense belt of woodland directly to the east.

6.6.261 GDLs are assessed to be of High-Medium sensitivity during both the day and at night. Medium-small scale effects from the proposed lighting will occur across an Intermediate extent of this GDL, giving rise to effects that will be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

6.7 Mitigation

6.7.1 Mitigation measures relevant to this chapter are embedded within the design of the proposed development. Landscape and visual impacts have been considered at each stage of the design process to create a layout that minimises effects.

6.7.2 Further detail of the design evolution can be found within **Chapter 2** of this EIA Report.

6.7.3 Of particular relevance to this chapter is the lighting mitigation which has been designed to minimise night-time effects, the following measure are incorporated within the design:

- reduced lighting intensities during good meteorological visibility i.e. from 2000cd to 200cd when visibility is greater than 5km;
- reduced lighting intensities for receptors below the horizontal;
- a periphery only lighting scheme that reduces the number of lit wind turbines from 19 to nine; and
- the removal of intermediate lighting from the wind turbine towers, such that the lit wind turbines will only have one light on the nacelle of the wind turbine.

6.8 Assessment of Residual Effects

6.8.1 Embedded (primary) mitigation has been considered in the assessment of effects above. As there are no secondary or tertiary mitigation measures relevant to this assessment, residual effects will be the same as those identified above.

6.9 Assessment of Cumulative Effects

Introduction

6.9.2 Cumulative effects are assessed on the same groups of landscape and visual receptors as the assessment for the proposed development. Landscape and visual receptors that are considered to receive effects of Low-Negligible or Negligible magnitude (both localised and overall) from the proposed development are not included in this assessment, as an effect of such low magnitude manifestly adds nothing or very little regardless of the effects of other developments. If significant cumulative effects arise on those receptors, they would be as a result of other developments and as such are not relevant for consideration as part of this application.

6.9.3 As indicated in the methodology section, the study area and scope for potential cumulative effects of the proposed development includes proposed wind turbine developments located within 35km. The scope for potential cumulative effects of the proposed development could arise from the wind farms identified in **Table 6.12**.

Table 6.12: Cumulative Sites

Wind farm	Number of wind turbines	Maximum tip height (m)	Status
	Within 5km		
Fallago Rig	48	7no. @ 110m 41no. @ 125m	Operational
Ditcher Law	9	200m	Application
Dunside	15	220m	Application
	Within 5-15km		
Dun Law I	26	68m	Operational
Dun Law II	35	75m	Operational
Keith Hill	5	76m	Operational
Pogbie	6	76m	Operational
Pogbie II	6	74m	Operational
Toddleburn	12	125m	Operational
Crystal Rig I/Ia	25	100m	Operational
Crystal Rig II/IIa	60	36no. @ 110m 24no. @ 125m	Operational
Crystal Rig III	6	4no. @ 100m 2no. @ 110m	Operational
Longpark	19	100m	Operational

Wind farm	Number of wind turbines	Maximum tip height (m)	Status
Crystal Rig IV	11	4no. @ 200m 4no. @ 149.9m 3no. @ 174.5m	Consented
Greystone Knowe	14	180m	Application
Wull Muir	8	149.9m	Application
Newlands Hill	17	2 @ 180m 15 @200m	Scoping
	Within 15-25km		
Aikengall I	16	125m	Operational
Aikengall II	19	145m	Operational
Aikengall IIa	19	145m	Operational
Black Hill	22	78m	Operational
Carcant	3	107m	Operational
Hoprigshiels	3	115m	Operational
Ferneylea	2	71m	Operational
Quixwood	13	10no. @ 115m 3no. @ 100m	Operational
Bowbeat	24	80m	Operational
Brockholes	3	79m	Operational
Scawd Law	8	180m	Application
Blackburn	4	149.9m	Application
Lees Hill	7	200m	Scoping
Torfichen	19	180m	Scoping
Monashee	4	200m	Scoping
	Within 25-35km		
Penmanshiel	14	100m	Operational
Howpark	8	100m	Operational
Drone Hill	22	76m	Operational
Cloich Variation	12	149.9m	Application
Leithenwater	13	200m	Scoping

6.9.4 The locations and numbers of wind turbines within these proposed developments are illustrated on Figure 6.8 and the baseline panorama visualisations for each viewpoint.

Assessment Scenarios and Approach

6.9.5 As set out within the methodology, operational and consented wind farms are included as part of the baseline for the assessment and are considered within the main assessment of effects above. Potential cumulative effects with other applications in planning are considered below.

6.9.6 Applications in planning that are relevant to consider within this assessment are:

- Ditcher Law – a proposal for 9no. 200m tall wind turbines located approximately 2.6km to the north-east of the closest proposed wind turbine;
- Dunside – a proposals for 15no. 220m tall wind turbines located approximately 2.9km to the west of the closest proposed wind turbine;
- Greystone Knowe – a proposals for 14no. 180m tall wind turbines located approximately 13.7km to the south-west of the closest proposed wind turbine;
- Wull Muir – a proposals for 8no. 149.9m tall wind turbines located approximately 14.8km to the west of the closest proposed wind turbine;
- Scawd Law – a proposals for 8no. 180m wind turbines located approximately 20.3km to the south-west of the closest proposed wind turbine;
- Blackburn – a proposals for 4no. 149.9m wind turbines located approximately 21.4km to the north-east of the closest proposed wind turbine; and
- Cloich Variation – a proposals for 12no. 149.9m wind turbines located approximately 33.3km to the southwest of the closest proposed wind turbine.

6.9.7 Whilst schemes in Scoping have been shown on Figure 6.8, they have not been considered as part of the cumulative assessment due to the level of uncertainty associated with the proposals and the lack of reliable information available with respect to the scheme design.

6.9.8 **Figure 6.9** illustrates the theoretical visibility of operational and consented schemes, with the theoretical visibility of the proposed development shown in blue, theoretical visibility of Fallago Rig Wind Farm shown in purple, theoretical visibility of the operational schemes to the west (Dun Law I & II, Pogbie I & II, Keith Hill and Toddleburn) shown in yellow and locations with theoretical visibility of the remaining more distant operational or consented schemes shown in grey. The diagram in the key for **Figure 6.9** illustrates the colour combinations where visibility of the operational and consented schemes overlaps. This demonstrates the scenario considered in **Section 6.6**, with the existing and consented wind farms forming part of the assessment baseline. It demonstrates that to the north-west of the site, the proposed development will predominantly be seen with Fallago Rig and sometimes in combination with the group of wind turbines at Crystal Rig and Aikengall. To the north-west and west of the site there will be localised areas where the proposed development will be seen in combination with the operational schemes to the west. From the lowland plain to the north of the site, there will be areas where the proposed development will be seen on top of the Lammermuir Hills as part of the existing spread of wind turbines on the skyline. In much of the east, south and west of the study area, the existing groups of turbines located in the more distant eastern and western extents of the study area will continue to be the more prominent wind turbine developments.

6.9.9 **Figure 6.10** illustrates the theoretical visibility of schemes in planning. These have in part been grouped into clusters that are likely to result in similar landscape and visual effects. due to similarities in their distance and orientation from the site. The groupings are:

- Dunside to the east;
- Ditcher Law to the west; and
- Proposed wind farms beyond 8km to the west: Wull Muir, Greystone Knowe & Scawd Law.

6.9.10 The two remaining schemes in planning have been excluded from detailed assessment as they are located in areas where existing wind turbine developments already exert a visual influence, such as Blackburn providing a minor extension to Quixwood and Cloich Variation being located beyond the existing Bowbeat Wind Farm.

6.9.11 **Figure 6.10** illustrates that as with the pattern of theoretical visibility for the proposed development and the existing/consented schemes, there will be a split in visibility in the areas to the east and west of the site. To the east, visibility will be predominantly of the proposed development and Dunside, largely from those areas where Fallago Rig is currently already visible. To the west, visibility will be predominantly of the proposed development and Ditcher Law, largely from those areas where the group of operational schemes to the west (Dun Law I & II, Pogbie I & II, Keith Hill and Toddleburn) are currently visible.

6.9.12 To the north, smaller areas of the lowland plain will have visibility of the proposed development with the other proposed schemes in planning than will have visibility of the proposed development with the existing wind farms. Throughout the majority of the study area, visibility will remain similar to the existing pattern of wind farm visibility.

Cumulative Effects on Landscape Character

6.9.13 The following landscape character types, which are shown on **Figure 6.3**, are judged to receive Low magnitude or greater effects (locally or overall) as a result of the proposed development, and are therefore assessed for cumulative effects:

- LCT90 – Dissected Plateau Moorland;
- LCT115 – Upland Valley with Mixed Farmland;
- LCT91 – Plateau Grassland – Borders;
- LCT99 – Rolling Farmland – Borders;
- LCT103 – Undulating Upland Fringe;
- LCT115 – Upland Valley with Mixed Farmland;
- LCT105 – Upland Fringe Moorland with Hills; and
- LCT108 – Lowland Margin.

LCT90 – Dissected Plateau Moorland (includes site)

6.9.14 Viewpoints 1, 6 and 9 (**Figure 6.13, 6.18** and **6.21**) lie within this LCT. The LCT is judged to be of Medium sensitivity.

6.9.15 As indicated by Figure 6.10, within the east of this LCT effects will predominantly be as a result of visibility of the proposed development and Dunside, which will also be located within the LCT. In the west of the LCT, there will be some areas with visibility of Ditcher Law beyond the western boundary of the LCT. Within these areas, there are generally existing operational wind farms present, with Fallago Rig present within the LCT to the east of the site.

6.9.16 Cumulative effects of Large to Large-medium-scale within the LCT will extend to cover an Intermediate extent of this LCT if all of the cumulative schemes were constructed. These effects will be of High Magnitude, Major-moderate significance (significant) and Adverse.

LCT115 – Upland Valley with Mixed Farmland (includes site)

6.9.17 Viewpoints 2, 4, 7 and 24 (**Figures 6.14, 6.16, 6.19** and **6.36**) lie within this LCT. It is judged to be of Medium sensitivity.

6.9.18 None of the schemes currently in planning would be located within this LCT. As indicated by Figure 6.10, a central strip of this LCT will experience potential visibility of the proposed development in combination with Ditcher Law, with the east facing slopes additionally having visibility of Dunside and the west facing slopes additionally having visibility of the wind farms in planning to the west. All of these areas have existing views of the operational wind farms at either Fallago Rig or the group to the west (Dun Law I & II, Pogbie I & II, Keith Hill and Toddleburn). Ditcher Law will be located closer to this LCT than any of the operational wind farms.

6.9.19 Cumulative effects of Medium to Medium-small scale will extend into the north of LCT115 if all of the cumulative schemes were constructed, predominantly as a result of the proximity of Ditcher Law. These effects will occur across an Intermediate extent of the LCT and be of Medium to Medium-low Magnitude, Moderate significance (not significant) and Adverse.

LCT91 – Plateau Grassland – Borders (2.3km, west)

6.9.20 Viewpoints 5, 8, 20 and 22 (**Figures 6.17, 6.20, 6.32** and **6.34**) lie within this LCT. This LCT is judged to be of Medium-low sensitivity.

6.9.21 The proposed Ditcher Law Wind Farm is located within this LCT. As indicated by **Figure 6.10**, the east of this LCT will experience potential visibility of the proposed development in combination with Ditcher Law. In the west of the LCT, the group of wind turbine schemes in planning to the south west of the site (Wull Muir, Greystone Knowe and Scawd Law) will be visible, but not in combination with the proposed development. There will be isolated patches within this LCT where the proposed development will be visible with all of the schemes in planning. The majority of this LCT currently has visibility of operational wind farms.

6.9.22 Cumulative effects of Large scale within the LCT will occur in the north west of LCT91 if all of the cumulative schemes were constructed, predominantly as a result of the location of Ditcher Law within the LCT. These effects will occur across a Localised extent of the LCT and be of High Magnitude, Moderate significance (not significant) and Adverse.

LCT99 – Rolling Farmland – Borders (3.8km, south)

6.9.23 Viewpoints 19 and 25 (**Figures 6.31** and **6.37**) are located within this character type. It is judged to be of Medium sensitivity.

6.9.24 None of the schemes currently in planning would be located within this LCT. With the exception of the western edge of this LCT, as indicated by Figure 6.10, much of the potential visibility of wind farms in planning within this LCT will relate to the influence of Dunside, in combination with the proposed development or the group of proposed wind farms to the south west of the site. Long the western edge of the LCT, on west facing slopes, Dunside will not be visible, but Ditcher Law and the proposed development are likely to be visible. Much of this LCT has existing views of the operational wind farms at Fallago Rig and the more distant operational schemes out to the east. Dunside will be located closer to this LCT than any of the operational wind farms.

6.9.25 Cumulative effects of Medium scale within the LCT will extend into the north of LCT99 if all of the cumulative schemes were constructed, predominantly as a result of the proximity of Dunside. These effects will occur across a Localised extent of the LCT and be of Medium to Medium-Low Magnitude, Moderate significance (not significant) and Adverse.

LCT103 – Undulating Upland Fringe (7.6km, south)

6.9.26 Viewpoint 24 (**Figure 6.36**) is located just outwith this character type but provides representative views from the northern end of the LCT. It is judged to be of Medium sensitivity.

6.9.27 None of the schemes currently in planning would be located within this LCT. Similarly to LCT115, as indicated by **Figure 6.10**, the west facing slopes of this LCT will experience potential visibility of the proposed development in combination with Ditcher Law and some visibility of the wind farms in planning to the west. The western half of the LCT will have decreasing visibility of any of the proposed wind farms in planning. All of the areas in the east of the LCT have existing views of the operational wind farms at either Fallago Rig or the group to the west (Dun Law I & II, Pogbie I & II, Keith Hill and Toddleburn), with areas in the west of the LCT additionally having visibility of Longpark Wind Farm, which is the closest existing or proposed wind farm to LCT103.

6.9.28 Cumulative effects of Small scale will continue in the northern end of this LCT if all of the cumulative schemes were constructed, given the distance of the wind farms in planning from the boundary of the LCT. Small scale effects will occur across a Localised extent of this LCT, giving rise to effects that will remain of Low magnitude, Slight significance (not significant) and Adverse.

LCT115 – Upland Valley with Mixed Farmland (8.3km, east)

6.9.29 The LCT is judged to be of High-medium sensitivity.

6.9.30 None of the schemes currently in planning would be located within this LCT. As indicated by **Figure 6.10**, the eastern and western edges of this LCT will have visibility of Dunside and the highest areas of the LCT will have visibility in combination with the proposed development. All of these areas have existing views of the operational wind farms at Fallago Rig or the group to the east at Crystal Rig and Aikengall, which will remain the closest wind farm developments.

6.9.31 Small scale cumulative effects will continue across a localised extent of this LCT, giving rise to effects that will be of Low magnitude, Slight significance (not significant) and Adverse.

LCT105 – Upland Fringe Moorland with Hills (9.8km, east)

6.9.32 Viewpoint 26 (**Figure 6.38**) lies within this LCT. It is judged to be of Medium-low sensitivity.

6.9.33 None of the schemes currently in planning would be located within this LCT. As indicated by **Figure 6.10**, much of this LCT will experience potential visibility of the proposed development in combination with Dunside, with some areas of higher ground additionally having visibility of the wind farms in planning to the west (notably Scawd Law and Greystone Knowe). Isolated areas in the south east of the LCT will also potentially have visibility of Dunside. All of these areas have existing views of the operational wind farms at either Fallago Rig, Black Hill or the group to the east at Crystal Rig and Aikengall. Black Hill will remain the closest wind farm to this LCT, with Dunside located closer to this LCT than the proposed development.

6.9.34 Cumulative effects of Medium-small scale will extend into the north west of LCT105 if all of the cumulative schemes were constructed, predominantly as a result of the proximity of Dunside. These effects will occur across an Intermediate extent of the LCT and be of Medium to Medium-low Magnitude, Slight significance (not significant) and Adverse.

LCT108 – Lowland Margin (13.2km south-east)

6.9.35 Viewpoint 10 (Figure 6.22) is located within the centre of the LCT, which is judged to be of Medium sensitivity.

6.9.36 None of the schemes currently in planning would be located within this LCT. As indicated by **Figure 6.10**, visibility of wind farms in planning will be relatively widespread across this LCT, with Dunside having the greatest visual influence on the LCT. The proposed developments in planning will be perceived as minor elements on the distant hills, due to the visual separation. The majority of the LCT already has existing views of the operational wind farms at either Fallago Rig Black Hill or the group to the east at Crystal Rig and Aikengall.

6.9.37 Cumulative effects of Medium-small to Small scale will occur across an Intermediate extent of this LCT if all of the cumulative schemes were constructed. These effects will be of Medium to Medium-low to Low Magnitude, Slight significance (not significant) and Adverse.

Cumulative Visual Effects

6.9.38 The assessment considers two types of cumulative visual effect, namely effects arising from combined and sequential views. This is in accordance with the NatureScot Guidance 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (March 2021)[45]. These comprise:

- Combined views which 'occur where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be in combination (where several wind farms are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms)'; and
- Sequential views which 'occur when the observer has to move to another viewpoint to see different developments.'

6.9.39 This section assesses the anticipated cumulative visual effects arising from the proposal in combination with the existing and approved wind developments, and the proposed wind developments. The main linear routes that share combined intervisibility in the study area are then summarised to anticipate the likely sequential views.

Visual Aids

6.9.40 The baseline panoramas and wirelines shown on **Figures 6.13-6.42** include cumulative schemes. A detailed description of the methods by which the wirelines and photomontages are prepared is included in **Technical Appendix 6.1**. The visualisations are numbered according to the viewpoint that they show (e.g. VP_01 for Viewpoint 1), with a suffix indicating the type of visualisation (BP – baseline panorama and wireline (including cumulative schemes), WL – wireline, PM – photomontage, NP – night photomontage.

6.9.41 The viewpoint description, description of effects and scale of effect for each viewpoint, including cumulatively (refer to Figure 5.6 and 5.7 for locations) is set out within **Technical Appendix 6.4**.

6.9.42 Each of the viewpoints is a 'sample' of the potential effects, representing a wide range of receptors – including not only those actually at the viewpoint, but also those nearby, at a similar distance and/or direction.

6.9.43 From these viewpoints it can be seen that the proposed development will generally be seen as a group with Fallago Rig Wind Farm. In views from the north, the proposed development will often be seen on the ridgeline of the Lammermuir Hills as part of a series of groups of other existing and proposed wind farms on the higher ground. From the east and west, the landform influences the visibility of the existing and proposed wind farms, with areas of higher ground likely to have greater visibility of clusters of wind turbines. The proposed development will frequently be seen as a central part of the cluster around Fallago Rig with distance from the site.

[45] (2021). Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments. NatureScot.

Visual Receptor Groups

6.9.44 The following visual receptor groups are judged to receive Low magnitude or greater effects (locally or overall) as a result of the proposed development, and are therefore assessed for cumulative effects:

- Lammermuir Hills around the site;
- Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw;
- Recreational landscapes, minor roads and settlements west of the site;
- Minor roads, residents and recreational landscapes east of the Lammermuir Hills; and
- Recreational landscapes, minor roads and settlements south of the site.

Lammermuir Hills around the site (includes site)

6.9.45 Viewpoints 1, 4, 6, 9 and 19 (**Figures 6.13, 6.16, 6.18, 6.21** and **6.31**) lie within this area.

6.9.46 As set out in the viewpoint descriptions in **Technical Appendix 6.4**, effects across much of this receptor group will be experienced as a result of the in combination effects of Dunside and Ditcher Law with the proposed development, with the other schemes in planning to the south west visible as more distant features from areas of higher ground. Whilst there will be increased visibility of wind farms within this receptor group if all of the schemes in planning were to come forward, the pattern of visibility across the receptor group will remain broadly comparable to that for the proposed development alone, with each of the cumulative schemes providing localised areas of Large scale visual effects. Overall cumulative effects will arise across a Wide extent of this High-Medium sensitivity receptor group and will remain of High-Medium magnitude, Major significance (significant) and Adverse.

Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw (2.0km, south-west)

6.9.47 Viewpoints 2, 3, 5, 7, 23 and 25 (**Figures 6.14, 6.15, 6.19, 6.35** and **6.37**) lie within this receptor group.

6.9.48 As set out in the viewpoint descriptions in **Technical Appendix 6.4**, effects across much of this receptor group will be experienced as a result of the in combination effects of Ditcher Law with the proposed development. Dunside becomes visible from some locations to the south, such as Viewpoint 25 (**Figure 6.37**), and for some areas within the receptor group there will be no cumulative visual effects experienced. Ditcher Law will be located closer to the receptor group than any of the other schemes in planning, but visibility will generally include views of the operational wind farms at Dun Law I & II, Pogbie I & II, Keith Hill and Toddleburn. Effects will range from Negligible within the more enclosed areas around Oxton and Lauder to Large in the area around the Dun Law wind farms where it is already possible to feel like the viewer is located within a wind farm landscape. Large scale cumulative effects will arise across a Localised extent of this High-Medium sensitivity receptor group and will be of High magnitude, Major-Moderate significance (significant) and Adverse.

Recreational landscapes, minor roads and settlements west of the site (4.2km, west)

6.9.49 Viewpoints 8, 20, 22 and 24 (**Figures 6.21, 6.32, 6.34** and **6.36**) lie within the receptor group. In combination cumulative effects will arise within this receptor group with Ditcher Law and Dunside Wind Farms. As set out within **Technical Appendix 6.4**, the majority of in combination effects will arise from Ditcher Law Wind Farm, given its closer proximity. The scale of cumulative effects will increase Large-medium in areas to the south-west of the site, where users are on elevated ground looking across the valley towards the proposed development (see VPs 20, 22 and 24). These cumulative effects will arise across a Localised extent of this High-Medium sensitivity receptor group and will be of High-medium magnitude, Major-Moderate significance (significant) and Adverse.

Minor roads, residents and recreational landscapes east of the Lammermuir Hills (5.3km, east)

6.9.50 Viewpoint 26 (**Figure 6.38**) represents the view when travelling towards the site along the B6456.

6.9.51 As set out in the viewpoint descriptions in **Technical Appendix 6.4**, cumulative effects across much of this receptor group will occur in combination with Dunside Wind Farm. The proposed wind farms will be located to either side of a conical hill and will be perceived to be a similar height to the landform. On balance, visual effects will increase to Medium scale across an Intermediate extent of the High-Medium sensitivity receptor group. These effects will increase to Medium magnitude, but remain Moderate (not significant) and Adverse.

Recreational landscapes, minor roads and settlements south of the site (8.1km, south)

6.9.52 Viewpoint 10 (Figure 6.22) is located between Gordon and East Gordon on the A6105 within this receptor group.

6.9.53 As set out within **Technical Appendix 6.4**, Dunside and Ditcher Law Wind Farms are likely to be visible from parts of this receptor group. However, landform and vegetation across this area will reduce visibility of the wind farms in planning and it is unlikely that the full extent of these schemes will be visible. At worst, Medium-Small scale effects will continue to occur across an Intermediate extent of this High-Medium sensitivity receptor group. These effects will be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Road and Rail

A697 (3.0km, south)

6.9.54 Ditcher Law will be visible from stretches of this road when travelling north west. Where it is visible, views will be directed along the road towards these proposed wind turbines. The majority of the other wind farms in planning will not be visible from this route, and views of the proposed development will remain as described in relation to the proposed development alone. The addition of the proposed Ditcher Law wind turbines will increase the scale of effects at the northern end of the route. However, overall Medium scale effects will continue to be experienced along an Intermediate extent of the route. These effects will be of Medium magnitude, Slight significance (not significant) and Adverse.

A68 (3.3km, west)

6.9.55 As described in relation to the assessment of the visual effects of the proposed development alone, visibility along this route will vary greatly. In the north of the route, where the existing wind farms of Keith Hill, Pogbie I & II and Dun Law I and II adjacent to the A68 are visible, Ditcher Law will become a prominent new wind farm within views, in font of the proposed development, as shown by Viewpoint 5 (**Figure 6.17**). Ditcher Law will also be visible when travelling north around Oxton and Lauder, but become an increasingly minor element in views further south.

6.9.56 Drivers using this route will be of Low sensitivity and, at worst, will continue to experience Medium scale effects across a Localised extent of the route and Small scale effects across a Limited extent of the route. These effects will be of Medium magnitude, Slight significance (not significant) and Adverse between Oxton and Lauder and around the existing wind farms at Keith Hill, Pogbie I & II and Dun Law I and II.

A6089 (8.4km, south)

6.9.57 Cumulative visual effects for users of this route are likely occur with Dunside Wind Farm only for the majority of the stretch north of Gordon. The proposed development will be seen in combination with Dunside, which will be at a similar distance from the A6089, extending the spread of wind turbines in the view. Drivers using this route will be of Low sensitivity. Medium scale effects will continue to occur across a Localised extent of this route, mainly at the northern end. Effects will be of Medium magnitude, Slight significance (not significant) and Adverse.

A6105 (13.7km, south)

6.9.58 As set out within **Technical Appendix 6.4**, Dunside and Ditcher Law Wind Farms are likely to be visible from stretches of this road. However, landform and vegetation across this area will reduce visibility of the wind farms in planning and it is unlikely that the full extent of these schemes will be visible. At worst, Medium-Small scale effects will continue to occur across an Intermediate extent of this Low sensitivity receptor. These effects will continue to be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Long Distance Routes

Southern Upland Way (3.4km, south-east)

6.9.59 Viewpoints 6, 7, 19 and 24 (**Figures 6.18, 6.19 6.31** and **6.36**) provide representative views from along the trail. Existing wind farms will continue to be a feature of views from the Southern Upland Way in the vicinity of Lauder, on higher ground between the area south west of Lauder to the area east of Twin Law Cairns near VP6. The proposed Dunside Wind Farm will also be prominent along this stretch of the route, with the other wind farms in planning likely to be visible at a greater distance from high points along the route.

6.9.60 Users of the Southern Upland Way are assessed to be High-medium sensitivity. Large-medium scale effects on users of this route will extend to within 5km of both the proposed development and Dunside Wind Farm, which will be across a Localised extent of the route. These localised effects will be of High-medium magnitude, Major-moderate significance (significant) and Adverse.

National, Regional and Local Cycle Routes

6.9.61 No cycle routes were assessed to experience greater that Low-Negligible magnitude visual effects as a result of the proposed development. Any significant cumulative effects along these routes from wind farms in planning will be as a result of wind farms other than the proposed development and as such are not relevant for consideration as part of this application.

Cumulative Effects on Designated Landscapes

6.9.62 Only the Local Landscape Areas at Scottish Borders LLA6 Lammermuir Hills and East Lothian LLA1 Lammermuir Moorland are judged to receive Low magnitude or greater effects (locally or overall) as a result of the proposal and therefore assessed for cumulative effects. In addition, the Gardens and Designed Landscapes at Thirlestane Castle, Mellerstain and Oxenfoord Castle would also experience effects of Low magnitude or greater.

Local Landscape Areas (LLAs)

Scottish Borders LLA6 Lammermuir Hills (includes site)

6.9.63 Viewpoints 1, 5, 6, 9 and 19 (Figures 6.13, 6.17, 6.18, 6.21 and 6.31) are located within this LLA. This designated area is assessed to be of High-medium sensitivity. At present Dun Law I & II, Fallago Rig, Crystal Rig I, II & IV and Aikengall IIa wind farms are located within this LLA. Both the proposed wind farms at Dunside and Ditcher Law will also be located within this LLA. There will be in combination Medium scale effects on this LLA, which will continue to occur across an Intermediate extent. Effects will continue to be of Medium magnitude, Major-Moderate significance (significant) and Adverse.East Lothian LLA1 Lammermuir Moorland (2.3km, north)

6.9.64 This LLA is assessed to be of High-medium landscape sensitivity. All of the proposed wind farms are located outwith this LLA. Dunside Wind Farm will be located closer to the southern boundary of the LLA than the proposed development. Consequently, Dunside will have a localised greater effect on the LLA than the proposed development. Medium-small scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

Gardens and Designed Landscapes (GDLs)

Thirlestane Castle GDL (4.6km, south).

6.9.65 This GDL is represented by Viewpoint 7 (**Figure 6.19**) and views from inside the Castle represented by Heritage Viewpoint H6 (**Figure 7.10**). GDLs are assessed to be of High-Medium sensitivity. The cumulative scheme of Ditcher Law Wind Farm, currently at the application stage, will be located behind the trees within the view and visibility is unlikely to occur beyond very limited views of blade tips. No cumulative effects will arise with any of the proposals at planning stage.

Mellerstain GDL (16.0km, south).

6.9.66 Views of the proposed development in combination with any of the other schemes in planning will be limited to areas of agricultural land within the north of the GDL, outwith the formal parkland, where the proposed development and schemes in planning (particularly Dunside and Ditcher Law) will be clearly visible in mid-distance views amidst other operational wind farms on the Lammermuir Hills.

6.9.67 Medium-Small scale effects will continue to occur across a Localised extent of this High-Medium sensitivity receptor. Cumulative effects will continue to be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Oxenfoord Castle GDL (16.9km, north-west).

6.9.68 The proposed development in combination with the proposed schemes in planning will be visible as a minor element on the distant ridgeline from across the higher ground within this GDL. The parkland trees will partially screen and filter views from across the area.

6.9.69 Small-Negligible scale effects will continue to occur across a Wide extent of this High-Medium sensitivity receptor. Cumulative effects will continue to be of Low magnitude, Slight significance (not significant) and Adverse.

Cumulative Night Time Effects

6.9.70 As set out at in the assessment of night-time effects above, medium intensity steady red (2000 candela) lights will be mounted on the nacelles of wind turbines T1, T3, T6, T8, T11, T13, T15, T17 and T19. At present, within the study area only Crystal Rig IV Wind Farm (consented) will include wind turbine lighting on seven of the turbines once construction is complete.

6.9.71 All of the cumulative schemes that are in planning except Wull Muir are over 150m high and will therefore require aviation lighting. The study area for the assessment of effects at night-time remains 15km.

Cumulative Night-time Effects on Landscape Character

6.9.72 The LCTs that will experience increased landscape effects as a result of the proposed development in combination with cumulative schemes are:

- LCT90 – Dissected Plateau Moorland;
- LCT115 – Upland Valley with Mixed Farmland;
- LCT91 – Plateau Grassland – Borders;
- LCT99 – Rolling Farmland – Borders;
- LCT103 – Undulating Upland Fringe;
- LCT105 – Upland Fringe Moorland with Hills; and
- LCT108 – Lowland Margin.

6.9.73 For all of these LCTs, the addition of night time lighting on the proposed wind turbines will be a new feature in generally dark landscapes. The scale, magnitude and significance of cumulative night time effects will therefore be the same as for the cumulative daytime effects on landscape character.

Cumulative Night-time Effects on Visual Receptors

Visual Receptor Groups

6.9.74 The following visual receptor groups are assessed experience increased visual effects as a result of the proposed development in combination with cumulative schemes:

- Lammermuir Hills around the site;
- Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw;
- Recreational landscapes, minor roads and settlements west of the site; and
- Minor roads, residents and recreational landscapes east of the Lammermuir Hills.

Lammermuir Hills around the site (includes site)

6.9.75 As for the visual effect during the day time, effects across much of this receptor group will be experienced as a result of the in combination effects of Dunside and Ditcher Law with the proposed development. There will be increased visibility of wind turbine lighting within this receptor group if all of the schemes in planning were to come forward, but the pattern of turbine lighting visibility across the receptor group will remain broadly comparable to that for the proposed development alone. Overall cumulative effects at night time will arise across a Wide extent of this High-Medium sensitivity receptor group and will remain of High-Medium magnitude, Major significance (significant) and Adverse.

Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw (2.0km, south-west)

6.9.76 As set out in the assessment of day time visual effects, Dunside becomes visible from some locations to the south. Ditcher Law will be located closer to the receptor group than any of the other schemes in planning. Effects will range from Negligible within the more enclosed areas around Oxton and Lauder to Large in the area around the existing unlit Dun Law wind farms. Large scale cumulative effects at night will arise across a Localised extent of this High-Medium sensitivity receptor group and will be of High magnitude, Major-Moderate significance (significant) and Adverse.

Recreational landscapes, minor roads and settlements west of the site (4.2km, west)

6.9.77 In combination cumulative effects will arise within this receptor group with Ditcher Law and Dunside Wind Farms. As set out within **Technical Appendix 6.4**, the majority of in combination effects will arise from Ditcher Law Wind Farm, given its closer proximity. The scale of cumulative effects will increase to Large-medium in areas to the south-west of the site, where users are on elevated ground looking across the valley towards the proposed development, although users at night will be limited. These cumulative night-time effects will arise across a Localised extent of this High-Medium sensitivity receptor group and will be of High-medium magnitude, Major-Moderate significance (significant) and Adverse.

Minor roads, residents and recreational landscapes east of the Lammermuir Hills (5.3km, east)

6.9.78 Cumulative night time effects across much of this receptor group will occur in combination with Dunside Wind Farm. The proposed wind farms will be located to either side of a conical hill and will be perceived to be a similar height to the landform. On balance, night time visual effects will increase to Medium scale across an Intermediate extent of the High-Medium sensitivity receptor group. These effects will increase to Medium magnitude, but remain Moderate (not significant) and Adverse.

Road and Rail

A697 (3.0km, south)

6.9.79 Turbine lighting on Ditcher Law will be visible from stretches of this road when travelling north west. Where the lights are visible, views will be directed along the road towards these proposed wind turbines. Turbine lighting on the majority of the other wind farms in planning will not be visible from this route, and views of the proposed development will remain as described in relation to the proposed development alone. The addition of the proposed Ditcher Law wind turbines will increase the scale of effects at the northern end of the route. However, overall Medium scale effects will continue to be experienced along an Intermediate extent of the route. These effects will be of Medium magnitude, Slight significance (not significant) and Adverse.

A68 (3.3km, west)

6.9.80 As described in relation to the assessment of the visual effects of the proposed development alone, Ditcher Law will become a prominent new wind farm within views, in front of the proposed development. Ditcher Law will also be visible when travelling north around Oxton and Lauder, but become an increasingly minor element in views further south. Cumulative effects at night will be of Medium magnitude, Slight significance (not significant) and Adverse between Oxton and Lauder and around the existing wind farms at Keith Hill, Pogbie I & II and Dun Law I and II.

A6089 (8.4km, south)

6.9.81 Cumulative visual effects for users of this route are likely occur with Dunside Wind Farm only for the majority of the stretch north of Gordon. The lightis on the proposed development will be seen in combination with Dunside, which will be at a similar distance from the A6089, extending the spread of turbines lights in the view. Medium scale effects will continue to occur across a Localised extent of this route, mainly at the northern end. Effects will be of Medium magnitude, Slight significance (not significant) and Adverse.

A6105 (13.7km, south)

6.9.82 Dunside and Ditcher Law Wind Farms are likely to be visible from stretches of this road. However, landform and vegetation across this area will reduce visibility of lighting on the wind farms in planning and it is unlikely that the full extent of these schemes will be visible. At worst, Medium-Small scale effects will continue to occur across an Intermediate extent of this Low sensitivity receptor. These effects will continue to be of Medium-Low magnitude, Moderate significance (not significant) and Adverse.

Long Distance Routes

Southern Upland Way (3.4km, south-east)

6.9.83 Users of the Southern Upland Way at night are likely to be limited. Lighting on the proposed Dunside Wind Farm will be prominent along the stretch of the route with visibility of the proposed development, with lighting on the other wind farms in planning likely to be visible at a greater distance from high points along the route.

6.9.84 Large-medium scale effects on users of this route will extend across a Localised extent of the route. These localised effects will be of High-medium magnitude, Major-moderate significance (significant) and Adverse.

Cumulative Night-time Effects on Designated Landscapes

6.9.85 Of the designated landscapes assessed in the assessment of cumulative effects, only the two Local Landscape Areas are assessed to have potential cumulative effects that would be greater than the effects of the proposed development alone. Night time effects on these two LLAs would be as follows.

Scottish Borders LLA6 Lammermuir Hills (includes site)

6.9.86 Both the proposed wind farms at Dunside and Ditcher Law will also be located within this LLA. There will be in combination Medium scale effects on this LLA, which will continue to occur across an Intermediate extent. Effects will continue to be of Medium magnitude, Major-Moderate significance (significant) and Adverse.East Lothian LLA1 Lammermuir Moorland (2.3km, north)

6.9.87 This LLA is assessed to be of High-medium landscape sensitivity. All of the proposed wind farms are located outwith this LLA. Dunside Wind Farm will be located closer to the southern boundary of the LLA than the proposed development. Consequently, Dunside will have a localised greater effect on the LLA than the proposed development. Medium-small scale effects will occur across an Intermediate extent of this High-Medium sensitivity receptor. Effects will be of Medium-low magnitude, Moderate significance (not significant) and Adverse.

6.10 Summary

Methodology

6.10.2 The assessment method for this LVIA draws upon the established GLVIA3; An Approach to Landscape Character Assessment (Natural England, 2014), Landscape Institute Technical Information Note 05/2017 regarding townscape character; LI Technical Guidance Note 02/2019 Residential Visual amenity assessment (RVAA); Landscape Institute's Technical Guidance Note 02/21: Assessing landscape value outside national designations; LI Technical Guidance Note 06/19 Visual Representation of development proposals and other recognised guidelines.

Baseline

6.10.3 19 landscape character types are located within 15km of the proposed development, within the Zone of Theoretical Visibility (ZTV) study and Zone of Visual Influence (ZVI). Of these, 17 have been identified that require detailed assessment, with the remainder excluded because the Zone of Theoretical Visibility (ZTV) study and site work indicates limited or no visibility.

6.10.4 The different types of groups assessed within this report encompass local residents; people using key routes such as roads; cycle ways, people within accessible or recreational landscapes; people using Public Rights of Way and Core Paths; or people visiting key viewpoints. In dealing with areas of settlement, Public Rights of Way and local roads, receptors are grouped into areas where effects might be expected to be broadly similar, or areas which share particular factors in common.

6.10.5 30 representative viewpoints have been selected to inform the assessment of effects on visual receptors.

Effects on Landscape Character

6.10.6 The findings of the assessment indicate that landscape sensitivity within the study area is variable, ranging from Medium-Low to High-Medium. This is in part due to the presence of landscape designations including the Eildon and Leaderfoot National Scenic Area, the Pentland Hills Regional Park, and Local Landscape Areas.

6.10.7 The proposed development is likely to become the dominant characteristic of the landscape within the site, particularly in the valleys where the sense of being in located within a wind farm will be created. Due to the proximity of the existing Fallago Rig Wind Farm to the east, which already influences landscape character between the wind farm and the proposed development, effects from the proposed development will be reduced in this direction. Beyond these areas and up to approximately 5km from the proposed development, it will become one of the key characteristics, giving the sense of being near a wind farm. As a result, whilst there will be there will be localised Large scale effects on the host Landscape Character Type, LCT90 – Dissected Plateau Moorland, no significant effects are identified on landscape character.

6.10.8 Overall effects on landscape character within the study area will range between High-medium to Negligible magnitude and Moderate to Minimal significance.

Visual Effects

6.10.9 Effects on views will be generally of Large scale within close proximity to the site, up to approximately 4km, and Medium scale up to around 8-10km from the proposed wind farm, and will decrease to Small and Negligible scale beyond these distances from the site boundary.

Effects on Visual Receptor Groups

6.10.10 The proposed development will be prominently visible from parts of the visual receptor group covering the site: Lammermuir Hills around the site. This will give rise to significant visual effects. Other visual receptor groups within the study area will tend to have fewer and more distant views resulting in effects of no greater than Moderate significance.

Effects on Roads and Rail

6.10.11 Views of the proposed development from key road and rail routes through the study area will generally be intermittent. Effects will be of Medium magnitude and Slight Significance for uses of the A697 Boghall/Cleekhimmin Bridge, and from Newbiggins Walls to Hexpathdean Bridge to the east of Houndslow, the A68 and the A6089. There would also be effects of Medium-low magnitude and Slight significance for users of the A6015; Low magnitude and Slight significance for users of the A697 between Cleekhimmin Burn and Newbiggins Walls, and between Hexpathdean Bridge and Greenlaw; Low-negligible magnitude and Minimal significance for users of the A6093; and Negligible effects for users of other main road routes through the study area.

Effects on Long Distance Routes

6.10.12 Views of the proposed development from the Southern Uplands Way will be of Medium-low magnitude and Moderate significance.

Effects on Designated Landscapes

6.10.13 There will be no effects on the Eildon and Leaderfoot National Scenic Area or the Pentland Hills Regional Park that will be incompatible with the designations in landscape and visual terms. Effects on these designations will be Negligible and will not be significant.

6.10.14 There will be localised significant effects on the Lammermuir Hills Local Landscape Area (LLA) within which the site is located, due to direct effect of the proposed development on the LLA and its visibility from much of the designated area. However, the proposed development would not compromise the overall integrity of this LLA. There would also be effects of Low-negligible magnitude and Slight significance on LLA2 Samuelston and Negligible effects other LLAs within the study area.

6.10.15 There will be effects of Medium-low magnitude and Moderate significance on the Thirlestane Castle and the Mellerstain Gardens and Designed Landscapes, from a landscape and visual perspective. For other Gardens and Designed Landscapes within the study area, effects would range from Low to Negligible magnitude and would be of no greater than Slight significance.

Night-time Effects

6.10.16 The night-time effects of the proposed development are assessed within a study area of 15km.

6.10.17 None of the existing wind farms within the study area are currently lit. However, Crystal Rig IV Wind Farm (consented) will include wind turbine lighting on seven of the turbines once construction is complete.

Effects on Landscape Character

6.10.18 Of the seven LCTs located within the study area with potential to experience greater than Negligible effects as a result of the proposed wind turbine lighting, localised significant effects on landscape character at night would be experienced within LCT90 – Dissected Plateau Moorland (includes site) due to introduction of new light sources.

Visual Effects

6.10.19 Of the visual receptors within the 15km study area for night-time effects, many already experience some level of lighting at night due to the presence of roads, settlement and individual residential properties. As a result, significant visual effects at night are not assessed for any of the visual receptors.

Designated Landscapes

6.10.20 There will be localised significant effects on the Scottish Borders LLA6 Lammermuir Hills Local Landscape Area due to introduction of new light sources.

Effects on Residential Properties

6.10.21 The baseline assessment identified a total of 17 residential properties within the 2.5km study area for the residential visual amenity assessment (RVAA). Of these properties, all but five have potential visibility of the proposed development and have been assessed in detail in the RVAA.

6.10.22 Operational effects will vary notably between residential properties due to the number and range of properties within the study area. The three properties with the highest magnitude of change are P1 (The Howe), P2 (Tollishill Farmhouse) and P4 (Soonhope House). Detailed assessment of P1, P2 and P4 reached the same conclusion, and it is deemed that effects on these properties would not meet the Residential Visual Amenity threshold.

6.10.23 The assessment concludes that for all of the properties within the RVAA study area the Residential Visual Amenity threshold will not be reached, and the effects will not be sufficiently “oppressive” or “overbearing” that any property will be rendered an unattractive place in which to live.

Cumulative Effects

6.10.1 Greater effects than for the proposed development alone would arise on the following receptors both during the day at at night, if any of the cumulative schemes and the proposed development were consented, generally due to closer proximity to a number of the cumulative schemes:

- LCT90 – Dissected Plateau Moorland;
- LCT115 – Upland Valley with Mixed Farmland;
- LCT91 – Plateau Grassland – Borders;
- LCT99 – Rolling Farmland – Borders;
- LCT103 – Undulating Upland Fringe;
- LCT105 – Upland Fringe Moorland with Hills;
- LCT108 – Lowland Margin;

- Lammermuir Hills around the site;
- Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw;
- Recreational landscapes, minor roads and settlements west of the site;
- Minor roads, residents and recreational landscapes east of the Lammermuir Hills;
- Distant roads and residents in the low-land of Carlisle visual receptor group;
- Distant roads and residents along the estuarine landscape west of Carlisle visual receptor group;
- A697;
- A68;
- A6089;
- A6015;
- Southern Uplands Way;
- Scottish Borders LLA6 Lammermuir Hills; and
- East Lothian LLA1 Lammermuir Moorland.

Summary of Effects

6.10.2 Effects on the receptors assessed above are summarised in **Table 6.13**. For receptors where the significance of effects varies, the distribution of effects is summarised. Only effects of greater than Negligible magnitude and/or Minimal significance are included in the summary table.

Table 6.13: Summary of Effects

Receptor	Comments	Distance, Direction	Sensitivity	Magnitude	Significance	Beneficial / Neutral / Adverse
Landscape Character						
LCT90 – Dissected Plateau Moorland	Day (within site)	Includes site	Medium	Medium	Moderate (not significant)	Adverse
	Day (wider LCT)			High-medium	Moderate (not significant)	Adverse
	Night			High-medium	Major-moderate (significant)	Adverse
	Cumulative			High	Major-Moderate (significant)	Adverse
LCT115 – Upland Valley with Mixed Farmland	Day	Includes site	Medium	Medium	Moderate (not significant)	Adverse
	Night			Medium-low	Moderate (not significant)	Adverse
	Cumulative			Medium	Moderate (not significant)	Adverse
LCT266 – Plateau Moorland – Lothians	Day	2.2km, north	High-medium	Low-Negligible	Slight (not significant)	Adverse
	Night			Low-Negligible	Slight (not significant)	Adverse
LCT91 – Plateau Grassland – Borders	Day	2.3km, west	Medium-low	Low	Slight (not significant)	Adverse
	Night			Medium-Low to Low	Moderate to Slight significance (not significant)	Adverse
	Cumulative			High	Moderate (not significant)	Adverse
LCT99 – Rolling Farmland – Borders	Day	3.8km, south	Medium	Medium-low	Moderate (not significant)	Adverse
	Night			Low	Slight (not significant)	Adverse
	Cumulative			Medium to Medium-Low	Moderate (not significant)	Adverse
LCT117 – Pastoral Upland Fringe Valley	Day	7.0km, south	Medium	Low	Slight (not significant)	Adverse
LCT103 – Undulating Upland Fringe	Day	7.6km, south	Medium	Low	Slight (not significant)	Adverse
	Night			Medium-Low to Low	Moderate to Slight significance (not significant)	Adverse
	Cumulative			Low	Slight (not significant)	Adverse
LCT115 – Upland Valley with Mixed Farmland	Day	8.3km, east	High-medium	Low	Slight (not significant)	Adverse
	Cumulative			Low	Slight (not significant)	Adverse
LCT105 – Upland Fringe	Day	9.8km, east	Medium-low	Medium-low	Moderate-slight (not significant)	Adverse

Receptor	Comments	Distance, Direction	Sensitivity	Magnitude	Significance	Beneficial / Neutral / Adverse
Moorland with Hills	Night			Low	Slight (not significant)	Adverse
	Cumulative			Medium to Medium-Low	Slight (not significant)	Adverse
LCT108 – Lowland Margin	Day	13.2km south-east	Medium	Low	Slight (not significant)	Adverse
	Cumulative			Medium to Medium-Low	Slight (not significant)	Adverse
Visual Receptor Groups						
Lammermuir Hills around the site	Day	Includes site	High-Medium	High-Medium	Major (significant)	Adverse
	Night		Medium	High-medium	Moderate (not significant)	Adverse
	Cumulative		High-Medium	High-Medium	Major (significant)	Adverse
Landscape and settlements along the A68 and A697 corridors from Soutra Hill to Ravenswood Roundabout and Greenlaw	Day	2.0km, south-west	High-Medium	Medium	Moderate (not significant)	Adverse
	Night		Medium	Medium-low	Moderate (not significant)	Adverse
	Cumulative		High-Medium	High-Medium	Major-Moderate (significant)	Adverse
Recreational landscapes, minor roads and settlements west of the site	Day	4.2km, west	High-Medium	Medium-Low	Moderate (not significant)	Adverse
	Night		Medium	Medium	Moderate (not significant)	Adverse
	Cumulative		High-Medium	High-Medium	Major-Moderate (significant)	Adverse
Minor roads, residents and recreational landscapes east of the Lammermuir Hills	Day	5.3km, east	High-Medium	Medium-Low	Moderate (not significant)	Adverse
	Night		Medium	Medium-low	Moderate (not significant)	Adverse
	Cumulative		High-Medium	Medium	Moderate (not significant)	Adverse
Recreational landscapes, minor roads and settlements south of the site	Day	8.1km, south	High-Medium	Medium-Low	Moderate (not significant)	Adverse
	Night			Medium	Slight (not significant)	Adverse
	Cumulative			High-Medium	Medium-Low	Moderate (not significant)	Adverse
Semi-rural recreational landscapes, minor roads and minor settlements north of the Lammermuir Hills	Day	7.5km, north	High-Medium	Low-Negligible	Slight (not significant)	Adverse
Semi-rural recreational landscapes, minor roads and minor settlements north of the Moorfoot Hills	Day	14.6km, west	High-Medium	Low-Negligible	Slight (not significant)	Adverse
Landscape and settlements along the A1 road corridor from Tranent to West Barns	Day	16.1km, north	High-Medium	Low-Negligible	Slight (not significant)	Adverse
Landscape and settlements along, and to the east of, the A701 road corridor from the A720 to Carlops	Day	26.6km, north-west	High-Medium	Low-Negligible	Slight (not significant)	Adverse
Moorfoot Hills and the landscape to the south	Day	11.1km, west	High-Medium	Low-Negligible	Slight (not significant)	Adverse
Distant roads, residents and recreational landscapes south of Galashiels and Melrose	Day	20.4km, south	High-Medium	Low-Negligible	Slight (not significant)	Neutral
Road and Rail						
A697	Day - around Boghall/Cleekhimmin	3.0km, south	Low	Medium	Slight (not significant)	Adverse

Receptor	Comments	Distance, Direction	Sensitivity	Magnitude	Significance	Beneficial / Neutral / Adverse
	Bridge, and from Newbiggins Walls to Hexpathdean Bridge to the east of Houndslow					
	Day - between Cleekhimmin Burn and Newbiggins Walls, and between Hexpathdean Bridge and Greenlaw			Low	Slight (not significant)	Adverse
	Cumulative			Medium	Slight (not significant)	Adverse
A68	Day - between Oxton and Lauder	3.3km, west	Low	Medium	Slight (not significant)	Adverse
	Cumulative – between Oxton and Lauder			Medium	Slight (not significant	Adverse
A6089	Day	8.4km, south	Low	Medium	Slight (not significant)	Adverse
	Cumulative			Medium	Slight (not significant)	Adverse
A6105	Day	13.7km, south	Low	Medium-low	Slight (not significant)	Adverse
	Cumulative			Medium-low	Slight (not significant)	Adverse
A6093	Day	15.8km, north	Low	Low-negligible	Minimal (not significant)	Neutral
Long Distance Routes						
Southern Upland Way	Day	3.4km, south-east	High-Medium	Medium-low	Moderate (not **significant**)	Adverse
	Cumulative			High-Medium	Major-Moderate (significant)	Adverse
Designated Landscape						
Scottish Borders LLA6 Lammermuir Hills	Day	Includes site	High-Medium	Medium	Major-moderate (significant)	Adverse
	Night			High	Major-moderate (significant)	Adverse
	Cumulative			Medium	Major-Moderate (significant)	Adverse
East Lothian LLA1	Day	2.3km, north	High-medium	Low	Slight (not significant)	Adverse
Lammermuir Moorland	Night			Medium-low	Moderate (not significant)	Adverse
	Cumulative			Medium-Low	Moderate (not significant)	Adverse
East Lothian LLA22 Samuelston	Day	14.4km, north	High-Medium	Low-Negligible	Slight (not significant)	Neutral
Thirlestane Castle GDL	Day	4.6km, south	High-Medium	Medium-Low	Moderate (not significant)	Adverse
	Night			Medium-low	Moderate (not significant)	Adverse
Mellerstain GDL	Day	16.0km, south	High-Medium	Medium-Low	Moderate (not significant)	Adverse
	Cumulative			Medium-Low	Moderate (not significant	Adverse
Oxenfoord Castle GDL	Day	16.9km, north-west	High-Medium	Low	Slight (not significant)	Adverse
	Cumulative			Low	Slight (not significant)	Adverse
The Drum GDL	Day	26.0km, north-west	High-Medium	Low-Negligible	Minimal (not significant)	Neutral
Palace of Holyroodhouse GDL	Day	29.9km, north-west	High-Medium	Low-Negligible	Minimal (not significant)	Neutral