Chapter 5
Landscape & Visual

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5 Landscape & Visual

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5 Landscape & Visual

5.1 Executive Summary

5.1.1 As part of the Environmental Impact Assessment Report, a Landscape and Visual Impact Assessment (LVIA) chapter has been prepared that considers the potential landscape and visual effects arising from a proposed hybrid renewable energy project (the Proposed Development) comprising 18 wind turbines, an alternative (backup) substation and battery energy storage system (BESS) located at Dungavel Forest within an area referred to as 'the northern development area' and a solar array, short duration BESS, long duration BESS, and substations located within an area referred to as the 'southern development area'. The northern development area is located in South Lanarkshire, Scotland and the southern development area is located in East Ayrshire, Scotland. The LVIA considers the likely effects that would occur during construction, the operational life-time of the project (40 years) and the decommissioning phase. It also considers the residual effects and the cumulative effects that would occur when other consented and 'in-planning' wind farms are considered to form part of the baseline landscape.

5.1.2 This LVIA chapter is supported by figures (presented in **Volume 2**), visualisations (presented in **Volume 3**) and Technical Appendices (presented at **Volume 4**).

5.1.3 The Proposed Development is not located in or near to an international or national landscape designations. The East Ayrshire Uplands and Moorlands Local Landscape Area (LLA) borders the south-eastern edge of the northern development area and the northern edge of the southern development area. However, none of the proposed infrastructure would be located in the LLA.

5.1.4 In terms of effects on landscape character, during construction the Proposed Development would result in localised temporary significant effects to the Rolling Moorland Forestry landscape character type (LCT 7Ai) and the East Ayrshire Plateau Moorlands landscape character type (LCT 18a).

5.1.5 During the operational phase, the Proposed Development would result significant effects to limited parts of several landscape character types comprising: the Rolling Moorland Forestry landscape character type (LCT 7Ai); the Plateau Farmland landscape character type (LCT 5i); the Rolling Moorland landscape character type (LCT 7); the Upland River Valley landscape character type (LCT 8i) and to the East Ayrshire Plateau Moorlands landscape character type (LCT 18a).

5.1.6 During the decommissioning phase, there would be temporary significant effects to limited parts of the Rolling Moorland Forestry landscape character type (LCT 7A) and to the East Ayrshire Plateau Moorlands landscape character type (LCT 18a).

5.1.7 All effects on landscape character during the construction, operation and decommissioning phases are either contained within the site or its immediate vicinity and as such would be localised.

5.1.8 In terms of effects on visual amenity, during construction there would be a temporary significant effect from **Viewpoint 4** at Cairn Table, from the B743 in the vicinity of the southern development area and from the minor road passing through the southern development area.

5.1.9 During operation, significant visual effects would be experienced during daylight hours from **Viewpoint 1** at Drumclog, **Viewpoint 4** at Cairn Table and **Viewpoint 8** at Loudoun Hill but no significant visual effects would be experienced at any of the representative viewpoints during the hours of darkness.

5.1.10 In terms of effects from residential properties within 2 km of the proposed turbines in the northern development area, some would experience a significant visual effect but none would experience an overbearing or overwhelming effect. From residential properties within the vicinity of the southern development area, significant visual effects would be experienced from the properties at Burnfoot Farm (financially involved), Laigh Hall, Middlefield Farm (financially involved), Forkings, Forkings Lodge (financially involved) and Linburn Farm (financially involved).

5.1.11 Significant visual effects would be experienced from the settlements of Drumclog and Gilmourton during daylight hours only. Significant visual effects would also be experienced from core paths that

cross the northern development and southern development areas and from several core paths near Drumclog to the north-west of the northern development area and from parts of core paths to the south-east of Muirkirk that leading towards Cairn Table. No significant effects would be experienced from the River Ayr Way long distance walking route that passes through the southern part of the study area. Significant visual effects would be experienced from a section of the B745 to the south of Drumclog, from a limited section of the B743 which passes the along the edge of the northern and southern development areas. In all cases, no visual receptors would experience a significant visual effect during the hours of darkness.

5.1.12 During decommissioning, there would be a temporary additional significant effect to **Viewpoint 4** at Cairn Table, from the B743 in the vicinity of the southern development area and from the minor road passing through the southern development area.

5.1.13 The East Ayrshire Uplands and Moorland LLA would experience some localised significant effects but these align with the effects introduced to those LCTs that extend across the LLA and would not prevent an understanding or appreciation of the underlying landscape of the LLA or its key characteristics.

5.1.14 Embedded mitigation has been built into the design of the layout of the proposed turbines in the northern development area and the proposed visible aviation lighting scheme. A comprehensive landscape strategy (see **Figure 5.26**) incorporating new native planting and biodiversity enhancement has been embedded into the design of the southern development area. Once established, the effects experienced from Burnfoot Farm and Burnside, Laigh Hall, and Forkings Lodge would be considered significant. Effects from all other properties within 1 km of the southern development area would not be considered significant.

5.1.15 Regarding cumulative effects, the existing operational wind farms within the vicinity of the northern development area have already had a characterising effect on Rolling Moorland Forestry landscape character type (LCT 7Ai), redefining its character as 'Rolling Moorland Forestry with Wind Farms'. The Proposed Development would fit with this established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes. The location of the Proposed Development within this established wind cluster would mean that it would not introduce a significant visual effect and nor result in wind turbines being dominant or oppressive in views experienced within the surrounding area.

5.1.16 Localised significant effects on landscape character and visual amenity are inevitable as a result of commercial wind energy development anywhere in the UK. Whilst the LVIA identified some significant landscape and visual effects it is considered that the landscape has the capacity to accommodate the effects identified, particularly when the consented but as yet unbuilt wind farms in the surrounding landscape are taken into account in the baseline.

5.2 Introduction

5.2.1 This chapter presents a Landscape and Visual Impact Assessment (LVIA) of the Proposed Development. The purpose of an LVIA when undertaken in the context of an Environmental Impact Assessment (EIA) is to identify any likely significant landscape and visual effects arising as a result of the Proposed Development. An LVIA must consider both:

- effects on the landscape as a resource in its own right (the landscape effects); and
- effects on specific views and visual amenity more generally (the visual effects).

5.2.2 Therefore, this LVIA considers the potential effects of the Proposed Development upon:

- individual landscape features and elements;
- landscape character;
- specific views; and
- people who view the landscape.

5.2.3 In this chapter, landscape and visual effects are assessed separately although the procedure for assessing each of these is closely linked and follows The Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3) (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

5.2.4 The main objectives of the landscape assessment can be summarised as follows:

- to identify, evaluate and describe the baseline landscape character of the site and its surroundings and also any notable individual landscape features within the site;
- to determine the nature of the landscape receptor (i.e. the sensitivity of the landscape) through a consideration of its susceptibility to the type of development proposed and any values associated with it;
- to identify and describe any impacts of the Proposed Development in so far as they affect the landscape resource;
- to evaluate the nature of the landscape effects (i.e. the magnitude, duration and reversibility of the effect);
- to identify and describe mitigation measures that have been adopted to avoid, reduce and compensate for landscape effects;
- to evaluate the relative significance of residual landscape effects; and
- to determine which landscapes effects, if any, are significant.

5.2.5 The main objectives of the visual assessment are similar and can be summarised as follows:

- to identify, evaluate and describe the baseline visual context of the site and its surroundings with a focus on both specific views and the more general visual amenity experienced by people who have views of the site;
- to determine the nature of the visual receptor (i.e. the sensitivity of the viewpoint or person whose visual amenity is affected) through a consideration of the susceptibility of the viewpoint/person to the type of development proposed and any values associated with either the viewpoint or visual amenity experienced;
- to identify and describe any impacts of the development in so far as they affect a viewpoint or views experienced;

- to evaluate the nature of the visual effects (i.e. the magnitude, duration and reversibility of the effect);
- to identify and describe mitigation measures that have been adopted to avoid, reduce and compensate for visual effects;
- to evaluate the relative significance of residual visual effects; and
- to determine which visual effects, if any, are significant.

5.2.6 The LVIA also considers any cumulative landscape and visual effects which may arise as a result of the Proposed Development. The assessment has focussed on the potential cumulative interactions with other wind farm developments. There are no other solar PV or BESS schemes within the immediate vicinity of the southern development area. The nearest BESS is located approximately 9.8 km to the east of the site boundary. . The nearest solar development is at Strathaven Airfield over 15 km to the north of the southern development area. Due to the topography of the Greenock Water Valley where the proposed solar PV array and BESS are located there would be no intervisibility with these schemes. As such, other solar and BESS development are not considered further within the assessment.

5.2.7 The main LVIA presented in this chapter is supported by figures in EIA Report **Volume 2**, visualisations in **Volume 3** and technical appendices in **Volume 4**.

5.2.8 The location of the Proposed Development and the initial study area for the LVIA are illustrated on **Figure 5.1**. The site location and detailed 20 km LVIA study area are illustrated on **Figure 5.2**.

5.2.9 For reference, other operational, consented and proposed wind farms within the detailed 20 km LVIA study area which are referred to throughout this chapter are illustrated on **Figure 5.20**.

5.2.10 This chapter is structured as follows:

- Legislation, Policy and Guidelines;
- Consultation;
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Scope of the Assessment;
- Assessment of Potential Effects;
- Mitigation;
- Residual Effects
- Cumulative Assessment;
- Summary; and
- References.

5.3 Legislation, Policy and Guidelines

5.3.1 The following relevant legislation, policy and guidelines have been taken into consideration during the assessment.

Legislation

5.3.2 Relevant legislation and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance to the assessment is the European Landscape Convention.

European Landscape Convention, Adopted 2000

5.3.3 The European Landscape Convention (ELC) is the first international convention to focus specifically on the landscape as a resource in its own right. The convention promotes landscape protection, management and planning, as well as European co-operation on landscape issues. Signed by the UK Government in February 2006, the ELC became binding from March 2007. It applies to all landscapes, towns and villages, as well as open countryside; the coast and inland areas; and ordinary or even degraded landscapes, as well as those that are afforded protection.

5.3.4 The UK Government has stated that it considers the UK to be compliant with the ELC's requirements and in effect the principal requirements of the ELC are already enshrined in the existing suite of national policies and guidance on the assessment of landscape and visual effects.

5.3.5 The ELC defines landscape as:

> *"An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors." (Council of Europe 2000)*

5.3.6 It is important to recognise that the ELC does not require the preservation of all landscapes although landscape protection is one of the core themes of the convention. Equally important though is the requirement to manage and plan future landscape change.

5.3.7 The ELC highlights the importance of developing landscape policies dedicated to the protection, management and planning of landscapes. In this regard, NatureScot, South Lanarkshire Council (SLC) and East Ayrshire Council (ELC) have a suite of landscape character assessment and landscape sensitivity studies which enables decisions to be made with due regard to landscape character as promoted by the ELC.

Planning Policy

5.3.8 The Planning Statement associated with this Section 36 application sets out the planning policy framework that is relevant to the EIA. The following currently adopted planning policy documents were reviewed as part of the desk study for the LVIA:

- National Planning Framework for Scotland 4 (NPF4) (Scottish Government, 2023);
- Onshore Wind Policy Statement (OWPS) (Scottish Government, 2022);
- Planning Advice Note 60. Planning for Natural Heritage (Scottish Government, 2000);
- South Lanarkshire Local Development Plan (LDP) (South Lanarkshire Council, 2021); and
- East Ayrshire Adopted Local Development Plan 2 (East Ayrshire Council, 2024).

5.3.9 It is noted however that there are a number of policies of particular relevance to landscape and visual matters. In particular, these include Policy 11 of NPF4 and specifically section (e) ii, which states that *"Where impacts are localised and/or appropriate design mitigation has been applied, they will generally be considered to be acceptable"*. Whilst there is no definition of 'localised' set out in NPF4, it is considered that localised relates to not just the distance to which significant effects would occur, but also the type of landscape, the scale of the Proposed Development and the number of receptors who may be impacted by significant effects. In this context it is considered that the Proposed Development only gives rise to localised landscape and visual effects, and this is demonstrated in the assessments set out in subsequent sections of this chapter. It is also considered that appropriate design mitigation has been applied, which is discussed in the wider application submission material.

5.3.10 The OWPS states at paragraph 3.6.1 that:

> *"Meeting the ambition of a minimum installed capacity of 20 GW of onshore wind in Scotland by 2030 will require taller and more efficient turbines. This will change the landscape."*

5.3.11 It also goes on to reaffirm at paragraph 3.6.3 that NPF4 states:

"that significant landscape and visual impacts are to be expected for some forms of renewable energy, and makes clear that where impacts are localised and/or appropriate design mitigation has been applied, they will generally be considered to be acceptable."

5.3.12 The 'northern development area' of the Proposed Development (where the proposed wind turbines are sited) is situated within South Lanarkshire. As such, the assessment has also had regard to the South Lanarkshire Local Development Plan (LDP2) (2021), abbreviated SLLDP, and in particular to the following policies:

- Policy 14 Natural and Historic Environment;
- Policy NHE4 Gardens and Designed Landscapes;
- Policy NHE 13 Forestry and Woodland;
- Policy NHE 16 Landscape;
- Policy NHE 18 Walking, Cycling and Riding Routes;
- Policy NHE 20 Biodiversity; and
- Policy RE1 Renewable Energy.

5.3.13 As the 'southern development area' of the Proposed Development (where the proposed solar arrays and battery energy storage systems (BESS) are sited) is situated within East Ayrshire, the assessment has also had regard to the East Ayrshire Adopted Local Development Plan 2 (2024), abbreviated EAALDP and in particular to the following policies:

- Policy HE4 Gardens and Designed Landscapes;
- Policy NE1 Protecting and Enhancing Landscape and Features;
- Policy NE3 Local Landscape Area;
- Policy NE4 Nature Crisis;
- Policy NE8 Trees, Woodland, Forestry and Hedgerows; and
- Policy RE1 Renewable Energy;

Guidance

5.3.14 The following supplementary guidance and technical reports which provide the evidence base for current planning policy were also reviewed:

- South Lanarkshire Council Landscape Character Assessment (South Lanarkshire Council, 2010);
- South Lanarkshire Council Landscape Designations Report (South Lanarkshire Council, 2010);
- South Lanarkshire Landscape Capacity Study for Wind Energy (SLLCSWE) (South Lanarkshire Council, 2016);
- South Lanarkshire Tall Wind Turbines: Landscape Capacity, Siting and Design Guidance (South Lanarkshire Council, 2019);
- South Lanarkshire Local Development Plan 2. Supporting Planning Guidance. Renewable Energy (South Lanarkshire Council, 2021);
- Development Framework for Hagshaw Energy Cluster (LUC, 2023);
- East Ayrshire Local Landscape Area Boundary Review (East Ayrshire Council, 2021); and
- East Ayrshire Landscape Wind Capacity Study (EALWCS) (East Ayrshire Council, 2018).

5.4 Consultation

5.4.1 Table 5.1 provides details of consultation with technical consultees relevant to the LVIA, including information on how consultees' comments have been addressed in the EIA Report.

Table 5.1 – Summary of Consultation Responses Relevant to this Chapter

Consultee	Issue Raised	Response/Action Taken
Energy Consents Unit Scoping Opinion dated 14 March 2023	As the maximum blade tip height of turbines exceeds 150m the LVIA as detailed in section 5 of the scoping report must include a robust Night time Assessment with agreed viewpoints to consider the effects of aviation lighting and lighting mitigates the effects.	The assessment of the effects of aviation lighting has been carried out in accordance with Annex 1 NatureScot pre-application guidance for onshore wind farms and NatureScot Guidance on Aviation Lighting Impact Assessment. Night-time visualisations have been produced from: • Viewpoint 1 – Drumclog • Viewpoint 6 – B743 (east of Nethershield) • Viewpoint 9 – A71, bridge crossing Calder Water Following further direct consultation with EAC in December 2024 an additional night-time visualisation has been produced from: • Viewpoint 3 – River Ayr Way Visualisations are provided in **Volume 3**.
East Ayrshire Council Scoping Opinion dated 14 March 2023	The Applicant is advised to keep the cumulative situation under review during the preparation of the EIA Report as this is an evolving situation.	A comprehensive cumulative data gathering exercise has been carried out and a cut-off date set at the end of January 2025.
	In regards the proposal to digitally include consented but not yet built turbines into the photomontages, it is recommended that this be separate to the photomontages produced showing the proposed scheme against the actual baseline landscape as it is at the time of the assessment, without artificially altering the baseline photography with turbines not viewed in the landscape at that time. It is agreed that the other elements, including solar arrays, BESS, hydrogen plant, substation, tracks, etc. should be shown in the photomontages out to distances of 5km and these should be represented as accurately as possible within the photomontages.	Visualisations are presented in **Volume 3** and have been prepared in accordance with NatureScot visualisation guidance. The solar array, BESS, substations etc. are shown in those viewpoints from where there would be visibility.

Consultee	Issue Raised	Response/Action Taken
	The Planning Authority does not agree that night time landscape effects can be scoped out as aviation lighting has an impact on the landscape character in addition to visual impacts.	It has been established in recent appeal decisions that the effects of visible aviation lighting is *"wholly a visual concern"* and that *"It is noted that the Reporters conclude that proposed aviation lighting would be a visual impact alone and consider that without being able to see and fully appreciate the features of the landscape and the composition of views, it is not possible to carry out a meaningful landscape character assessment. The Scottish Ministers concur with this conclusion. The detail is set out at paragraph 4.141 to 4.154 of the PLI Report."* (The Scottish Government. Crystal Rig IV Decision Letter. Dated 24 March 2021). As noted above night-time visualisations have been produced from Viewpoint 1, 3, 6 and 9 and are presented in **Volume 3**.
	As the design evolves, it would be useful to agree a final set of viewpoints with the Planning Authority and relevant surrounding authorities and NatureScot at that time at the design freeze to ensure the LVIA / RVAA is based on an agreed set of viewpoints at that point.	EAC and SLC were consulted by email 10 December 2024 following design freeze confirming the list of viewpoints and requesting any further advice. Following a response from EAC an additional night-time viewpoint was added at **Viewpoint 3** River Ayr Way.
	The Planning Authority would request a night time viewpoint within the East Ayrshire district to coincide with visibility of turbines. Based on the ZTV (Figure 5.1) this might be one of either VP5, VP6 or VP8, depending on the extent of visibility of lighting.	An additional night-time visualisation has been produced from Viewpoint 3 and is presented in **Volume 3**. **Viewpoint 6** is also included as a night-time visualisation.
	It would be expected that every effort is made to reduce the impacts of visible aviation lighting as far as possible, particularly given the substantial increase in cumulative pressure/impacts from visible aviation lighting associated with large numbers of windfarm proposals / consents for turbines over 150m in height.	Details of the lighting mitigation are provided in **Chapter 12**. Details are also provided in **Technical Appendix 5.2** and outlined at **paragraphs 5.8.151** to **5.8.155**.
	The Planning Authority would expect that RVA impacts are assessed for both daytime impacts and night time impacts due to the requirement for visible aviation safety lighting).	This has been considered in **Technical Appendix 5.7**.

Consultee	Issue Raised	Response/Action Taken
	Wirelines and photomontages should be produced for the properties, with day time and night time (lighting) impacts shown as necessary.	
South Lanarkshire Council Scoping Opinion dated 14 March 2023	The scope of the LVIA set out in chapter 5 of the Scoping Report is considered acceptable, noting the 15 no. proposed viewpoint locations.	Noted.
	The cumulative assessment of any LVIA should be maintained as up to date as possible prior to submission as this local area is receiving a lot of interest for potential wind farm developments, and therefore the cumulative assessment will be an important part of the submitted LVIA.	See above response.
Nature Scot Updated Scoping Opinion dated 17 May 2024	NS welcomes further engagement with the applicant, on production of a ZTV based on turbine hub heights, to agree locations for night-time visualisations.	Night-time visualisations have been produced from: • Viewpoint 1 – Drumclog • Viewpoint 6 – B743 (east of Nethershield) • Viewpoint 9 – A71, bridge crossing Calder Water Following further direct consultation with EAC in December 2024 an additional night-time visualisation has been produced from: • Viewpoint 3 – River Ayr Way Visualisations are provided in **Volume 3**.
	Given that the Proposed Development comprises several development areas, as detailed on Figure 2.1 and in paragraph 3.2.15 of the Scoping Report, individual ZTVs for each of these should be included in the EIA Report.	Separate ZTVs have been provided for the northern and southern development areas at **Figure 5.3** to **Figure 5.6**, **Figure 5.10** and **Figure 5.11**. A combined development ZTV has also been provided at **Figure 5.12**.
	Night-time visualisations are proposed from representative viewpoints 2 and 5. We advise inclusion of an additional night-time visualisation from Loudoun Hill (proposed viewpoint 8) given the popularity of this viewpoint and its location to the north-west of the proposal.	As noted above, night-time visualisations have been produced from: • Viewpoint 1 – Drumclog • Viewpoint 3 – River Ayr Way • Viewpoint 6 – B743 (east of Nethershield)

Consultee	Issue Raised	Response/Action Taken
		• Viewpoint 9 – A71, bridge crossing Calder Water A night-time visualisation has not been produced from Viewpoint 8 Loudoun Hill. It is considered that a very limited number of receptors would climb the hill during the hours of darkness. They would also likely have a torch to light their route which would lower their susceptibility to the proposed lighting.
	NS require further information in the form of baseline lighting intensity mapping to confirm that the proposal to scope out turbine lighting effects on landscape character is appropriate.	As noted above effects of night-time lighting is a wholly visual concern. A dark sky baseline satellite image has been included at **Figure 5.7**.
	NS advise that effects on the special qualities of designated landscapes are scoped into the assessment, in particular the River Ayr Special Landscape Area (SLA), Southern Uplands SLA, and the Douglas Valley SLA.	A preliminary assessment of landscape designations which have the potential to experience significant effects is included at **Technical Appendix 5.4**. Those designations which have the potential to experience significant effects have been assessed in detail in **Section 5.8**.
	NS encourage the applicant to consider all mitigation options and present full details of the proposed lighting scheme in the EIA Report.	Details of the lighting mitigation are provided in **Chapter 12**. Details are also provided in **Technical Appendix 5.2** and outlined at **paragraphs 5.8.151** to **5.8.155**.

5.5 Assessment Methodology and Significance Criteria

5.5.1 The primary source of best practice for LVIA in the UK is GLVIA3.

5.5.2 The LVIA presented in this chapter has been undertaken in accordance with the principles established in this document. It must however be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 recognises that:

> *"This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand."*

5.5.3 The methodology adopted for this LVIA follows GLVIA3 to ensure that it is appropriate and fit for purpose.

5.5.4 Consideration has also been given to the following documents:

- Landscape Sensitivity Assessment Guidance (Methodology) (NatureScot, 2022);
- Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot, 2021);

- Siting and Designing Wind Farms in the Landscape, Version 3a (Scottish Natural Heritage (SNH) (now NatureScot), August 2017);
- Visual Representation of Wind farms – Version 2.2 (SNH, February 2017);
- General pre-application and scoping advice for onshore windfarms (NatureScot, 2024);
- Guidance on Aviation Lighting Impact Assessment (NatureScot, 2024);
- LI Technical Guidance Note 2/19. Residential Visual Amenity Assessment (RVAA) (Landscape Institute, 2019);
- LI Advice Note 02/17 Visual representation of development proposals (Landscape Institute, 2017); and
- LI Technical Guidance Note 02/21 Assessing landscape value outside of national designations (Landscape Institute, 2021).

Study Area

5.5.5 The initial study area for the landscape and visual impact assessment is a 35 km radius from the turbines in all directions, as set out in the Scoping Report. The extent of this study area is illustrated in **Figure 5.1**. Initial site work informed by analysis of preliminary ZTVs indicated that any significant landscape and visual effects are likely to occur within a much narrower radius from the site; therefore, the level of assessment work in this LVIA incrementally decreases with distance from the site, with the greatest focus of assessment being within broadly 20 km of the site. The intention is that the detail of the LVIA remains proportional to the likely significance of effects, as advocated in GLVIA3.

5.5.6 In terms of cumulative effects, the intention has again been that assessment work is proportional to the likelihood of significant effects arising, noting that there is less likelihood that wind farms currently in planning will all be consented. The approach adopted in the cumulative LVIA has been to focus on other wind farms which are either operational, under construction, consented or the subject of a full planning application within 20 km radius from the turbines in all directions as agreed in the Scoping Opinion and which have the potential to give rise to significant cumulative effects when considered in combination with the Proposed Development. The approach has been to focus the assessment on those wind farms which have the potential to give rise to significant cumulative effects. Further details of this approach are set out in the cumulative impact assessment at **Section 5.11**.

Landscape Assessment Methodology

5.5.7 A baseline landscape assessment was carried out to determine the current features and character of the landscape within and surrounding the site.

5.5.8 The baseline landscape assessment involved firstly a review of desk material including:

- Ordnance Survey maps at 1:250,000; 1:50,000; 1:25,000 and 1:10,000 scales;
- Aerial photographs of the site and surrounding area;
- Topography;
- Current and historical land use;
- Geology and soil maps;
- Historic Parks and Designated Landscapes;
- Relevant planning policy;
- Relevant landscape sensitivity/capacity studies;

- Relevant landscape character assessments; and
- Relevant Historic Landscape Character Assessments.

5.5.9 Field visits have been conducted in a variety of weather conditions and at different times of the year during the pre-application stage.

5.5.10 The baseline assessment identified the existing landscape features on the site, and in the immediate vicinity, and how these elements combine to give the area a sense of landscape character. Plans and construction details of the Proposed Development were used to determine the impacts of the scheme on landscape features and character.

5.5.11 The LVIA firstly assesses how the Proposed Development would impact directly on any existing landscape features or elements (e.g. removal of trees etc.).

5.5.12 The LVIA then considers impacts on landscape character with reference to landscape character areas/types identified in published landscape character documents.

Visual Assessment Methodology

5.5.13 Potential visual receptors of the Proposed Development were identified by interpretation of digitally generated ZTVs (see **Technical Appendix 6.2** for an explanation of how the ZTVs were produced).

5.5.14 A selection of viewpoints was identified and agreed with statutory consultees to represent a range of views and viewer types as discussed in Visual Representation of Wind farms – Version 2.2 (NatureScot, 2017) and in Paragraphs 6.16-6.20 of GLVIA3. The assessment viewpoints are listed in **Table 5.2**.

5.5.15 The viewpoints cover a variety of different character areas, are in different directions from the site and are at varying elevations. Some of the viewpoints are intended to be representative of the visual experience in a general location whereas other viewpoints illustrate the view from a specific or important vantage point. The viewpoints are located at a range of distances from the Proposed Development to illustrate the varying magnitude of visual impacts.

5.5.16 Visualisations were produced for each of the viewpoints; these are presented in **Volume 3** of this EIA Report. An explanation of how they were produced and information to be read in conjunction with the visualisations is provided in **Technical Appendix 5.3**.

5.5.17 Each of the representative viewpoints were visited to gain an understanding of the sensitivity of the viewpoint receptors and to make professional judgements on the likely visual effects arising from the Proposed Development.

5.5.18 The viewpoints were used as the starting point for considering the effects on visual receptors within the entire study area. The visual assessment does not rely solely on the viewpoint assessments to determine the significance of effects on different visual receptor groups throughout the study area. It should be recognised that the viewpoints illustrated in the LVIA simply represent a series of snapshots from a small selection of the locations within the study area from where the Proposed Development will be visible. It should also be noted that the Proposed Development is always centred within the viewpoint visualisation. This follows NatureScot visualisation guidance and does not imply that the Proposed Development will be the focus of the view from any given viewpoint. Following the viewpoint assessment, the LVIA considers the effect on visual amenity throughout the study area with reference to different visual receptor groups at varying distances from the site.

Assessment Criteria

5.5.19 The purpose of an LVIA when produced in the context of an EIA is to identify any significant landscape and visual effects within the study area to assist the determining authority in deciding the acceptability of the scheme under consideration.

5.5.20 In accordance with the GLVIA3, the level (relative significance) of an effect is ascertained by considering in tandem the nature (sensitivity) of the baseline landscape or visual receptor and the nature (magnitude) of change as a result of the Proposed Development. These two judgements are described as very high, high, medium, low or very low.

5.5.21 The relative significance of landscape or visual effects is described as **major**, **moderate major**, **moderate**, **minor moderate**, **minor** or **negligible**. No effect may also be recorded where the effect is so negligible it is not even noteworthy. Professional judgement is then employed to determine whether the effect is significant or not. Those effects described as **major**, **moderate major** and in some cases, **moderate** may be regarded as significant.

5.5.22 The detailed assessment criteria used to determine landscape and visual sensitivity, magnitude of change and significance of effect are set out in **Technical Appendix 5.1**. The approach to the to the assessment of visible aviation lighting is set out in **Technical Appendix 5.2**. The approach to the assessment of cumulative effects is set out in **Section 5.11** of this chapter and the approach to the residential visual amenity assessment is set out in **Technical Appendix 5.7**.

Assessment Limitations

5.5.23 The assessment of effects within this LVIA has been derived through the use of publicly available information only. Within such a large study area it is unfeasible to visit every single location from which the Proposed Development might be visible as illustrated on the ZTVs. The authors of the LVIA have, however, spent a considerable length of time 'in the field' and visited all important viewpoints and locations within the detailed 20 km LVIA study area .

5.5.24 Limitations to the use of ZTVs and in relation to photography, wireframes and photomontages are set out in **Technical Appendix 5.3**.

5.6 Baseline Conditions

5.6.1 For the avoidance of doubt all distances are approximate and have been measured to the nearest proposed turbine in the northern development area or solar PV module/BESS/substation component in the southern development area as appropriate, unless otherwise stated.

Site Location

5.6.2 The Proposed Development is located to the north of Muirkirk and south of Strathaven, and is split into two main development areas connected by the B743. The proposed wind turbines, alternative (backup) substations and short duration BESS are located in the northern development area (Dungavel Forest) (**Figure 3.1**), and the proposed solar array, long duration BESS, short duration BESS and substations are located in the southern development area (Netherwood) (**Figure 3.2**). These two areas of the Proposed Development site are referred to as 'the northern development area' and 'the southern development area'.

5.6.3 The northern development area is located within South Lanarkshire and the southern development area is located within East Ayrshire.

Landscape Designations

5.6.4 Landscape designations within the detailed 20 km LVIA study area are illustrated on **Figure 5.13** and overlaid with the Combined Development ZTV at **Figure 5.14**.

International/National Landscape Designations

5.6.5 There are no national landscape designations covering the site.

5.6.6 The New Lanark World Heritage Site (WHS) is located within the detailed 20 km LVIA study area approximately 17.6 km to the north-east of the Proposed Development. With reference to the combined development ZTV at **Figure 5.14**, there is no predicted visibility of the Proposed Development from the WHS. There is some limited patchy theoretical visibility of the proposed wind turbines from its buffer zone. However, given the distance from the Proposed Development and, referring to **Figure 5.20**, other operational wind turbines within the intervening landscape, any effects would be very limited and would not be considered significant. As such effects on New Lanark WHS are not considered further within the assessment.

Local Landscape Designations

Local Landscape Areas

5.6.7 The term 'Local Landscape Area' (LLA) follows Scottish Government policy and is the name for local landscape designations in Scotland. Some local authority policy and guidance documents may still refer to previous names such as 'Special Landscape Area', which is the term used in the South Lanarkshire Council and North Lanarkshire Council planning policy.

5.6.8 Eight LLAs overlap the detailed 20 km LVIA study area, as illustrated on **Figure 5.13**. These are:

South Lanarkshire

- Douglas Valley, situated approximately 8.5 km to the south-east of the north development area;
- Middle Clyde Valley, situated approximately 10.9 km to the north-east of the northern development area;
- Lower Clyde and Calderglen, situated approximately 15.4 km to the north of the north development area;
- Leadhills and Lowther Hills, situated approximately 16.5 km to the south-east of the southern development area;
- Upper Clyde Valley and Tinto, situated approximately 17.4 km to the east of the northern development area;

East Ayrshire

- Uplands and Moorlands, borders the northern edge of the southern development area and the south-eastern edge of the northern development area;
- River Ayr Valley, situated approximately 4.8 km to the west of the southern development area; and

North Lanarkshire

- Clyde Valley situated approximately 17.8 km to the north of the northern development area.

5.6.9 Effects on these designations are considered within the preliminary assessment of Designated Sites and Landscape Character Types (LCTs) in **Technical Appendix 5.4** at **Table 1**. The preliminary assessment found that the Uplands and Moorlands LLA in East Ayrshire has the potential to experience significant effects. As such effects on it are considered in detail within this chapter in **Section 5.8**.

Wild Land

5.6.10 There are no Wild Land Areas (WLA) within the detailed 20 km LVIA study area. As such, effects on WLA are not considered further within the assessment.

Gardens and Designed Landscapes

5.6.11 There are nine Gardens and Designed Landscapes (GDL) located within the detailed 20 km LVIA study area, as illustrated on **Figure 5.13** and overlaid with the combined ZTV at **Figure 5.14**. These are:

South Lanarkshire

- Chatelharault (Wham), situated approximately 16.7 km to the north north-east of the northern development area;

- The Falls of Clyde, situated approximately 17.5 km to the north-east of the northern development area;
- Lee Castle, situated approximately 17.6 km to the north-east of the northern development area;
- Barncluith, situated approximately 19.1 km to the north north-east of the northern development area;

East Ayrshire

- Lafine, situated approximately 10.2 km to the west of the northern development area;
- Dumfries House, situated approximately 12.7 km to the south-west of the southern development area;
- Loudon Castle, situated approximately 14.2 km to the west of the northern development area;
- Carnell, situated approximately 19 km to the west of the southern development area; and

North Lanarkshire

- Dalzell House situated approximately 19.8 km to the north north-east of the northern development area.

5.6.12 Effects on these designations are considered within the preliminary assessment of Designated Sites in **Technical Appendix 5.4** at **Table 1**. This concluded that none of the GDL have the potential to experience significant landscape and visual effects as a result of the Proposed Development. As such effects on GDL are not considered further within the assessment.

Published Landscape Character Descriptions

5.6.13 A review was undertaken of the following published sources of information regarding regional and local landscape character, landscape value and landscape sensitivity:

- South Lanarkshire Landscape Capacity Study for Wind Energy (2016) and Tall Wind Turbines: Landscape Capacity, Siting and Design Guidance Addendum (2019) referred to hereafter as SLLCSWE;
- South Lanarkshire Landscape Character Assessment (2010) referred to hereafter as SLLCA;
- East Ayrshire Local Development Plan 2 Landscape Wind Capacity Study (2024) referred to hereafter as EALWECS;
- North Lanarkshire Local Landscape Character Assessment Background Report (2018);
- Dumfries and Galloway Landscape Capacity Study (2020); and
- NatureScot National Landscape Character Assessment (2019).

5.6.14 NatureScot guidance advises that any topic-specific landscape sensitivity studies would take precedence over the National Landscape Character Types. The study area is not covered by such a sensitivity study. Therefore, NatureScot's 2019 national landscape character assessment (LCA) has been used as the basis for the assessment of effects on landscape character.

5.6.15 At this point, for clarity, it is necessary to distinguish between two terms that are frequently used in published guidance and this chapter. They originate from the 'Guidelines for Landscape Character Assessment' (Countryside Agency and NatureScot, 2002):

- Landscape Character Types (LCTs) are defined as tracts of landscape, which have a generic unity of character due to the particular combinations of landform, land cover, pattern and elements.

The same landscape character type can occur at several different locations throughout a study area; and

- Landscape Character Areas (LCAs) are defined as discrete geographical areas of a particular landscape character type and can only occur at a single location.

5.6.16 LCTs covering the detailed 20 km LVIA study area are illustrated on **Figure 5.15** and are overlaid with the combined ZTV at **Figure 5.16**.

Landscape Character Types Covering the Northern Development Area

5.6.17 With reference to **Figure 3.1** and **Figure 5.15**, the proposed turbines and associated infrastructure (as defined in **Chapter 3**) located within the northern development area would be located within LCT 7 Rolling Moorlands and more specifically within landscape character subtype (LCST) 7A Rolling Moorland, Forestry, as defined in the SLLCA.

5.6.18 The character assessment records the key characteristics, features and qualities of the Rolling Moorlands LCT as follows:

- Distinctive upland character created by the combination of elevation, exposure, smooth, rolling or undulating landform, moorland vegetation and the predominant lack of modern development;
- These areas share a sense of apparent wildness and remoteness which contrasts with the farmed and settled lowlands and the windfarm-dominated Plateau Moorlands;
- There are extensive views over the surrounding Ayrshire and Lanarkshire lowlands from the hilltops.

5.6.19 The key characteristic of LCST 7A – Rolling Moorlands Forestry is described as follows:

- Landscape character influenced by areas of significant afforestation. This impacts upon colour, textures and the lengths of views possible.

5.6.20 With reference to **Figure 5.20** illustrating other wind farms within 20 km, since the publication of the 2010 SLLCA and the 2016 SLLCSWE, wind turbines have become an established characteristic feature of LCST 7A with the operational schemes at Bankend Rig, Dungavel, Kype Muir, Kype Muir Extension and Auchrobert and the consented Mill Rig and Bankend Rig II schemes located within the LCST, establishing wind energy development as a feature of the baseline landscape character.

5.6.21 A very small section of the northerly access from the B743 overlaps with LCT 8 Upland River Valley. Its key characteristics are described as:

- A series of valleys formed along faultlines through the Rolling Moorlands and Plateau Farmlands and often paired with valleys to the south and west in Ayrshire;
- Strong contrast between the wooded and settled character of the valleys and the exposed enclosing uplands and farmlands;
- Transition from the exposed upper reaches to more sheltered lowland areas.

Landscape Character Types Covering the Southern Development Area

5.6.22 With reference to **Figure 3.1** and **Figure 5.15**, the solar development and associated infrastructure (as defined in **Chapter 3**) located within the southern development area would be located entirely within LCT 18a East Ayrshire Plateau Moorlands as defined in the EALWCS.

5.6.23 Its key characteristics are summarised as:

- An extensive undulating upland plateau of subtly rounded hills, shallow basins and some very gently graded lower slopes;

- The LCT also features the more pronounced 'landmark' hills of Blackside, Wardlaw, Cairn Table and Corsencon Hills which have steep slopes and defined ridges and summits;
- These 'landmark' hills are prominent in views from the settled lowlands of Ayrshire and some are also popular for recreation and offer fine views across Ayrshire and the Firth of Clyde;
- Land cover is simple, dominated by grass moorland with some coniferous forestry, although small, enclosed pastures and mixed woodlands occur on the settled lower hill slopes to the south-east of Galston and within the valley of the Greenock Burn; and
- Spoil and disturbed ground from former and current opencast workings are evident on the outer edges of the southern area of these *Plateau Moorlands* although the core of these uplands is little modified.

5.6.24 The operational Galawhistle windfarm is partly located in this LCT. The consented Penbreck, Lethans, Lethans Extension and Hare Craig wind farms are located in this LCT. Extensive operational and consented wind farm development is also located in the nearby uplands extending into neighbouring authorities.

Other Landscape Character Types to be assessed

5.6.25 In order to consider the indirect effects of the Proposed Development on landscape character, LCTs within the detailed 20 km LVIA study area are illustrated on **Figure 5.15** and have been overlaid with the combined development ZTV at **Figure 5.16**.

5.6.26 An initial filtering exercise has been undertaken to determine which LCTs would have the potential for significant effects to arise and would therefore require detailed consideration in this chapter. The intention has been to ensure that the level of attention given to each character type is proportionate to the likelihood of significant effects arising. The discussion below summarises the process followed in deciding which character types have the potential to experience significant effects and hence to scope out various character types from further consideration.

5.6.27 All LCTs located beyond 20 km have been scoped out of further assessment due to the distance from the Proposed Development, the influence of other closer wind farm development and the relatively limited theoretical visibility. Similarly, all LCTs within the detailed 20 km LVIA study area within the local authority areas of East Renfrewshire, North Lanarkshire and Dumfries and Galloway have been scoped out of further assessment for the same reasons. It is acknowledged that there may be very limited potential for effects on the character of available views from these LCTs within these local authority areas but there would be no potential for significant effects to arise.

5.6.28 All LCTs present within the detailed 20 km LVIA study area have been subject to an initial filtering exercise. The findings of this exercise are presented at **Table 2** of **Technical Appendix 5.4**.

5.6.29 The LCTs assessed in detail in this chapter are:

South Lanarkshire

- LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog located approximately 1.9 km to the west of the northern development area;
- LCT 7 Rolling Moorland located approximately 1.7 km to the north of the northern development area at Hawkwood Hill;
- LCT 7 Rolling Moorland located approximately 418 m to the north-east of the northern development area at Dunside Rig and Grouse Hill;
- LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig;
- LCT 7 Rolling Moorland located approximately 5.4 km to the south-east of the southern development area;

- LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water), the northern development area is located within this LCT; and
- LCT 8 i Upland River Valley - Avon Water located to the immediate west of the northern development area.

East Ayrshire

- LCT 7c East Ayrshire Lowlands located approximately 2.7 km to the south-west of the southern development area;
- LCT 10 Upland River Valley located approximately 3.6 km to the north-west of the northern development area in the Irvine Valley;
- LCT 10 Upland River Valley located approximately 537 m to the south of the southern development area in the Ayr Valley;
- LCT 18a East Ayrshire Plateau Moorlands to the north of the Ayr Valley in which the southern development area is located; and
- LCT 18a East Ayrshire Plateau Moorlands located approximately 2.9 km to the south of the southern development area and to the south of the Ayr Valley.

Local Landscape Description and Character Appraisal

5.6.30 A plan illustrating the landscape features/elements within the site and its immediate context (5 km radius of the northern and southern development areas) is provided in **Figure 5.18**. The following discussion provides an overview of the physical and perceptual characteristics of the site and immediately surrounding landscape without particular reference to published landscape character types.

Topography

5.6.31 Topography within the 20 km detailed LVIA study area is illustrated at **Figure 5.17**.

5.6.32 The topography of the northern development area and its immediate context is broadly characterised as rolling moorland rising to form rounded hill summits. Within the northern development area, Dungavel Hill is a notable summit at an elevation of 458 m Above Ordnance Datum (AOD) in the western part of the area. From Dungavel Hill and Long Bank to its immediate south-east, landform slopes towards the west and south towards Brown Hill at an elevation of 313 m AOD.

5.6.33 The topography of the eastern part of the northern development area is formed of the valley slopes surrounding the watercourses of Powbrone Burn and Self Grain, sloping to the south-west towards Glengavel Water and rising to the east towards the summits Goodbush Hill (475m AOD) and Auchengilloch (462m AOD).

5.6.34 To the north of the northern development area, topography reduces in elevation and flattens out with increasing distance towards the northern and western edges of the detailed 20 km LVIA study area.

5.6.35 To the south of the northern development area the topography is characterised as plateau moorland, with a chain of hills extending westwards comprising Spirebrush Hill at 469 m AOD, Starpet Rig at 451 m AOD, Middlefield Law at 466 m AOD and Meanlour Hill at 382 m AOD, Auchenlongford Hill at 417 m AOD and Blacksidend at 411 m AOD. This chain of hills provides the transition from the higher elevations of the rolling moorland where the northern development area is located, to the lower elevations to the south where the southern development area is located and the River Ayr valley to the south.

5.6.36 The southern development area is located on the foothills of the plateau moorland that slope south towards Greenock Water. To the south of the southern development area, the topography

continues to slope down towards the River Ayr valley to the south of the southern development area.

5.6.37 To the south of the River Ayr, the landform rises towards the prominent hills and uplands towards the southern edge of the detailed 20 km LVIA study area that provide the separation from the Nith Valley beyond the southern edge of the study area.

Watercourses

5.6.38 Glengavel Water and the River Ayr are the main watercourses within the immediate vicinity of the site. To the north, Glengavel Water flows in a broadly north-easterly direction from the western edge of the northern development area towards Avon Water while to the south of the southern development area the River Ayr flows in a south-westerly direction through the Ayr Valley.

5.6.39 There are a number of watercourses that traverse the site. The northern development area is drained by the Bught Burn, Patrick Burn, and Powbrone Burn which flow in a south-westerly direction towards Glengavel Water and into the Glengavel Reservoir, located outside the site boundary. To the immediate north of the site boundary, Hall's Burn flows along the northern edge of the site to the north-west towards Glengavel Water.

5.6.40 The southern development area is crossed by a number of smaller watercourses and Back Burn, Harwood Burn, and Lamon Burn, which flow in a southerly direction to meet with Greenock Water, located on the southern boundary of the site.

5.6.41 Beyond the southern development area, the River Ayr flows towards the south-west through the southern part of the detailed 20 km LVIA study area fed by numerous burns that drain the hills and upland areas to the south.

Vegetation

5.6.42 The northern development area largely comprises commercial forestry plantation, with an area of open moorland vegetation towards the summit of Dungavel Hill and areas of cleared forestry within the upper reaches of Powbrone Burn. Beyond the site, the coniferous plantations and open moorland extend to the north-east and open, upland farmland extends to the north.

5.6.43 The southern development area comprises improved grassland and areas of rough grassland, interspersed with areas of scrub and woodland and mixed native hedgerows. A small stand of woodland noted on the Ancient Woodland Inventory of semi-natural origin is located along the southern boundary of the site around Middlefield.

5.6.44 To the south of Greenock Water open moorland and a large area of forestry plantation separates the southern development area and the settlement of Muirkirk.

Built Infrastructure

5.6.45 The northern development area does not feature any built infrastructure per se due to its use as commercial forestry plantation. However, there are a number of existing forestry tracks present within the plantation, some of which are proposed to be utilised as part of the Proposed Development infrastructure.

5.6.46 To the immediate north-east of the northern development area there are a number of operational, consented and in-planning windfarms. These are illustrated on **Figure 5.20**. Operational schemes include Dungavel (121 m to blade tip), Kype Muir Extension (maximum blade tip height of 220 m) and Kype Muir (132 m to blade tip). Consented schemes include Hallsburn (149.9 m to blade tip) and in-planning schemes include Hawkwood (maximum blade tip height of 200 m).

5.6.47 The in-planning Bankend Rig III (maximum blade tip height of 250 m) is situated to the immediate south of the northern development area, straddling the B743. The operational Bankend Rig scheme (76 m to blade tip) is located to the south-west, along with the consented Mill Rig (maximum blade tip height of 250 m) and Bankend Rig II (136 m to blade tip) and the in-planning Bankend Rig II Revised (250 m to blade tip).

5.6.48 To the west lies the manmade Glengavel Reservoir and numerous farmsteads are scattered across the upland farmland to the west and north of the northern development area. The B743 passes

along the western edge of the northern development. It crosses the uplands that separate the River Ayr valley to the south with Strathaven and areas to the north. It also provides the link between the northern development area and the southern development area.

5.6.49 Within the southern development area several farms and associated buildings and individual residential properties exist. These are accessed from the minor road that passes through the northern edge of the southern development area.

Sensory and Perceptual Characteristics

5.6.50 The northern development area is a commercial coniferous plantation resulting in the majority of the area having a strong sense of enclosure. The irregular-shaped forest blocks funnel views along the forest tracks, with views truncated by adjacent blocks. From the open area of moorland towards the summit of Dungavel Hill there are expansive views in all directions across the rolling upland hills and adjacent forestry and lower-lying adjacent areas, with sense of remoteness influenced by the presence of existing wind farms, some of which are nearby.

5.6.51 A greater sense of enclosure is perceived within the southern development area due to the enclosure provided by Middlefield Law to the north and the hills to the south while the agricultural land use of this valley reduces the perception of remoteness.

5.6.52 In the last 20 plus years, wind energy has become a defining element of the character of the local landscape. The nearby operational wind farms of Dungavel, Bankend Rig, Kype Muir and Kype Muir Extension, together with the consented Mill Rig and Bankend Rig II, Hallsburn, Hare Craig and other operational and consented developments in the surrounding area give rise to the perception of a landscape within which wind farms are a familiar and established feature.

Forces for Future Change in the Landscape

5.6.53 It is helpful to consider the future forces for change in the baseline landscape in order for the landscape effects of the Proposed Development to be set in context.

5.6.54 The main foreseeable forces for change in the landscape surrounding the site relate to changes to the forest plantations within the northern development area and to the immediate north-west of the site and to the south of the southern development area, with areas of felling and replanting in line with forest management plans. Further changes may also occur in the wider landscape to the north and north-west due to changes in agricultural land use and changes to traditional forms of land management to encourage greater habitat diversity.

5.6.55 The Proposed Development is located within an area with a rich industrial heritage that has played an important part in providing energy and resources, leaving a range of landmarks that influence the present day character of the landscape. The closure of mines within the area and the transition away from coal as a primary fuel source has allowed the area's energy legacy to be replaced by sustainable energy generation.

5.6.56 To the north-east, the Hagshaw Energy Cluster Development Framework sets out a strategic framework for maximising green energy generation, minimising impacts and delivering social and environmental improvements for local communities. Similar masterplans have been developed in other areas to the south-west of the Proposed Development around North Kyle.

5.6.57 Within the wider landscape, there are a number of other consented and in-planning schemes which, if built, would also influence the existing nature of the wider landscape surrounding the Proposed Development as set out in the cumulative assessment at **Section 5.11**.

5.6.58 Finally, it is widely recognised that climate change will have an impact on the future character of the Scottish landscape through changes to weather conditions that will in turn result in changes to vegetation that will affect the intrinsic character of the landscape.

Visual Receptors

5.6.59 With reference to the northern development area wind turbine blade tip ZTV at **Figure 5.3**, theoretical visibility is mostly contained within approximately 10 km. Beyond 10 km, theoretical

visibility becomes more intermittent with large areas to the north-west, west, south and south-east where no there is no theoretical visibility predicted.

5.6.60 Within 5 km, there is extensive blade tip theoretical visibility to the west. Landform to the north at Hawkwood Hill, Feeshie Rig, Harting Rig and Auchengilloch provides a degree of screening reducing the number of blade tips visible to the north. To the south-east, landform at Nutberry Hill, Priesthill Height, Starpet Rig and Middlefield Law limits the extent of theoretical visibility from lower-lying areas beyond 5 km to the south-east in the Ayr Valley between Glenbuck and Muirkirk and to the north of Muirkirk where the southern development area is located in the Greenock Water Valley.

5.6.61 Between 5 and 10 km there is extensive blade tip theoretical visibility to the north-west. To the north, the undulating topography at Kype Muir and Middle Rig restricts visibility, while to the north-east and east theoretical visibility is more intermittent. To the south-east, theoretical visibility is very intermittent and is mainly restricted to localised high ground such as at Common Hill where part of the Hagshaw Cluster is located and at Hareshaw Hill where Galawhistle is located. To the south, theoretical blade tip visibility is screened through the majority of the Ayr Valley but extensive theoretical visibility is available as the landform to the south-east of the River Ayr rises towards Cairn Table and Little Cairn Table.

5.6.62 To the south-west there is extensive theoretical visibility up to approximately 9 km until it becomes restricted by the landform at Barr Muir, Grange Muir and Blackside.

5.6.63 Between 10 and 20 km, theoretical visibility is much more intermittent and interspersed with large areas to the north-west, south-east and south where no theoretical visibility is predicted.

5.6.64 With reference to the southern development area solar, substation and BESS ZTV at **Figure 5.10**, due to the relatively low height of the development components in this area, theoretical visibility is restricted by the rising landform to the immediate north of the southern development area at Middlefield Law and by Starpet Rig to the north-east. The low hills to the south of the southern development area screen theoretical visibility of the substation, BESS and solar array from much of Muirkirk and the majority of the Ayr Valley, with visibility of these elements available as the landform rises to the south of the river at Cairn Hill, Wood Hill, Wardlaw Hill and towards Cairn Table and Little Cairn Table. To the west, theoretical visibility is available of the solar panels from the east-facing slopes of Auchenlongford Hill.

5.6.65 Interpretation of the northern development area ZTVs at **Figures 5.3** to **5.5** and the southern development area ZTVs at **Figures 5.10** and **5.11** and the Proposed Development combined ZTV at **Figure 5.12** assisted in identifying potentially sensitive visual receptors. Principal visual receptors within the surrounding landscape are illustrated at **Figure 5.18** and are identified below.

Residential Receptors and Settlements

5.6.66 With reference to the blade tip ZTVs at **Figures 5.3** to **5.5** and **Figures 5.10** and **5.11** only those properties or settlements with theoretical visibility of the Proposed Development have been identified below. Those settlements with no theoretical visibility have not been considered further within this chapter. Residential receptors are also shown on **Figure 5.19**.

Residential Receptors within 2 km of the Northern Development Area Proposed Turbines

5.6.67 There are 11 residential receptor locations within 2 km of the wind turbines within the northern development area. These are as follows:

- Hamilton Drive and Dungavel Detention Centre – a group of 20 no. properties located approximately 1.6 km to the north-west originally associated with the neighbouring Dungavel Detention Centre;
- Greenhead House and Greenhead Steading – a group of two properties located approximately 1.9 km to the north-west;
- High Plewlands Farm and Glengavel View – located approximately 1.1 km to the west;
- North Halls Farm – located approximately 2 km to the north-west;

- South Halls Farm – located approximately 1.8 km to the north-west;
- Bankend Farm – located approximately 1.7 km to the west;
- Geil Mill Cottage – located approximately 1.6 km to the west north-west;
- Templelands Cottage – located approximately 1.1 km to the west;
- Laigh Plewland Farm – located approximately 1.3 km to the west;
- Glengavel House* – located approximately 519 m to the west; and
- Dippal Lodge (holiday let accommodation) – located approximately 1.6 km to the south-east.

  * denotes financially involved.

5.6.68 The location of these properties is illustrated on **Figure 5.7.1** in **Technical Appendix 5.7** and effects on these residential receptors are considered further within the Residential Visual Amenity Assessment (RVAA) in **Technical Appendix 5.7**.

Residential Receptors within 1 km of the Southern Development Area

5.6.69 There are 10 residential receptor locations within 1 km of the solar, BESS and substation infrastructure within the southern development area. These are as follows:

- Greenockdyke Farm – located approximately 930 m to the west;
- Bibbon Lodge* – located approximately 597 m to the west;
- Netherwood Farm* & Netherwood Cottage* – located approximately 145 m to the south-west;
- Burnfoot Farm* & Burnside* – located approximately 50 m to the west;
- Laigh Hall – located approximately 276 m to the south;
- Middlefield Farm* & Middlefield Cottage* – located approximately 160 m to the north;
- The Forkings – located approximately 182 m to the north;
- Forkings Lodge* – located approximately 269 m to the north;
- Linburn Farm* – located approximately 209 m to the east; and
- Blackside Farm -located approximately 665 m to the east.

  * denotes financially involved.

5.6.70 The locations of these properties is illustrated on **Figure 5.27**. Effects on these properties are considered in **Section 5.8** below.

Settlements within 5 km

5.6.71 Within 5 km of the Proposed Development, the nearest settlements, as identified in the SLLDP are:

- Muirkirk – located approximately 1.4 km to the south of the southern development area;
- Drumclog – located approximately 3.8 km to the north-west of the northern development area proposed turbines; and
- Gilmourton – located approximately 4.1 km to the north of the northern development area proposed turbines.

Settlements within 5 to 10 km

5.6.72 The settlements located between 5 and 10 km of the Proposed Development, as identified in the SLLDP or the EAALDP are:

- Sandford – located approximately 7.6 km to the north of the northern development area;
- Strathaven – located approximately 8.4 km to the north of the northern development area;
- Darvel – located approximately 8.6 km to the west of the northern development area;
- Boghead – located approximately 9.6 km to the north-east of the northern development area;
- Lugar & Logan – located approximately 9.3 km to the south-west of the northern development area;
- Coalburn – located approximately 9.9 km to the west of the northern development area.

5.6.73 Settlements between 10 and 15 km and 15 and 20 km are illustrated on **Figure 5.19**.

5.6.74 An initial filtering exercise has been undertaken of settlements within the detailed 20 km LVIA study area to determine which have the potential to experience significant effects and would therefore require detailed consideration in this chapter. The intention has been to ensure that the level of attention given is proportionate to the likelihood of significant effects arising. The findings of the initial filtering exercise are presented at **Table 1** of **Technical Appendix 5.5**.

5.6.75 This filtering exercise identified that following settlements have the potential to experience significant effects:

- Muirkirk;
- Drumclog; and
- Gilmourton.

5.6.76 The effects on these settlements are considered further in **Section 5.8** and their locations are illustrated on **Figure 5.19**.

Core Paths

5.6.77 There are numerous core paths located within the detailed 20 km LVIA study area, illustrated at **Figure 5.19**. The core paths, aspirational core paths and wider access network that form part of the South Lanarkshire access network and other routes in the immediate vicinity of the site are described below. They are also illustrated on the Landscape Context Plan at **Figure 5.18**.

5.6.78 Several core paths and aspirational core paths cross through the northern development area as follows:

- South Lanarkshire core paths EK/1456/1, EK/1457/1 and EK/1458/1 - Dungavel Hill;
- South Lanarkshire Aspirational Core Path EK/5844/1 – Dungavel;
- South Lanarkshire core paths EK/5841/1 – Dungavel and EK/5852/1 – Powbrone Burn; and
- South Lanarkshire Aspirational Core Path EK/5843/1 - Dungavel – Auchengilloch.

5.6.79 East Ayrshire Core Path B19: Burnfoot Moor crosses through the south-western edge of the southern development area. However, no other core paths cross the southern development area.

5.6.80 Effects on views from these paths and paths within 5 km of the Proposed Development are not assessed individually but are grouped together where appropriate and effects on views from these groups considered with reference to the viewpoint assessment at **Technical Appendix 5.6** as appropriate.

5.6.81 An initial filtering exercise has been undertaken to determine which have the potential for significant effects to arise and would therefore require detailed consideration in this chapter. The intention has been to ensure that the level of attention given to each core path or group of core paths is proportionate to the likelihood of significant effects arising. The findings of the initial sieving exercise are presented at **Table 2** of **Technical Appendix 5.5**.

5.6.82 This filtering exercise identified that the following routes have the potential to experience significant effects:

- South Lanarkshire core paths EK/1456/1, EK/1457/1, EK/1458/1, EK/5844/1 – Dungavel, EK/5841/1, EK/5852/1, EK/5843/1, crossing through the northern development area;
- East Ayrshire core path B19, crossing through the southern development area;
- East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area;
- South Lanarkshire EK/3780/1 to the north-east of the northern development area; and
- Core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17.

Long Distance Walking Routes

5.6.83 The River Ayr Way follows the length of the River Ayr from its source at Glenbuck Loch to the Firth of Clyde at Ayr. As it lies within a low-lying river corridor, ZTV coverage along the route is patchy and intermittent with considerable sections of the route where there is no predicted visibility. However, due to theoretical combined visibility of the proposed wind turbines in the northern development area and the solar array in the southern development area, effects on the River Ayr Way are considered further within the assessment.

Cycle Routes

5.6.84 National Cycle Network (NCN) route 74 connects Gretna with Glasgow, travelling via Lockerbie and Abington. This route originates in Gretna, and from Abington, the route continues in a north-westerly direction along the B7078 to Lesmahagow, and beyond to Larkhall and Hamilton via the minor road network. The closest section of the route to the Proposed Development is located over 11 km to the east of the site at Lesmahagow.

5.6.85 With reference to **Figure 5.19** illustrating principal visual receptors overlaid with the combined development ZTV, coverage is intermittent with theoretical visibility of the proposed turbines in the northern development area. Given the distance from the Proposed Development and the presence of intervening wind turbines to the west of the route, any effects would be limited and would not be considered significant. As such effects on NCN74 are not considered further within the assessment.

Roads and Railways

Roads

5.6.86 An extensive network of major and minor roads traverses the landscape within the detailed 20 km LVIA study area. The M74 motorway, linking Glasgow with the north of England, runs in a north north-west to south south-east direction over 12 km to the east at its closest point near Lesmahagow.

5.6.87 The following roads pass within 10 km of the Proposed Development:

- A70 located approximately 2.2 km to the south of the southern development area;
- A71 located approximately 3.8 km to the north-west of the northern development area;
- A726 located approximately 9 km to the north north-east of the northern development area;
- A723 located approximately 9 km to the north north-east of the northern development area;
- B743 located approximately 1.8 km to the south of the southern development area to the west of Muirkirk;

- B743 passing to the east of the southern development area and to the immediate west of the northern development area linking Muirkirk and Strathaven;
- B745 located approximately 1.5 km to the north-west of the northern development area leading from the B743 to the north-west of the northern development area and connecting to the A71 at Drumclog;
- B7086 located approximately 7.2 km to the north-east of the northern development linking Strathaven and junction 9 of the M74; and
- Minor road leading from the B743 to the east of the southern development area at Linburn Farm and connecting with the B743 to the west of Muirkirk.

5.6.88 Of particular relevance to this assessment are the A71 and the B745 to the north-west of the northern development area, the B743 that passes to the west of the northern development area and to the east and south of the southern development area (linking the northern and southern development areas), the A70 to the south of the southern development area and the minor road leading from the B743 and crossing through the southern development area. The effects on these routes have been assessed in detail within the assessment in **Section 5.8** below.

5.6.89 It is acknowledged that there may be limited effects on other roads within the detailed 20 km LVIA study area. However, due to the increased distance from the Proposed Development and the proximity of some of these routes to other operational wind farms within the detailed 20 km LVIA study area, effects would not be considered significant. As such, these other roads are not considered further within the assessment.

Railways

5.6.90 The Glasgow South Western Line railway passes through the south-western edge of the detailed 20 km LVIA study area, passing through the Nith Valley. Due to the distance from the Proposed Development and, with reference to **Figure 5.19**, the very limited theoretical visibility, any effects would be barely perceptible and would not be considered significant. As such effects on rail users are not considered further within the assessment.

Viewpoints and Landmark Hills

5.6.91 The SLLCSWE identifies a number of vantage points (or viewpoints) upon which the study is based upon in terms of visual receptors. The following are located within the detailed 20 km LVIA study area:

- Chatelherault Country Park;
- Black Hill *;
- Footpath crossing A73 near Lanark;
- Loudoun Hill *;
- Trumpeter's Well;
- Douglas Castle; and
- Cairn Table *.

5.6.92 The above viewpoints marked * have been adopted as individual assessment viewpoints in the LVIA.

5.6.93 The SLLCSWE also identifies a number of landmark hills comprising Tinto, Black Mount and Dungavel Hill (a different Dungavel Hill to the one within the Proposed Development site, located over 21 km to the south-east of the southern development area). All of these prominent hills are located outside of the detailed 20 km LVIA study area. However, an LVIA viewpoint from Tinto has been included.

5.6.94 The EALWCS Annex E also identifies a number of key landmark hills. The following are located within the detailed 20 km LVIA study area:

- Corsencon Hill;
- Wardlaw Hill;
- Cairn Table *;
- Blackside; and
- Loudoun Hill *.

5.6.95 The above East Ayrshire landmark hills marked * have been adopted as individual assessment viewpoints in the LVIA.

Assessment Viewpoints

5.6.96 The following table sets out the viewpoints considered as part of this assessment. These viewpoints have been derived through desk-based, site visits, interpretation of ZTVs and through consideration of the viewpoints used in the assessment of other nearby wind farms. The assessment viewpoints have also been consulted on as part of scoping and amended following feedback received, as set out in **Table 5.1** above.

5.6.97 The viewpoints are representative of the range of views towards the Proposed Development. They are not intended to cover every single view but are representative of a range of distances from the site and receptor types (e.g. residents, walkers, road users) and have been used to inform the assessment of effects on landscape character, the visual assessment, the cumulative assessment and the assessment of visual receptor groups.

5.6.98 **Table 5.2** identifies the 15 assessment viewpoints. The locations of these viewpoints are illustrated on **Figures 5.3** and **5.4**.

Table 5.2 – Assessment Viewpoints

Viewpoint	OS Grid Reference	Approximate Distance Nearest Infrastructure	Receptor
1 – Drumclog (N)	263993, 638833	3,858 m (T1)	Residents
2 - Victory Park, Muirkirk	269413, 627270	1,994 m to the solar array in the southern development area	Residents/Visitors
3 - River Ayr Way, Muirkirk (N)	269859, 626680	2,733 m to the solar array in the southern development area	Walkers
4 - Cairn Table	272426, 624226	6,060 m to the BESS in the southern development area	Walkers
5 - Nether Wellwood (A70)	264525, 625344	3,152 m to the solar array in the southern development area	Road users
6 - B743 (east of Nethershield) (N)	258725, 626946	7,660 m to the solar array in the southern development area	Road users
7 - B705 (Auchlinleck)	255085, 622539	12,608 m to the solar array in the southern development area	Residents Road users
8 - Loudoun Hill	260890, 637904	5,993 m (T1)	Walkers
9 - A71, bridge crossing Calder Water (N)	266379, 641901	5,954 m (T1)	Road users

Viewpoint	OS Grid Reference	Approximate Distance Nearest Infrastructure	Receptor
10 - Strathaven War Memorial	270455, 644639	9,204 m (T16)	Residents Visitors
11 - Minor road south-west of Lesmahagow	279087, 638708	8,862 m (T18)	Road users
12 - Black Hill	283196, 643556	14,869 m (T18)	Walkers
13 - A70 Rigside	287706, 635188	16,665 m (T18)	Residents Road users
14 - Tinto Hill	295331, 634373	24,296 m (T18)	Walkers
15 - Auchensaugh Hill	285342, 627202	16,030 m to the BESS in the southern development area	Walkers

(N) – Dark hours visualisation produced from this viewpoint in addition to daytime visualisation

5.6.99 **Technical Appendix 5.6** provides a baseline description of the view from each assessment viewpoint, followed by a detailed analysis and assessment of the effects.

5.7 Scope of the Assessment

5.7.1 The LVIA assesses both the long-term effects (assessed as though they were permanent) relating to the operational lifetime of the Proposed Development and the short-term temporary effects associated with the construction of the Proposed Development.

5.7.2 Where appropriate, the LVIA also considers any residual effects once the proposed turbines have been decommissioned and removed (decommissioning would be carried out 40 years from the commencement of operation of the wind turbines).

5.7.3 The LVIA considers both direct and indirect landscape and visual effects. It not only assesses the impacts associated with the turbines but also any related impacts resulting from the associated infrastructure e.g. construction compound, borrow pits, underground cabling, site tracks, substation, access roads, solar panels, and BESS facilities.

5.7.4 Consideration has been given to the movement of the turbine blades, along with seasonal variations when assessing the visibility of the Proposed Development.

5.7.5 As set out at **paragraph 5.2.6**, the LVIA also considers any cumulative effects arising in combination with other wind farm schemes in the study area, as defined in **Section 5.11** below. Best practice guidelines identify two principal types of cumulative visual impact:

- combined visibility – where the observer is able to see two or more developments from one viewpoint; and
- sequential visibility – where two or more sites are not visible at one location but would be seen as the observer moves along a linear route, for example, a road or public right of way.

5.7.6 The guidelines state that 'combined visibility' may either be 'in combination' (where two or more sites are visible from a fixed viewpoint in the same arc of view) or 'in succession' (where two or more sites are visible from a fixed viewpoint, but the observer is required to turn to see the different sites). Both types are discussed in this LVIA. The published GLVIA3 also indicates a difference in emphasis between sequential effects that are frequent and those which are occasional.

5.7.7 The primary purpose of the cumulative impact assessment is to consider the additional effects that might arise as a result of the Proposed Development if the other consented and in planning (awaiting determination) schemes were also operational. In addition, the cumulative assessment also includes a further consideration of the overall totality of the effect, when the Proposed

Development is considered alongside the other operational or proposed schemes across the study area.

5.7.8 In relation to both the effects of the Proposed Development alone and the cumulative effects with other wind farm schemes in the study area, both beneficial (positive) and adverse (negative) effects are considered. Renewable energy schemes give rise to a wide spectrum of opinions, ranging from strongly negative to strongly positive, with a wide range of opinions lying somewhere between these two positions. Some people view turbines as incongruous or industrial structures whilst others view them as aesthetically pleasing, elegant structures and a positive response to climate change. This spectrum of opinion has come to be referred to in relation to wind farms as the concept of valency. For the avoidance of doubt, in considering the effects of the Proposed Development, a precautionary approach to the assessment has been adopted and it is assumed that, unless specifically stated otherwise, the effects of the Proposed Development will be adverse in nature even though it is acknowledged that, for some people, the impacts could be considered to be beneficial.

Environmental Measures Embedded into the Development Proposals

5.7.9 Embedded mitigation proposals are those mitigation measures that are inherent to the Proposed Development. Embedded mitigation includes all mitigation usually assumed to be in place during construction, operation and decommissioning, and is generally regarded as industry standard or Best Practice. Construction and environmental management plans are introduced in **Chapter 3** with an outline CEMP provided in **Technical Appendix 3.1**.

5.7.10 In accordance with Civil Aviation Authority (CAA) CAP 764 turbines taller than 150 m require visible aviation lighting. A reduced visible aviation lighting scheme has been agreed with the CAA. In total eight of the 18 turbines (T1, T4, T6, T9, T11, T13, T16 and T18) are proposed to be fitted with visible red 2,000/200 candela (cd) lights on the nacelle of each turbine. These will operate in the reduced 200 cd intensity where meteorological visibility is greater than 5 km and where visibility is less than 5 km the lights will operate at 2,000 cd. The lights are required to be at maximum intensity at 3 degrees above and 1 degree below horizontal. Light intensity reduces beyond those parameters.

5.7.11 The proposed lighting scheme for the Proposed Development sets out that there will be no requirement for intermediate lighting to be installed halfway between the nacelle and the ground-level on the turbine towers.

5.7.12 The above factors have been designed into the Proposed Development as embedded mitigation.

Best Practice Measures

5.7.13 The design of the scheme has also been guided by NatureScot's guidance Siting and Designing windfarms in the landscape Version 3a (NatureScot, 2017).

5.8 Assessment of Potential Effects

5.8.1 Following a brief summary of the Proposed Development, this section of the LVIA considers the effects of the Proposed Development on the physical features of the site (landscape fabric), landscape character, and visual amenity. It considers the effects during the construction and operation of the Proposed Development:

5.8.2 Effects during the construction phase are considered to be temporary and would have a short duration. Effects associated with the operational phase of the Proposed Development are considered to be long-term and largely reversible as the wind turbines, solar panels, BESS and associated infrastructure (excluding access roads) will be dismantled and removed, including above-ground electrical equipment. Underground cables will remain in place and foundations will be removed to a depth of 0.5 m. However, effects are assessed as though permanent.

Project Description

5.8.3 A detailed description of the Proposed Development is set out in **Chapter 3** and this assessment is based on the parameters set out in **Chapter 3** for each of the project components of the northern and southern development areas.

5.8.4 For the purposes of the LVIA, different wind turbine hub height parameters have been used for the assessment of effects during daylight hours and the hours of darkness that are considered to represent the 'worst-case' parameters in each of these scenarios. However, it should be noted that there is no change to the overall blade tip height.

5.8.5 For the assessment of effects during daylight hours, a hub height of 148.5 m has been used for all Proposed Development wind turbines, with the exception of T6 where a hub height of 118.5 m has been used.

5.8.6 For the assessment of effects during the hours of darkness, a hub height of 155.5 m has been used for all Proposed Development wind turbines, with the exception of T6 where a hub height of 125.5 m has been used. It is considered that higher hubs are potentially more impactful because visible aviation warning lights would be seen at higher elevations against the dark sky.It is noted that a 100 m micro-siting allowance in all directions is being sought in respect of all infrastructure, as set out in **Chapter 3**. The assessment judgements have been mindful at all times of this potential micro-siting allowance.

Effects during Construction on Existing Landscape Features

5.8.7 As identified in the baseline section, the existing landscape features present within site are:

Northern Development Area

- Commercial forestry plantation and forestry tracks;
- Moorland vegetation towards the summit of Dungavel Hill; and
- Watercourses within the northern development area comprising Bught Burn, Patrick Burn, and Powbrone Burn;

Southern Development Area

- Grassland;
- Areas of scrub, woodland and hedgerows;
- Watercourses comprising Back Burn, Harwood Burn, and Lamon Burn that cross the southern development area.

Effects during Construction on Existing Landscape Features in the Northern Development Area

Commercial Forestry Plantation

5.8.8 As described in **Chapter 3**, the proposed wind turbines, alternative (backup) Proposed Development substation, short duration BESS, and SPEN substation compounds, and associated infrastructure comprising internal access tracks, hardstanding, temporary construction compounds and three borrow pits will be located within the western and southern part of Dungavel Forest which comprises commercial coniferous plantation and existing forestry tracks. Parts of the plantation will need to be felled to facilitate construction, with trees felled to facilitate construction of the site accesses, substation and BESS locations with the proposed turbines "keyholed " into the plantation wherever possible (refer to **Chapter 13** for further details). The remainder of the commercial crop will be felled in stages during the lifetime of the Proposed Development in line with the Forest Plan (see **Chapter 13**), which would occur in any case in the absence of the Proposed Development.

5.8.9 Existing forestry tracks will be utilised wherever possible and upgraded where required to allow for the transportation of the various Proposed Development components. It will be necessary to introduce further access tracks within the plantation and trees will need to be felled to accommodate this.

5.8.10 The existing forestry plantation within the site and associated ground-level vegetation will be removed where required to allow construction of the Proposed Development and upgrading of existing forestry tracks. Soils stripped as part of the works would be stored in accordance with

established soil handling best-practice for use during reinstatement works on completion of construction activities.

5.8.11 Three borrow pit workings will be required in the northern development area. Their excavation would be short-term and would result in the removal of vegetation, soils and subsurface rock. Borrow pit workings would be restored following construction so as to encourage re-vegetation, although it is accepted that some regrading of the land profile would be expected.

5.8.12 Existing forestry plantation is a characteristic feature of LCT 7A where the northern development area is located. It does not form part of the fabric of a site designated for its scenic value although it is a characteristic feature of the rolling moorland. The ongoing change and modification resulting from commercial forestry management and felling and replanting of the timber crop, lowers its susceptibility. Combining its value and susceptibility results in the sensitivity of the forestry plantation being low.

5.8.13 The commercial forestry plantation would experience a medium magnitude of change resulting from the construction of the various project components located within the northern development area affecting a small part of Dungavel Forest, with large areas of the forest remaining. The overall level of effect on the commercial forestry plantation is judged to be **minor moderate** which is considered to be **not significant**.

Moorland vegetation towards the summit of Dungavel Hill

5.8.14 Moorland vegetation is a common feature of the wider surrounding upland landscape. It does not form part of the fabric of a site designated for its scenic value although it is a characteristic feature of the upland moorland landscape and has evolved over time through land management practices. The ongoing change and modification resulting from moorland management practices lowers its susceptibility. Combining its value and susceptibility results in the sensitivity of the moorland vegetation being low.

5.8.15 The Proposed Development is sited to avoid areas of high ground around the summit of Dungavel Hill and as such also avoids the area of moorland vegetation towards the summit of Dungavel Hill. As a result, the moorland vegetation would experience **no change**.

Watercourses

5.8.16 As noted in the baseline (**Section 5.6**), there are several watercourses crossing through the northern development area. These features are considered to be of low value in landscape terms but highly susceptible to changes which affect their course or their quality. Combining their value and susceptibility results in the watercourse and drainage features having a medium level of sensitivity.

5.8.17 The proposed turbines and associated infrastructure have been located away from any watercourses wherever possible. Therefore, it is only in the location of the proposed watercourse crossings where there is potential for construction effects to occur. Effects would be limited and controlled through best-practice construction and environmental practices, such that there would be no greater than a low magnitude change and a **minor moderate** level of effect which would be **not significant**.

Effects during Construction on Existing Landscape Features in the Southern Development Area

Grassland

5.8.18 The construction phase would result in the removal of some limited areas of grassland vegetation to allow for the construction of access tracks, temporary construction compounds, proposed development and SPEN substations, short duration and long duration BESS, installation of solar inverters and transformers, installation of underground cabling between the photovoltaic panels and the BESS and the substation, and the winning of stone in the borrow pit.

5.8.19 Soils stripped as part of the establishment works would be stored in accordance with established soil handling best-practice for use during reinstatement works on completion of construction activities. The solar borrow pit would be restored following construction so as to encourage re-vegetation, although it is accepted that some regrading of the land profile would be expected.

5.8.20 Grassland vegetation is a common feature of the wider Greenock Water Valley. It does not form part of the fabric of a site designated for its scenic value. The ongoing change and modification resulting from grazing and agricultural improvement lowers its susceptibility. Combining its value and susceptibility results in the sensitivity of the grassland vegetation being low.

5.8.21 The grassland vegetation would experience a low magnitude of change resulting from the construction of the Proposed Development in the southern development area. The overall level of effect on the grassland vegetation is considered to be **minor** which is considered to be **not significant**.

Areas of scrub, woodland and hedgerows

5.8.22 As noted in the baseline (**Section 5.6**), within the southern development area there are areas of scrub, woodland and hedgerows. These features are considered to be of medium value in landscape terms as they provide landscape structure and define parcels of land within the southern development area. They are considered to be highly susceptible to change that could affect their condition and integrity. Combining their value and susceptibility results in these features having a medium level of sensitivity.

5.8.23 The proposed infrastructure in the southern development area has been set back from these features wherever possible. Therefore, it is only in the location of the proposed watercourse crossing at Harwood Burn where there is potential for construction effects to occur. Effects would be limited and confined to a small area of scrub vegetation that would require removal to allow for the internal site access road and new bridge to be constructed. This would result in a low magnitude of change that would be highly localised, resulting in a **minor moderate effect** that would be considered **not significant**. The majority of these landscape features would experience no effects.

Watercourses

5.8.24 As noted in the baseline (**Section 5.6**), there are several watercourses crossing through the southern development area. These features are considered to be of low value in landscape terms but highly susceptible to changes which affect their course or their quality. Combining their value and susceptibility results in these features having a medium level of sensitivity.

5.8.25 The southern development area infrastructure has been located away from any watercourses wherever possible. Therefore, it is only in the location of the proposed watercourse crossings where there is potential for construction effects to occur. Effects would be limited and controlled through best-practice construction and environmental practices, such that there would be no greater than a low magnitude change and a **minor moderate** level of effect which would be **not significant**.

Summary of Effects during Construction on Existing Landscape Features

5.8.26 The construction of the Proposed Development would result in a minor moderate effect to the coniferous forestry plantation and watercourses and no change to the moorland vegetation in the northern development area.

5.8.27 The Proposed Development would result in a minor effect to the grassland vegetation and a minor moderate effect to the areas of scrub, woodland and hedgerows and watercourses in the southern development area.

5.8.28 None of the effects during construction to existing landscape features in either the northern development area or the southern development are considered to be significant.

Assessment of Effects on Landscape Character

5.8.29 LCTs covering the detailed 20 km LVIA study area are illustrated on **Figure 5.15** and are overlaid with the combined ZTV at **Figure 5.16**.

5.8.30 As explained in the baseline section at **paragraph 5.6.26**, an initial filtering process has been carried of all LCTs within the detailed 20 km LVIA study area to determine which have the potential to be significantly affected by the Proposed Development. The LCTs assessed in detail in this chapter are:

South Lanarkshire

- LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog located approximately 1.9 km to the west of the northern development area;
- LCT 7 Rolling Moorland located immediately to the north of the northern development area at Hawkwood Hill;
- LCT 7 Rolling Moorland located approximately 418 m to the north-east of the northern development area at Dunside Rig and Grouse Hill;
- LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig;
- LCT 7 Rolling Moorland located approximately 5.4 km to the south-east of the southern development area to the south of the Ayr Valley;
- LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water), the northern development area is located within this LCT; and
- LCT 8 i Upland River Valley - Avon Water located to the immediate west of the northern development area.

East Ayrshire

- LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area;
- LCT 10 Upland River Valley located approximately 3.6 km to the north-west of the northern development area in the Irvine Valley;
- LCT 10 Upland River Valley located approximately 537 m to the south of the southern development area in the Ayr Valley;
- LCT 18a East Ayrshire Plateau Moorlands in which the southern development area is located; and
- LCT 18a East Ayrshire Plateau Moorlands located approximately 2.9 km to the south of the southern development area and to the south of the Ayr Valley.

Sensitivity of Landscape Character to Wind Energy Development

5.8.31 The first stage in assessing the effects of the Proposed Development on landscape character is to evaluate the sensitivity of the LCTs brought forward into detailed assessment to the change proposed. As indicated within GLVIA3, sensitivity of landscape character should be determined through a consideration of both susceptibility to change and any values associated with the landscape.

5.8.32 A number of documents assist in this process. In considering landscape susceptibility and landscape values for those landscape character types within South Lanarkshire it is helpful to draw upon the analysis contained within the SSLCA and SLLCSWE. For those landscape character types within East Ayrshire it is helpful to refer to the EALWCS.

5.8.33 However, it should be noted that since both the SLLCSWE and EALWCS were published NatureScot advice is that such studies should not be referred to 'capacity studies' as no local or regional targets are available to determine the 'capacity' for development and that such studies should be referred to 'landscape sensitivity assessments' and that their purpose is *'to provide a strategic assessment of relative landscape and visual sensitivity to certain defined forms of development.'*

5.8.34 Appendix 6 of the SLLCSWE considers the physical and perceptual characteristics of each character type to wind energy development and forms a judgement concerning the sensitivity of each

characteristic before coming to an overall judgement about landscape character sensitivity. The same appendix considers landscape values. Therefore, for each character type considered, the findings of the SLLCSWE in relation to landscape character sensitivity and landscape values are reported and commented upon as necessary. An overall judgement regarding landscape sensitivity taking account of landscape susceptibility and values is then formed for each character type.

5.8.35 For each LCT brought forward into detailed assessment, **Table 5.3** below summarises the professional judgements made for the purposes of this report concerning the value and susceptibility to change before drawing a conclusion finally on the landscape sensitivity of each LCT/LCST to the type of development proposed.

Table 5.3 – Summary of Landscape Sensitivity to the Proposed Development

Landscape Character Type	Value	Susceptibility	Sensitivity
South Lanarkshire			
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog	Medium	Medium	Medium
LCT 7 Rolling Moorland located to the immediate north of the northern development area at Hawkwood Hill	Medium	Medium	Medium
LCT 7 Rolling Moorland located approximately 418 m to the north-east of the northern development area at Dunside Rig and Grouse Hill	Medium	Medium	Medium
LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig;	Medium	Medium	Medium
LCT 7 Rolling Moorland located approximately 5.4 km to the south-east of the southern development area to the south of the Ayr Valley	Medium	Medium	Medium
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water), the northern development area is located within this LCT	Medium	Medium	Medium
LCT 8 i Upland River Valley - Avon Water	Medium high	Medium high	Medium high
East Ayrshire			
LCT 7c East Ayrshire Lowlands	High	High	High
LCT 10 Upland River Valley located to the north-west of the northern development area in the Irvine Valley	High	High	High

Landscape Character Type	Value	Susceptibility	Sensitivity
LCT 10 Upland River Valley located to the south of the southern development area in the Ayr Valley	High	High	High
LCT 18a East Ayrshire Plateau Moorlands in which the southern development area is located	Medium high	Medium high	Medium high
LCT 18a East Ayrshire Plateau Moorlands located approximately 2.9 km to the south of the southern development area and to the south of the Ayr Valley	Medium high	Medium high	Medium high

Effects on Landscape Character During Construction

Northern Development Area

5.8.36 Within the northern development area, the proposed turbines, hardstandings, substations, BESS, temporary construction compound and the majority of the access tracks would be located within LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water). A very small proportion of the western end of the access track at Site Access A off the B743 overlaps with LCT 8 i Upland River Valley - Avon Water. This would result in direct effects during construction on these two LCTs.

5.8.37 During the construction phase, there will be the temporary presence of cranes on the site and the movement of delivery vehicles and other construction traffic, consistent with the formation of access tracks, hardstandings, turbine foundations, installation of the turbines, construction of the substation and BESS and other associated infrastructure along with the installation of the turbines.

5.8.38 Effects during construction on landscape character will increase incrementally through the construction phase as more turbines, foundations, hardstandings and ancillary elements are constructed. Construction activities would move from turbine location to turbine location and, as activities increased in one location, they would be decreasing at locations where construction had finished.

5.8.39 Cranes would be involved in the erection of the turbines, but these would be onsite for a relatively short period during the overall construction phase. The cranes would form noticeable vertical features in the landscape for a short period of time but would be a relatively diminutive visual component given their slender form compared with the turbines being erected.

5.8.40 Construction of the turbines, substations and BESS would take place in the western part of LCT 7A i with construction activities partially screened by remaining forestry plantation which would serve to limit the influence of construction activities on the character of this unit.

5.8.41 As set out above, there would be no significant effects on any existing landscape features. There would be localised areas of high magnitude of change directly within the northern development area, resulting in a **moderate major significant effect** that would be contained within the northern development area.

5.8.42 To the north-east of the northern development area, the operational Dungavel, Kype Muir, Kype Muir Extension and Auchrobert windfarms that are located to the immediate north and north-east of the northern development area would serve to limit the temporary additional landscape character effects to the wider LCT unit to the north and north-east during construction resulting in a very low magnitude of change and a temporary additional **minor effect** that would be **not significant**.

5.8.43 To the south and south-west of the northern development area, effects on the LCT would be indirect. Views of construction activity would be largely screened by remaining areas of forestry plantation along the western and south-western edges of the northern development area, limiting views to cranes. The character of this part of the LCT is also influenced by the operational Bankend Rig Wind Farm to the west. Construction in the northern development area would result in no greater than a very low magnitude of change and a temporary additional **minor effect** to this part of the LCT that would be **not significant**.

5.8.44 In terms of direct effects to the landscape character of LCT 8 i Upland River Valley - Avon Water during construction, a small section of site access track from Site Access A off the B743 and a temporary construction compound are located within the eastern edge the LCT. This would introduce a medium magnitude of change and result in a temporary additional **moderate effect** that would be **not significant**. This effect would be highly localised and extend to approximately 100 m to the north-west and south-east of Site Access A.

5.8.45 Effects on the remaining parts of LCT 8 i would be indirect. Views of construction activity in the adjoining LCT where the northern development area is located would be largely screened by remaining areas of forestry plantation along the western and south-western edges of the northern development area, limiting views to cranes, with other construction activities within the site screened from view. The character of this part of the LCT is also influenced by the operational Bankend Rig Wind Farm to the south and the operational Dungavel Wind Farm to the east of the LCT. Construction in the northern development area would result in no greater than a very low magnitude of change and a temporary additional **minor effect** to the LCT that would be **not significant**.

5.8.46 LCT 7 Rolling Moorland located approximately to the north-east of the northern development area at Dunside Rig and Grouse Hill would experience some additional temporary effects. Views of construction activity would be partially restricted by landform and forestry plantation, with some views of construction of the eastern most turbines, with no views available of construction of the substation and BESS. This would result in no greater than a low magnitude of change and a temporary additional **minor moderate effect** that would be **not significant** that would extend approximately 3 km to Dunside Rig and Grouse Hill. Beyond approximately 3 km, the magnitude of change would reduce to very low resulting in a **minor effect** that would be **not significant**.

5.8.47 In terms of indirect effects on other LCTs defined in the SLLCSWE brought forward into detailed assessment, LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog, LCT 7 Rolling Moorland located to the immediate north of the northern development area at Hawkwood Hill and LCT 7 Rolling Moorland located to the south of the Ayr Valley would experience some limited additional effects as construction takes place in the northern development area. However, views of construction activity would be largely restricted by the landform and forestry plantation, limiting views to cranes, with other construction activities screened from view. This would result in no greater than a very low magnitude of change and a temporary additional **minor effect** that would be **not significant**.

5.8.48 In terms of indirect effects on other LCTs defined in the EALWCS brought forward into detailed assessment, there would be indirect effects on views north from LCT 18a East Ayrshire Plateau Moorlands to the north of the Ayr Valley as it wraps arounds the southern edge of the northern development area. Views of construction activity in the adjoining LCT where the northern development area is located would be largely screened by remaining areas of forestry plantation along the south-western edge of the northern development area, limiting views to cranes, with other construction activities within the site screened from view. Construction in the northern development area would result in no greater than a low magnitude of change and a temporary additional **minor moderate effect** that would be **not significant**. This effect would extend approximately 3 km to Starpet Rig and Middlefield Law. Beyond approximately 3 km, the magnitude of change would reduce to very low resulting in a **minor effect** that would be **not significant**.

5.8.49 From the remaining LCTs defined in the EALWCS brought forward into detailed assessment comprising LCT 7c East Ayrshire Lowlands to the south-west of the southern development area, LCT 10 Upland River Valley located in the Irvine Valley, LCT 10 Upland River Valley located in the Ayr Valley and LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley, views of

construction activity would be very limited due to a combination of increasing distance from the northern development area, landform and screening by remaining areas of forestry plantation such that they would experience no greater than a very low magnitude of change resulting in a **minor effect** that would be **not significant**.

Table 5.4 – Summary of Effects on Landscape Character During Construction in the Northern Development Area

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
South Lanarkshire				
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog	Medium	Very low	Minor	No
LCT 7 Rolling Moorland located to the north of the northern development area at Hawkwood Hill	Medium	Very low	Minor	No
LCT 7 Rolling Moorland located to the north-east of the northern development area at Dunside Rig and Grouse Hill *Extending from the northern development area approximately 3 km to Dunside Rig and Grouse Hill*	Medium	Low	Minor moderate	No
LCT 7 Rolling Moorland located approximately to the north-east of the northern development area at Dunside Rig and Grouse Hill *Beyond approximately 3 km*	Medium	Very low	Minor	No
LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig	Medium	Very low	Minor	No
LCT 7 Rolling Moorland located to the south of the Ayr Valley	Medium	Very low	Minor	No
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *Within the northern development area*	Medium	High	Moderate major	**Yes**
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *To the north and north-east of the northern development area*	Medium	Very low	Minor	No

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *To the south and south-west of the northern development area*	Medium	Very low	Minor	No
LCT 8 i Upland River Valley - Avon Water *Extending approximately 100 m to the north-west and south-east of Site Access A*	Medium high	Medium	Moderate	No
LCT 8 i Upland River Valley - Avon Water *Remaining parts of the LCT*	Medium high	Very low	Minor	No
East Ayrshire				
LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area	High	Very low	Minor	No
LCT 10 Upland River Valley located to the north-west of the northern development area in the Irvine Valley	High	Very low	Minor	No
LCT 10 Upland River Valley located to the south of the southern development area in the Ayr Valley	High	Very low	Minor	No
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending south from the northern development area approximately 3 km to Starpet Rig and Middlefield Law*	Medium high	Low	Minor moderate	No
LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley *Beyond approximately 3 km*	Medium high	Very low	Minor	No

Bold text denotes a significant effect

Southern Development Area

5.8.50 Within the southern development area, the proposed solar array, substations, BESS, temporary construction compounds, access tracks and associated elements would be located within LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley. This would result in direct effects during construction on this LCT.

5.8.51 During the construction phase, there will be the temporary presence of cranes on the site during the installation of the substations and BESS and the movement of delivery vehicles and other

construction traffic. Effects during construction on landscape character will increase incrementally through the construction phase as more components, foundations, access tracks and ancillary elements are constructed. Construction activities would move from location to location and, as activities increased in one location, they would be decreasing at locations where construction had finished.

5.8.52 As set out above, there would be no significant effects on any landscape features within the southern development area. The landform of Middlefield Law to the north of the southern development area and the landform to the south would serve to contain the temporary additional effects on landscape character. During construction there would be a medium magnitude of change directly within the southern development area and extending approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT, resulting in a **moderate significant effect**.

5.8.53 Between approximately 2.3 km and 8 km to the south-west and 2.3 km and 5.7 km to the north-east the increasing distance from the southern development area would mean that the magnitude of change would reduce to very low resulting in a **minor effect** that is **not significant**. Beyond approximately 8 km to the south-west and 1.5 km to the north there would be no effects.

5.8.54 In terms of indirect effects on other LCTs defined in the EALWCS brought forward into detailed assessment, there would be indirect effects on views north from LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley. Views of construction activity in the southern development area would be largely screened by topography and forestry plantation. Construction in the southern development area would result in no greater than a very low magnitude of change and a temporary additional **minor effect** that would be **not significant** and extend between approximately 3.2 km and up to 8.2 km from the southern development area. Beyond this, there would be no effects to this LCT.

5.8.55 LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area would experience a very low magnitude of change and a temporary additional **minor effect** that would be **not significant** between approximately 2.7 km and up to 7.1 km to the south-west of the southern development area. Beyond this, there would be no effects to the LCT.

5.8.56 Effects on the majority of LCT 10 Upland River Valley located to the south of the southern development area in the Ayr Valley would be restricted by topography and plantation woodland to the north of Muirkirk, with only a very small part of the LCT near Townhead of Greenock between approximately 700 m and up to 1.4 km and the southern fringes of the LCT between 2.8 km and 3.6 km experiencing a very low magnitude of change and a temporary additional **minor effect** that would be **not significant**.

5.8.57 With reference to **Figure 5.15** illustrating landscape character types overlaid with the combined development ZTV, there is no predicted visibility of any of the infrastructure within the southern development area from LCT 10 Upland River Valley in the Irvine Valley as defined in EALWCS. In terms of indirect effects on the LCTs defined in the SLLCSWE brought forward into detailed assessment there are very limited isolated pockets of theoretical visibility of the solar panels and the substation/BESS from LCT 7 Rolling Moorland located to the south of the Ayr Valley at a distance of over 7 km from the south-eastern edge of the LCT at Urit Hill and Parishholm Hill. However, considering the distance from the southern development area there would be no greater than a very low magnitude of change and a temporary additional **minor effect** that would be **not significant**.

Table 5.5 – Summary of Effects on Landscape Character During Construction in the Southern Development Area

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
South Lanarkshire				
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog	Medium	No change	No effects	No
LCT 7 Rolling Moorland located to the north of the northern development area at Hawkwood Hill	Medium	No change	No effects	No
LCT 7 Rolling Moorland located to the north-east of the northern development area at Dunside Rig and Grouse Hill *Extending from the northern development area approximately 3 km to Dunside Rig and Grouse Hill*	Medium	No change	No effects	No
LCT 7 Rolling Moorland located approximately to the north-east of the northern development area at Dunside Rig and Grouse Hill *Beyond approximately 3 km*	Medium	No change	No effects	No
LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig;	Medium	No change	No effects	No
LCT 7 Rolling Moorland located to the south of the Ayr Valley	Medium	Very low	Minor	No
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *Within the northern development area*	Medium	No change	No effects	No
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *To the north and north-east of the northern development area*	Medium	No change	No effects	No
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *To the south and south-west of the northern development area*	Medium	No change	No effects	No
LCT 8 i Upland River Valley - Avon Water *Extending approximately 100 m to the north-west and south-east of Site Access A*	Medium high	No change	No effects	No

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
LCT 8 i Upland River Valley - Avon Water *Remaining parts of the LCT*	Medium high	No change	No effects	No
East Ayrshire				
LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area *Between approximately 2.7 km and up to 7.1 km*	High	Very low	Minor	No
LCT 10 Upland River Valley located to the north-west of the northern development area in the Irvine Valley	High	No change	No effects	No
LCT 10 Upland River Valley located to the south of the southern development area in the Ayr Valley *Between approximately 700 m and up to 1.4 km near Townhead of Greenock and between 2.8 km and 3.6 km at the southern fringes of the LCT*	High	Very low	Minor	No
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending from the southern development area* *approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT*	Medium high	Medium	Moderate	**Yes**
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Between approximately 2.3 km and 8 km to the south-west and 2.3 km and 5.7 km to the north-east*	Medium high	Very low	Minor	No
LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley *Between approximately 3.2 km and 8.2 km from the southern development area*	Medium high	Very low	Minor	No

Bold text denotes a significant effect

Summary of Effects on Landscape Character During Construction

5.8.58 The construction of the Proposed Development in the northern development area would result in a significant effect to LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) defined in the SLLCSWE. The extent of the effect would be contained within the northern development area.

5.8.59 The construction of the Proposed Development in the southern development area would result in a significant effect to LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley that would

extend from the southern development area to approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT.

5.8.60 As these effects are contained within the immediate vicinity of the Proposed Development they are considered to be localised.

Effects on Landscape Character During Operation

5.8.61 The effects on landscape character are discussed below in relation to each landscape character type brought forward into detailed assessment (see **Technical Appendix 5.4**). The magnitude of change on landscape character as a result of the Proposed Development has been determined using professional judgement based on the following factors:

- The percentage of the character type from where the Proposed Development would theoretically and actually be visible;
- The distance between the character type and the Proposed Development;
- The likely prominence of the wind turbines, substations, BESS and solar panels from the character type taking account of existing locally dominant characteristics in the character type; and
- The degree to which the physical and perceptual characteristics of the landscape would change as a result of the Proposed Development.

5.8.62 To aid the consideration of the operational effects on landscape character, the landscape character types within the detailed 20 km LVIA study area have been overlaid with the combined development ZTV at **Figure 5.16**.

5.8.63 Beyond the immediate environs of the northern and southern development areas, the ground-level components of the Proposed Development would not be discernible from many areas due intervening screening of remaining forestry blocks within Dungavel Forest in which the northern development area is located or due to landform to the north and south of the southern development area. Therefore, effects on landscape character, as experienced in the wider landscape, for many locations, arise largely due to the introduction of the proposed turbines in the northern development area and the resultant changes to the experience of landscape character.

5.8.64 It is acknowledged that there may be some more elevated areas where the substations, BESS, solar array or wind farm access tracks may be visible and these are considered within the assessment where relevant.

5.8.65 It is noted that in general, the magnitude of change in landscape character will incrementally decrease with distance from the Proposed Development as it becomes gradually less prominent.

5.8.66 A summary of the effects on landscape character during operation is presented in **Table 5.6** below. For all character types stated within this table, the duration of the Proposed Development is considered to be long-term and reversible.

South Lanarkshire

LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) – Northern Development Area Host LCT

5.8.67 The proposed wind turbines, alternative (backup) substation and BESS, and access tracks and other associated infrastructure in the northern development area are located within this LCT. With reference to **Figure 5.15**, there is only a very small fragment of the south-western corner of the LCT near Hart Hill where there is combined visibility of the proposed wind turbines and solar panels located in the southern development area. However, actual combined visibility would be restricted by existing woodland in this area. Therefore, effects on this LCT arise solely from the infrastructure located in the northern development area.

5.8.68 Referring to **Figure 5.16**, there is theoretical visibility of the proposed turbines across the whole of this LCT and combined visibility of the proposed wind turbines, substation and BESS extending up

approximately 2.8 km to the west where the existing Bankend Rig Wind Farm is located and approximately 1.5 km to the south of the northern development area. However, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area.

5.8.69 Beyond approximately 2.8 km to the south-west, combined theoretical visibility is very intermittent with isolated pockets of combined visibility to the south of Mill Rig, where the consented Mill Rig Wind Farm will be located, if constructed, and on the eastern slopes of Anderside Hill at just over 5 km from the northern development area.

5.8.70 There is no predicted visibility of the substation and BESS in the part of the LCT that extends to the north-east of the northern development area which is the part of the LCT where the existing Dungavel, Kype Muir, Kype Muir Extension and Auchrobert wind farms are located.

5.8.71 The proposed turbines would introduce tall vertical structures that would extend up to 230 m to blade tip (T6 would extend up to 200 m to blade tip) in an area whose character is already strongly influenced by existing wind turbines, as noted above, which would mean that the Proposed Development would not introduce new features into the landscape.

5.8.72 It is acknowledged that the alternative (backup) substation and BESS would introduce new elements into the LCT. However, their influence on the landscape character of the LCT would be largely contained within the northern development area.

5.8.73 The Proposed Development would introduce a medium high magnitude of change that would extend up to approximately 1.7 km to the north-east of the northern development area to approximately Feeshie Rig, Harting Rig and Auchengilloch. This magnitude of change would also extend to approximately 3 km to the south-west of the northern development area to approximately Mill Rig and Bankend Rig. Combined with the sensitivity of the LCT, this would result in a **moderate major significant effect**.

5.8.74 The character of the LCT to the north-east of the northern development area, is strongly influenced by the existing Dungavel, Kype Muir, Kype Muir Extension and Auchrobert wind farms and, while the proposed turbines are taller than these operational schemes, the topography to the north-east of the northern development area limits the number of blade tips and hubs that would be visible from this part of the LCT. Actual visibility would also be less than predicted due to intervening areas of forestry plantation.

5.8.75 Taking these factors into consideration, together with the increasing distance from the northern development area, beyond approximately 1.7 km to the north-east, the Proposed Development would introduce a medium magnitude of change and **moderate effect** that would be **not significant**.

5.8.76 Beyond approximately 3 km to the south-west, the increasing distance from the northern development area coupled with the influence of the existing Bankend Rig Wind Farm would mean that the Proposed Development would introduce a medium magnitude of change and **moderate effect** that would be **not significant**.

LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog

5.8.77 This LCT is located approximately 1.9 km to the north-west of the northern development area at its southern end and extends to over 19 km to the north. Effects on this unit would be indirect as none of the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there is a small area combined visibility of the alternative (backup) substation and BESS located in the northern development area. However, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area. **Figure 5.16** also illustrates that there would be no combined visibility of any of the infrastructure located within the southern development area. Therefore, effects on this LCT arise as a result of the proposed wind turbines located in the northern development area.

5.8.78 With reference to the blade tip ZTV at **Figure 5.3,** theoretical blade tip visibility extends across much of the LCT up to a distance of approximately 13.3 km to the north where theoretical is restricted due to landform to the north of Strathaven. Beyond this distance, theoretical visibility is much more

intermittent. The hub height ZTV at **Figure 5.4** also illustrates that a reduced number of turbine hubs would be visible at the south-eastern edge of the LCT from south of Drumclog to Caldermill and in a segment of the northern part of the LCT around Strathaven and Glassford.

5.8.79 There are no wind turbines currently located within most of the LCT, although the operational Calder Water Wind Farm overlaps the edge of the LCT to the north-west of Drumclog. However, the character of the LCT is influenced to a degree by its proximity to the existing West Browncastle Wind Farm and by the existing Dungavel and Kype Muir wind farms to its east. Therefore, the Proposed Development would not introduce entirely new elements into the landscape as its character is already influenced by these existing schemes.

5.8.80 Within approximately 5 km of the northern development area, the Proposed Development would introduce a medium magnitude of change and a **moderate major significant** effect. Between approximately 5 km and 10 km, the increasing distance from the Proposed Development and proximity of other adjacent wind farms means that the magnitude of change would reduce to medium with effects reducing to **moderate** and **not significant**.

5.8.81 Between approximately 10 and 13.3 km the magnitude of change would reduce to low with effects reducing to **minor moderate** and **not significant**. Beyond approximately 13.3 km the magnitude of change would be very low with effects considered to be **minor** and **not significant**.

LCT 7 Rolling Moorland (Located to the north of the northern development area at Hawkwood Hill)

5.8.82 This LCT is located to the north of the northern development area at Hawkwood Hill and extends to over 5 km to the north of the northern development area. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there is no combined visibility of the proposed wind turbines and the infrastructure located in the southern development area or the alternative (backup) substation and BESS located in the northern development area. Therefore, effects on this LCT arise solely from the proposed wind turbines located in the northern development area.

5.8.83 With reference to the blade tip ZTV at **Figure 5.3** and the hub height ZTV at **Figure 5.4**, theoretical visibility from the LCT is reduced due to the topography of Dungavel Hill in the northern development area and Feeshie Rig and Hawkwood Hill to the north of the northern development area. This results in a limited number of blade tips and turbine hubs being visible from the LCT.

5.8.84 There are no wind turbines currently located within the LCT, although there is a single consented wind turbine (149.9 m to blade tip) located at West Dykes, with further application stage schemes proposed in the LCT at West Dykehead in the southern central part of the LCT, Hawkwood in the central part of the LCT and at East Merkland in the northern part of the LCT. This LCT is also bound to its east by the operational Kype Muir and Kype Muir Extension wind farms and to its south by the existing Dungavel Wind Farm located between the southern edge of the LCT and the northern development area. Therefore, the Proposed Development would not introduce new elements into the landscape as the character of the LCT is already strongly influenced by these existing schemes.

5.8.85 Taking these factors into consideration, the Proposed Development would introduce a low medium magnitude of change to the character of the LCT and a **minor moderate effect** that would be **not significant**. This effect would extend approximately 5 km north. Beyond approximately 5 km there is no predicted visibility and as such the Proposed Development would not result in any effects to the landscape character of the far northern part of the LCT.

LCT 7 Rolling Moorland (Located to the north-east of the northern development area at Dunside Rig and Grouse Hill)

5.8.86 This LCT is located to the north-east of the northern development area at Dunside Rig and Grouse Hill and extends to over 7 km to the north-east of the northern development area. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there is no combined visibility of the proposed wind turbines and the infrastructure located in the southern development area or the alternative (backup) substation and BESS located in the northern development area. Therefore, effects on this LCT arise solely from the proposed wind turbines located in the northern development area.

5.8.87 With reference to the blade tip ZTV at **Figure 5.3** and the hub height ZTV at **Figure 5.4**, theoretical visibility from the LCT is reduced due to the topography of Dungavel Hill in the northern development area and Goodbush Hill, Grouse Hill and Dunside Rig within the LCT. This results in a limited number of blade tips and turbine hubs being visible across the LCT.

5.8.88 The existing Auchrobert Wind Farm overlaps the LCT at Auchrobert Hill in the northern part of the LCT and is bordered along its western edge by the operational Kype Muir and Kype Muir Extension wind farms. Therefore, the Proposed Development would not introduce new elements into the landscape as the character of the LCT is already strongly influenced by these existing schemes.

5.8.89 Taking these factors into consideration, the Proposed Development would introduce a low medium magnitude of change to the character of the LCT and a **minor moderate effect** that would be **not significant**. This effect would extend approximately 5 km north-eastwards. Beyond approximately 5 km, the operational Auchrobert scheme would have a much greater influence on the character of the northern part of the LCT as it is located in this part of the LCT. As such the Proposed Development would not result in any effects to the far northern part of the LCT.

LCT 7 Rolling Moorland (Located to the west of the northern development area at Mill Rig)

5.8.90 This LCT is located approximately 1.8 km to the west of the northern development area at Mill Rig extending to over 8 km to the south-west of the northern development area. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there is only a very small fragment of the southern corner of the LCT near Hart Hill where there is combined visibility of the proposed wind turbines and solar panels located in the southern development area. However, at over 6 km to the north-west of the southern development area, the solar array would be barely perceptible. As such, effects on this LCT arise solely from the infrastructure located in the northern development area.

5.8.91 Referring to **Figure 5.16**, there is theoretical visibility of the proposed turbines up to a distance of approximately 5 km from the northern development area, before Graystone Hill restricts theoretical visibility. Beyond approximately 5.3 km, theoretical continues to the south-western corner of the LCT but is intermittent. Combined visibility of the wind turbines, substation and BESS is mostly limited to the north-eastern edge of the LCT, north of Mill Rig, with some isolated pockets of combined visibility towards the south-western end of the LCT. However, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area.

5.8.92 Whilst the consented Mill Rig Wind Farm would occupy the eastern part of this LCT once built, there are currently no wind turbines situated within the LCT although views are available of the operational Dungavel and Bankend Rig wind farms in the adjoining LCT 7A i which is the host LCT for the northern development area. Therefore, the Proposed Development would not introduce entirely new elements into the landscape. While the alternative (backup) substation and BESS would introduce new elements into the adjoining LCT, their influence on views from this LCT would be restricted by screening provided by forestry plantation along the south-western edge of the northern development area.

5.8.93 The Proposed Development would introduce a medium high magnitude of change that would extend up to a distance of approximately 3 km near Mill Rig. Combined with the sensitivity of the LCT, this would result in a **moderate major significant effect**.

5.8.94 Beyond approximately 3 km to the south-west, the increasing distance from the northern development area coupled with the influence of the existing Bankend Rig Wind Farm would mean that the Proposed Development would introduce a medium magnitude of change and **moderate effect** that would be **not significant**.

LCT 7 Rolling Moorland located to the south of the Ayr Valley

5.8.95 This LCT unit is located approximately 5.4 km to the south-east of the southern development area and encompasses a part of the north-west facing slopes to the south of the Ayr Valley below Urit Hill and Parishholm Hill that are located on its south-eastern edge. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, the there is some very limited combined visibility of the proposed wind turbines, the solar

array and the substation/BESS located in the southern development area. However, there is no combined visibility of the alternative (backup) substation and BESS located in the northern development area.

5.8.96 These combined effects would be experienced at distances in excess of 7 km, while views of the proposed turbine hubs and blades will be available across a greater extent of the north-west facing slopes within the LCT at a distance of over 8.5 km from the northern development area. Given the relatively low height of the solar panels, substation and BESS in the southern development area it is considered that it is the proposed turbines that will contribute a greater proportion of the effects on the LCT.

5.8.97 Views out from the LCT are already influenced to the north-east by the proximity to the operational Galawhistle Wind Farm, while the operational Kennoxhead Phase 1 Wind Farm is located close to the south-eastern edge of the LCT.

5.8.98 The Proposed Development would introduce a low magnitude of change to the character of the LCT, resulting in a **minor moderate effect** that would be **not significant**. These effects would be experienced at a distance of over 8.5 km from the northern development area extending to the south-eastern edge of the LCT up to a distance of approximately 10.3 km.

LCT 8 i Upland River Valley - Avon Water

5.8.99 This LCT borders the south-western edge of the northern development area at its southern end and extends to over 11 km to the north-east passing to the south-east of Strathaven. Effects on this unit would be mostly indirect as most of the proposed infrastructure would not be located within it. However, as outlined above, a small proportion of Site Access A overlaps the south-eastern edge of the LCT.

5.8.100 Referring to **Figure 5.16**, there is a very small area combined visibility of the alternative (backup) substation and BESS located in the northern development area at the southern edge of the LCT. However, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area. **Figure 5.16** also illustrates that there would be no combined visibility of any of the infrastructure located within the southern development area. Therefore, effects on this LCT are considered to arise as a result of the proposed wind turbines located in the northern development area.

5.8.101 With reference to the blade tip ZTV at **Figure 5.3** and the hub height ZTV at **Figure 5.4**, theoretical visibility from the LCT is reduced due to the proximity of the LCT to the topography of Dungavel Hill in the northern development area and Hawkwood Hill to the north of the northern development area which limits the number of blade tips and turbine hubs visible from the LCT.

5.8.102 There are currently no wind turbines situated within the LCT although views are available of the operational Dungavel and Bankend Rig wind farms in the adjoining LCT 7A i from the southern part of the LCT and of the operational Kype Muir and Kype Muir Extension wind farms in the north-eastern part of the LCT to the north-east of Drumclog. Therefore, the Proposed Development would not introduce entirely new elements into the landscape. While the alternative (backup) substation and BESS would introduce new elements into the adjoining LCT, their influence on views from this LCT would be restricted by screening provided by forestry plantation along the south-western edge of the northern development area.

5.8.103 Taking the more limited theoretical visibility from the LCT into consideration, the Proposed Development would introduce a medium magnitude of change that would extend northwards to a distance of approximately 3 km to near West Dykes. Combined with the sensitivity of the LCT, this would result in a **moderate major significant effect**.

5.8.104 Between approximately 3 and 5 km to the north, the increasing distance from the northern development area coupled with the greater influence of the existing Dungavel and Kype Muir wind farms on this part of the LCT would mean that the Proposed Development would introduce a low medium magnitude of change and a **moderate effect** that would be **not significant**.

5.8.105 Beyond approximately 5 km to the north the magnitude of change would reduce to very low, resulting in a **minor effect** that would be **not significant**.

East Ayrshire

LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley – Southern Development Area Host LCT

5.8.106 The proposed solar array, substation and BESS, associated infrastructure and access tracks in the southern development area are located within this LCT that borders the southern edge of LCT 7 A i as defined in the SLLCSWE and assessed above. The north eastern edge of LCT 18a also borders the south-eastern edge of the northern development area.

5.8.107 Referring to **Figure 5.16** illustrating the combined development ZTV, there is a very small area of combined theoretical visibility of the alternative (backup) substation, BESS and proposed wind turbines located in the northern development area the occurs on the north-eastern slopes of Middlefield Law. However, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area.

5.8.108 Due to the topography of the southern part of this LCT unit, theoretical combined visibility of the southern development area solar array, BESS and substation is generally contained by the landform and occurs within the southern edge of the LCT within the Greenock Water Valley, extending between Aikencleugh in the west and Priesthill Height and Hare Craig to the east over a distance of approximately 10 km. This combined visibility also extends between Black Hill on the southern edge of the LCT, north to Middlefield Law and Starpet Rig, over a distance of approximately 2.5 km.

5.8.109 To the north of Starpet Rig and Middlefield Law, theoretical visibility of the proposed wind turbines in the northern development area is available and, referring to the hub height ZTV at **Figure 5.4**, apart from the more elevated locations within the LCT at Spirebush Hill, Starpet Rig and Middlefield Law, a limited number of turbine hubs would be visible across this area.

5.8.110 Combined theoretical visibility of the southern development area solar array, substation, BESS and proposed wind turbines also occurs on the east-facing slopes of Blackside in the central part of the LCT.

5.8.111 To the north-west of Blackside, there is no further combined visibility of the southern development area infrastructure and the proposed wind turbines, with theoretical visibility of the proposed wind turbines becoming much more intermittent. In this part of the LCT there is a limited area of combined visibility of the proposed wind turbines and substation and BESS in the northern development area on the north-east slopes at Distinkhorn. However, as noted above, actual visibility of these elements beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area.

5.8.112 The existing Galawhistle Wind Farm overlaps the eastern edge of the LCT. The operational Bankend Rig Wind Farm is located close to the LCT to the north of Middlefield Law and the under construction/operational Cumberhead West and Cumberhead wind farms are located adjacent to the eastern edge of the LCT. The proposed turbines would introduce tall vertical structures that would extend up to 230 m to blade tip (T6 would extend up to 200 m to blade tip) in an area whose character is influenced by these existing wind farms which would mean that the proposed turbines in the northern development area would not introduce new features into the landscape.

5.8.113 The solar array, substations and BESS located within the southern development area would introduce a new, notable change to the character of the valley in which they are located. The solar panels have been sited within the landscape pattern of enclosed agricultural fields and the proposed landscape mitigation planting (see **Figure 5.26**) would supplement and reinforce this existing landscape patten, helping to assimilate the development into the landscape.

5.8.114 The Proposed Development would introduce a medium high magnitude of change and a **moderate major significant effect** that would extend approximately 3 km to the south-east from the northern development area to approximately Spirebush Hill, Starpet Rig, south for approximately 3 km to Middlefield Law and approximately 3.5 km to the south-west to Meanlour Hill. These effects would be introduced by the proposed turbines located in the northern development area.

5.8.115 To the south of Middlefield Law, the Proposed Development within the southern development area would introduce a medium high magnitude of change and a **moderate major significant effect**. These effects would extend from Middlefield Law for approximately 2.5 km to the south-east, to the edge of the LCT, approximately 3 km to the north-east of the southern development area to Starpet Rig and Patrick Burn and approximately 1.7 km to the west of the southern development area to Aikencleugh.

5.8.116 To the south-east of Starpet Rig, theoretical visibility of the proposed wind turbines located in the northern development area is intermittent and there is only a limited area of theoretical visibility of the southern development area infrastructure between Starpet Rig and Sclanor Hill, with no predicted visibility from Glenbuck. Considered with the close proximity of this part of the LCT to the existing wind farms to the immediate east, the Proposed Development would introduce a low medium magnitude of change, resulting in a **moderate effect** that would be **not significant**. These effects would extend south-east from Starpet Rig for approximately 4.5 km to the south-eastern corner of the LCT.

5.8.117 To the west of Aikencleugh, there is intermittent theoretical wind turbine visibility to the south-west of Meanlour Hill and combined wind, solar and BESS visibility on the east-facing slopes of Auchenlongford. However, with increasing distance from both the northern and southern development areas, the magnitude of change introduced by the Proposed Development would be low medium, resulting in a **moderate effect** that would be **not significant**. These effects would extend west from Aikencleugh for approximately 5.5 km.

5.8.118 As noted above, to the north-west of Blackside there is no further combined visibility of the southern development area infrastructure and the proposed wind turbines, with theoretical visibility of the proposed wind turbines becoming much more intermittent. In this part of the LCT there is a limited area of combined visibility of the proposed wind turbines and substation and BESS in the northern development area on the north-east slopes at Distinkhorn. However, as noted above, actual visibility of these elements beyond the northern development area would be restricted.

5.8.119 In this part of the LCT, the increasing distance from the proposed turbines reduces their influence on the character of this part of the LCT. Between approximately 5 and 9 km at Tulloch Hill to the west of the northern development area, the magnitude of change introduced would to low, resulting in a **minor moderate effect** that would be **not significant**.

5.8.120 To the west of Tulloch Hill there is a break in theoretical visibility due to landform, with limited intermittent visibility beyond. Considered with the increasing distance the Proposed Development would introduce no greater than a low to very low magnitude of change to this part of the LCT and a **minor effect** that would be **not significant**. This effects would extend between approximately 9.5 km and 14.6 km to the west of the Proposed Development.

LCT 7c East Ayrshire Lowlands located to the south-west of the southern development area

5.8.121 Located approximately 2.6 km to the south-west of the southern development area, the LCT extends for over 14 km to the south-west across Airds Moss and to the north-east and south-west of Auchinleck. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there are small intermittent pockets of combined visibility of the proposed wind turbines and the infrastructure located in the southern development area but no combined visibility with the alternative (backup) substation and BESS located in the northern development area.

5.8.122 As illustrated by **Figure 5.16**, combined theoretical visibility of the substations, BESS and solar array occurs from the north-eastern edge of the LCT and extends south-westwards to Airds Moss for approximately 3.3 km before there is a break in the theoretical visibility at Airds Moss. Beyond this, there is intermittent theoretical visibility of the solar panels only with isolated pockets of combined substation, BESS and solar array visibility to a distance of approximately 10.3 km from the north-eastern edge of the LCT. However, given the distance of the LCT from the southern development area and the relative low height of these structures and their influence on the character of LCT would be very limited.

5.8.123 In comparison, theoretical visibility of the proposed turbines is more extensive up to a distance of approximately 9.6 km from the north-eastern edge of the LCT, beyond which theoretical visibility of the proposed turbines is more intermittent.

5.8.124 Referring to **Figure 5.16**, the majority of theoretical visibility of the Proposed Development within this LCT occurs due to the predicted visibility of the proposed wind turbines located within the northern development area. Theoretical visibility of the proposed turbines is more extensive up to a distance of approximately 9.6 km from the north-eastern edge of the LCT, beyond which theoretical visibility of the proposed turbines becomes more intermittent. Therefore, effects on this LCT arise largely from the proposed wind turbines located in the northern development area.

5.8.125 Between approximately 2.6 and 7 km from the southern development area, the Proposed Development would introduce a low magnitude of change and a **minor moderate** effect that would be **not significant**. Beyond approximately 7 km, the increasing distance from the Proposed Development and the level of intervening screening provided by topography and tree cover would means that the magnitude of change would reduce to very low with effects reducing to **minor** and **not significant**.

LCT 10 Upland River Valley located to the north-west of the northern development area

5.8.126 This LCT extends to the west and east of Darvel within the Irvine Valley to the north-west of the northern development area. With reference to **Figure 5.16**, there are small intermittent pockets of combined visibility of the proposed wind turbines and the alternative (backup) substation and BESS located in the northern development area. However, as noted earlier in the assessment, actual visibility of the substation and BESS beyond the northern development area would be restricted by trees along the western and south-western edge of the northern development area. **Figure 5.16** also illustrates that there would be no combined visibility of any of the infrastructure located within the southern development area. Therefore, effects on this LCT are considered to arise as a result of the proposed wind turbines located in the northern development area.

5.8.127 There are no wind turbines located within this LCT. However, there are views from parts of the LCT to the existing Dungavel and Bankend Rig wind farms that are located in LCT 7A i as defined in the SLLCSWE. The proposed turbines would introduce tall vertical structures that would extend up to 230 m to blade tip (T6 would extend up to 200 m to blade tip) in an adjoining character area. However, the character of available views is already influenced in part by these existing wind turbines which would mean that the Proposed Development would not introduce new features into the landscape.

5.8.128 Referring to **Figure 5.16**, theoretical visibility of the proposed turbines extends between approximately 3.6 km to 6.5 km from the northern development area. However, this part of the LCT is well-wooded thereby limiting the influence of the Proposed Development on this part of the LCT. At greater distance, there is slightly greater theoretical visibility from the northern side of the valley to the north of Darvel, with more intermittent theoretical visibility of the Proposed Development from the southern valley side.

5.8.129 Between approximately 3.6 km to 6.5 km from the northern development area, the Proposed Development would introduce a low magnitude of change and a **minor moderate** effect that would be **not significant**. Beyond 6.5 km, the increasing distance from the Proposed Development and the greater intermittent theoretical visibility would mean that the magnitude of change would reduce to very low with effects reducing to **minor** and **not significant**.

LCT 10 Upland River Valley located to the south of the southern development area

5.8.130 This LCT is located to the south of the southern development area in the Ayr Valley and extends from Glenbuck in the east to near Nethershield in the west. Effects on this unit would be indirect as none the proposed infrastructure would be located within it. With reference to **Figure 5.16**, there are limited areas of combined visibility of the proposed wind turbines and the infrastructure located in the southern development area which occur to the north of Muirkirk and at higher elevations on the southern valley side. There is no predicted combined visibility with the alternative (backup) substation and BESS located in the northern development area.

5.8.131 **Figure 5.16** illustrates some combined visibility of the proposed wind turbines and infrastructure located in the southern development area would occur to the north of Muirkirk. However, actual visibility of the southern development area infrastructure would be screened by existing woodland on the high ground to the north of the settlement in views from the northern part of the LCT. Some very limited views may be available from the higher ground along the southern edge of the LCT between Kames and Nether Wellwood and from the western end of the LCT. However, the distance between the southern development area and these parts of the LCT limits their influence on the visual character of the LCT.

5.8.132 Given that actual visibility of the southern development area infrastructure would be very limited, it is the proposed turbines in the northern development area that would influence the character of northerly views from the LCT to a greater degree. As illustrated by **Viewpoint 2**, views of the proposed turbines in the northern development area would be screened from the northern parts of the LCT around Muirkirk. **Viewpoint 3** illustrates that views of the proposed turbines would be available from the southern edge of the LCT. Where views are available, the proposed turbines would be set beyond the hills to the north of Muirkirk which limits their influence on the character of the LCT.

5.8.133 The Proposed Development would introduce no greater than a low magnitude of change to the character of the LCT, resulting in a **minor moderate effect** that would be **not significant**.

LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley

5.8.134 This LCT unit is located approximately 3 km to the south of the southern development area and extends to over 14 km to the south. It comprises part of the north-west facing slopes to the south of the Ayr Valley that extend west from Little Cairn Table to Cairn Table (**Viewpoint 4**)**,** Wardlaw Hill and to Cairn Hill. Effects on this unit would be indirect as none the proposed infrastructure would be located within it.

5.8.135 With reference to **Figure 5.16**, there is combined visibility of the proposed wind turbines, solar array and the substation/BESS located in the southern development area and limited combined visibility of all proposed infrastructure in the northern and southern development areas from the upper north-western slopes of Cairn Table and Stony Hill. These combined effects would be experienced at distances in excess of 8.5 km from the northern development area. At lower elevations, there would be combined visibility of the proposed wind turbines, solar array and the substation/BESS located in the southern development area on part of these north-west facing slopes.

5.8.136 Given the relatively low height of the solar panels, substation and BESS in the southern development area and the screening of the substation/BESS in northern development area, it is considered that it is the proposed turbines that will contribute a greater proportion of the effects on the LCT.

5.8.137 Views northwards from the LCT are already influenced by the existing Whitelee, Kype Muir and Cumberhead West wind farms. As such, the proposed turbines within the northern development area would not introduce new features into the adjacent landscapes. However, it is acknowledged that the southern development infrastructure would introduce new elements into views from the LCT.

5.8.138 The Proposed Development would introduce a low magnitude of change to the character of the LCT, resulting in a **minor moderate effect** that would be **not significant**. These effects would be experienced at a distance of between 3 km and 8 km from the southern development area extending to the south-eastern edge of the LCT up to a distance of approximately 10.3 km.

5.8.139 Referring to **Figure 5.16**, beyond approximately 8 km from the southern development area, theoretical visibility is very intermittent with large tracts of the LCT to the north and south of Glenmuir Water where no visibility is predicted. At distances beyond 8 km from the southern development area, the Proposed Development would introduce a very low magnitude of change and a **minor effect** that would be **not significant**.

Table 5.6 – Summary of Effects on Landscape Character During Operation

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
South Lanarkshire				
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog *Between approximately 2 and 5 km*	Medium	Medium high	Moderate major	**Yes**
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog *Between approximately 5 and 10 km*	Medium	Medium	Moderate	No
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog *Between approximately 10 and 13.3 km*	Medium	Low	Minor moderate	No
LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog *Beyond approximately 13.3 km*	Medium	Very low	Minor	No
LCT 7 Rolling Moorland located to the north of the northern development area at Hawkwood Hill *Extending approximately 5 km to the north*	Medium	Low medium	Minor moderate	No
LCT 7 Rolling Moorland located to the north of the northern development area at Hawkwood Hill *Beyond approximately 5 km to the north.*	Medium	No change	No effects	No
LCT 7 Rolling Moorland located to the north-east of the northern development area at Dunside Rig and Grouse Hill *Extending approximately 5 km to the north-east.*	Medium	Low medium	Minor moderate	No
LCT 7 Rolling Moorland located to the north-east of the northern development area at Dunside Rig and Grouse Hill *Beyond approximately 5 km to the north-east*	Medium	No change	No effects	No
LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig *Extending approximately 3 km to the south-west of the northern development area*	Medium	Medium high	Moderate major	**Yes**
LCT 7 Rolling Moorland located approximately 1.8 km to the west of the northern development area at Mill Rig *Beyond approximately 3 km to the south-west of the northern development area*	Medium	Medium	Moderate	No
LCT 7 Rolling Moorland located to the south of the Ayr Valley *Between approximately 8.5 km and 10.3 km*	Medium	Low	Minor moderate	No

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *Extending approximately 1.7 km to the north-east and 3 km to the south-west of the northern development area*	Medium	Medium high	Moderate major	**Yes**
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *Beyond approximately 1.7 km to the north-east of the northern development area*	Medium	Medium	Moderate	No
LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) *Beyond approximately 3 km to the south-west of the northern development area*	Medium	Medium	Moderate	No
LCT 8 i Upland River Valley - Avon Water *Within approximately 3 km*	Medium high	Medium	Moderate major	**Yes**
LCT 8 i Upland River Valley - Avon Water *Between approximately 3 and 5 km*	Medium high	Low medium	Moderate	No
LCT 8 i Upland River Valley - Avon Water *Between approximately 3 and 5 km*	Medium high	Very low	Minor	No
East Ayrshire				
LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area *Between approximately 2.6 and 7 km from the southern development area*	High	Low	Minor moderate	No
LCT 7c East Ayrshire Lowlands located approximately 2.6 km to the south-west of the southern development area *Beyond approximately 7 km from the southern development area*	High	Very low	Minor	No
LCT 10 Upland River Valley located to the north-west of the northern development area in the Irvine Valley *Between approximately 3.6 and 6.5 km from the northern development area*	High	Low	Minor moderate	No
LCT 10 Upland River Valley located to the north-west of the northern development area in the Irvine Valley *Beyond approximately 6.5 km from the northern development area*	High	Very low	Minor	No
LCT 10 Upland River Valley located to the south of the southern development area in the Ayr Valley	High	Low	Minor moderate	No

Landscape Character Type	Sensitivity	Magnitude	Level of Effect	Significant
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending approximately 3 km to the south-east and south and approximately 3.5 km to the south-west from the northern development area*	Medium high	Medium high	Moderate major	**Yes**
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending approximately 2.5 km to the south-east of Middlefield Law, 3 km to the north-east and 1.7 km to the west of the southern development area*	Medium high	Medium high	Moderate major	**Yes**
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending approximately 4.5 km south-east from Starpet Rig*	Medium high	Low medium	Moderate	No
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Extending approximately 5.5 km west from Aikencleugh*	Medium high	Low medium	Moderate	No
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Between approximately 5 and 9 km to the west of the northern development area*	Medium high	Low	Minor moderate	No
LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley *Between approximately 9.5 and 14.6 km to the west of the northern development area*	Medium high	Low to very low	Minor	No
LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley *Between approximately 3 and 8 km from the southern development area*	Medium high	Low	Minor moderate	No
LCT 18a East Ayrshire Plateau Moorlands to the south of the Ayr Valley *Beyond approximately 8 km from the southern development area*	Medium high	Low	Minor moderate	No

Bold text denotes a significant effect

Summary of Effects on Landscape Character During Operation

5.8.140 Within South Lanarkshire, the Proposed Development would result in significant effects to four of the LCTs brought forward into detailed assessment as defined in the SLLCSWE. Significant effects would occur to LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) where the northern development area is located extending approximately 1.7 km to the north-east and 3 km to the south-west of the northern development area. The Proposed Development would also result in significant effects to LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog within approximately 5 km of the northern development area. Significant effects would also occur within approximately 3 km to the south-west of the northern development area within LCT 7 Rolling Moorland located approximately 1.8 km to the west of the

northern development area at Mill Rig and within approximately 3 km to LCT 8 i Upland River Valley - Avon Water.

5.8.141 Within East Ayrshire, the Proposed Development would result in significant effects to one LCT brought forward into detailed assessment as defined in the EALWCS. Significant effects would occur to LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley extending approximately 3 km to the south-east and south and approximately 3.5 km to the south-west from the northern development area and approximately 2.5 km to the south-east of Middlefield Law, 3 km to the north-east and 1.7 km to the west of the southern development area.

5.8.142 As these effects are contained within the immediate vicinity of the Proposed Development they are considered to be localised.

Effects on Landscape Character during Decommissioning

5.8.143 It is acknowledged that there would be some additional temporary effects during decommissioning of the Proposed Development after 40 years of operation, over and above those assessed under the heading of operational effects above. The effects resulting from decommissioning activities would be localised and relatively incidental when viewed in the context of the Proposed Development infrastructure being removed.

5.8.144 The effects on landscape character will therefore decrease incrementally as decommissioning progresses and as more turbines and associated foundations and hardstanding are removed.

5.8.145 The effects would be similar to those during the construction phase but in reverse.

5.8.146 Overall, it is considered that there would be a temporary additional high magnitude of change to LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) within the northern development area and a **moderate major significant effect** and a temporary additional medium magnitude of change and a **moderate significant effect** to LCT 18a East Ayrshire Plateau Moorlands to the north of Ayr Valley, extending approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT where the southern development area is located.

5.8.147 All other LCTs would experience no greater than a low magnitude of change and a minor moderate effect with these effects considered to be not significant.

5.8.148 The decommissioning effects of the Proposed Development on landscape character are temporary. Once decommissioning is complete, there would be no further effects upon landscape character.

Assessment of Visual Effects

5.8.149 Effects on visual amenity arise from changes to views resulting from the introduction of the Proposed Development. It comprises:

- An assessment of visual effects from the representative viewpoints; and
- An assessment of visual effects on receptor groups such as settlements, roads and core paths brought forward into detailed assessment.

5.8.150 The assessment has been carried out through a combination of site visits and desk study using the ZTVs, wirelines and photomontages.

5.8.151 In accordance with Civil Aviation Authority (CAA) CAP 764 turbines taller than 150 m require visible aviation lighting. As set out in **paragraphs 5.8.151** to **5.8.155** below a reduced visible aviation lighting scheme is proposed, which incorporates vertical directional intensity lighting. The lights are required to be at maximum intensity at 3 degrees above and 1 degree below horizontal. Light intensity reduces beyond those parameters. It is important to highlight that when not obscured by cloud, the visibility in the area of the turbines can be expected to exceed 5 km for the majority of the time and as such, the lights would be dimmed to 200 cd. Furthermore, it is important to note that intensity of the lights would reduce with increased distance from the aviation lights and the intensity at which a viewer perceives them at would also be dependent on how adapted their eye is to the dark.

5.8.152 The lighting scheme being put forward for the Proposed Development involves infra-red lights (that are not visible to the human eye) being installed on all turbines for operators with night vision capability. It is also proposed that there will be no requirement for intermediate lighting to be installed halfway between the nacelle and the ground-level.

5.8.153 Should the relevant regulatory actions concerning the mandatory carriage of a compatible Electronic Conspicuity system on aircraft be completed and signed into law the project could consider the installation an Electronic Conspicuity (i.e. transponder) based Aircraft Detection Lighting System. The installation of such a suitable Aircraft Detection Lighting System would significantly reduce the occasions when the lighting would be visible. A planning condition can be attached to the grant of consent which requires investigation and agreement to such a scheme, if regulatory approval for such systems becomes available. For the purposes of this assessment it has been assumed that turbines will require visible aviation lighting as set out above.

5.8.154 In order to carry out an assessment of the effects of visible aviation lighting the following assumptions have been made and applied in the figures and visualisations that have informed the assessment:

- Lighting is only shown on the hubs of the eight turbines proposed to be fitted with visible aviation lights (T1, T4, T6, T9, T11, T13, T16 and T18).
- No intermediate lighting is illustrated halfway between the nacelle and the ground-level.
- As the photography was taken in clear weather conditions when visibility was greater than 5 km the visualisations illustrate the reduced 200 cd intensity to reflect the lighting that would arise in those conditions as a result of the mitigation proposed (i.e. that the lighting will operate in the reduced 200 cd intensity where meteorological visibility is greater than 5 km and where visibility is less than 5 km the lights will operate at 2,000 cd). Nonetheless, these images represent the worst-case as should visibility be less than 5 km such that the 2,000 cd lighting was active, then these poor conditions would of themselves be such as to restrict the visibility of the lighting to no more than that of the 200 candela lighting seen in clear conditions.
- The reduction in the intensity of lights above and below the horizon has been illustrated on **Figure 5.9**. This ZTV shows the theoretical reduction in the candela intensity of the lights at vertical angles above and below the horizon to illustrate the reduction in the intensity of the lights at elevations below the level of the turbine lights.
- Whilst the lighting would reduce in intensity above and below the horizontal this reduction has not been illustrated in the night-time visualisations. As such the visualisations are a worst-case. This matter has however been considered within the assessment judgements.
- The visualisations illustrate the period after the commencement of Evening Civil Twilight, when sufficient ambient light remains for the landform of the landscape on which the wind farm is proposed, to remain partially visible.
- Whilst the implementation of a suitable Aircraft Detection Lighting System would significantly reduce the occasions when the lighting would be visible, this has not been factored into the judgements of lighting effects which focus on the 'worst-case' scenario of the period when the lighting would be visible. The benefits of a reduction in the lighting associated with the Aircraft Detection Lighting System are nonetheless a matter for the wider planning balance exercise, addressed separately in the application submission.
- It is noted that the matter of darkness adaption is also a relevant consideration, with some receptors, in particular car drivers, not perceiving the lighting in the same manner as if they were in a fully dark environment, due to their vision being influenced by lighting sources in their proximity (i.e. car headlights). The same would apply to residents of residential properties who were viewing the aviation lighting from a location with existing lighting present (i.e. it is

unlikely that residents would themselves be fully in a dark environment and their eyes therefore adapted to take in the full extent of the light from the turbines). This serves to further reduce the effects compared to how they are set out in the assessment, which again can be considered to represent a 'worst-case' position compared to what would be experienced by receptors in practice.

- The frequency in which a viewpoint is likely to be visited during the hours of darkness is not a factor which is considered within the assessment of magnitude or sensitivity. However, it should be noted that viewpoints at hills summits and on long distance footpaths would be unlikely to be visited after daylight hours. Any assessment of these receptors should therefore be considered a 'worst-case' scenario as in many cases the actual numbers of individuals who would be likely to experience the view would be very limited, although it is recognised that there will be a few individuals such as landscape photographers who may visit hilltops to take photographs at sunset or sunrise.
- It is understood that the value and susceptibility of visual receptors during the night-time period, may differ from during the day time period. For example, the value of views during the night-time period may be reduced due to the transient nature of views as people travel through the landscape, or that they may have some form of personal light for their safety, which would create an element of baseline light. It also reflects the limited time period during which the lights would be on when the features of the landscape could be perceived and appreciated before full darkness occurs. In this regard, the findings of the Reporters concerning this matter in the Crystal Rig IV Wind Farm Report to the Scottish Ministers are noted. Here it was concluded by the Reporters in paragraph 4.146 that '*we agree with the applicant that the value that can attributed to a view at night is low*'. In turn, the susceptibility of people experiencing night-time outdoors would depend in part on the degree to which their perception is affected by existing baseline lighting. In brightly lit areas, or when travelling on roads from where sequential views of lighting may already be experienced, the susceptibility of receptors is likely to be lower than from areas where the baseline contains no or limited existing lighting. It is noted that the matter of value and susceptibility of night-time views is not specifically addressed in the Guidelines for Landscape and Visual Impact Assessment due to the relatively new nature of this issue and that a bespoke approach to considering the value of night-time views is therefore required.

5.8.155 Further details about the approach and the methodology to the assessment of visible aviation lighting are set out in **Technical Appendix 5.2**.

Effects on Visual Receptors During Construction

Northern Development Area

5.8.156 Construction activities associated with the installation of the proposed wind turbines, alternative (backup) substation and BESS. tracks and associated infrastructure within the northern development area would be screened from most parts of the study area due to the topography of the Rolling Moorland with Forestry landscape character type (LCT 7 A i) where the northern development area is located. Construction activities would be visible from more elevated locations to the south of the River Ayr that allow views across the uplands where the Proposed Development is located and from locations near to the Site Access A from the B743 and to the north-west of the site.

5.8.157 From lower-lying locations in the southern part of the detailed 20 km LVIA study area within the Ayr Valley, the rising valley slopes would screen views of construction activity such as from **Viewpoint 2** at Muirkirk, **Viewpoint 3** on the River Ayr Way, **Viewpoint 5** at Nether Wellwood, **Viewpoint 6** on the B743 east of Nethershield and **Viewpoint 7** at Auchinleck. From such areas ground-level activities would be screened by landform. In these locations the additional visual effects, over and

above those addressed under the heading of Operational Effects below, would arise in relation to distant views of cranes erecting the proposed wind turbines.

5.8.158 The cranes would be visible for a relatively short period and would be incidental when considered in the context of the turbines being erected. It is assessed that any views of these works would result in a temporary additional **very low magnitude of change** and no greater than temporary **minor effect** which would be **not significant**.

5.8.159 From more elevated locations, such as from **Viewpoint 4** at Cairn Table to the south and **Viewpoint 8** at Loudon Hill, views extend across part of the northern development area that will allow distant views of construction activities and vehicular movements, in addition to the views of the cranes used to install the turbines and the installation of the substation/BESS. In such locations there would be a temporary additional **low magnitude of change** and a **minor moderate effect** that would be **not significant**.

5.8.160 From all other remaining viewpoints, ground-level activities would be screened through a combination of landform and vegetation. In these locations the additional visual effects, over and above those addressed under the heading of Operational Effects, would arise in relation to views of the cranes erecting the turbines.

5.8.161 The cranes would be visible for a relatively short period and would be incidental when considered in the context of the turbines being erected. It is assessed that any views of these works would result in a **very low magnitude of additional change** and no greater than a temporary **minor effect** which would be **not significant**.

Southern Development Area

5.8.162 Construction activities associated with the installation of the solar array, substations, BESS, access tracks and associated infrastructure in the southern development area would be screened from the majority the study area due to the topography of the Plateau Moorland - Ayrshire landscape character type (LCT 18a) and the landform to the immediate north and south of the southern development area. Construction activities would be partially visible from the more elevated north-west facing slopes to the south of the River Ayr, a small section of the B743 to the east and from the minor road that passes along the northern edge and crosses through the southern development area.

5.8.163 From more elevated locations, such as from **Viewpoint 4** at Cairn Table to the south and from the north-west facing slopes to the south of the River Ayr, views of construction activity would be partially screened by the landform to the immediate of the southern development area and by intervening tree cover. Where views are available, there would be a **temporary additional medium magnitude of change** and a **moderate significant effect**.

5.8.164 From the B743 to the immediate east, road users would experience oblique views of construction activity that would be partially screened and intervening tree cover. Where views are available, there would be a temporary additional **medium magnitude of change** and a **moderate significant effect**.

5.8.165 From the minor road that passes through the southern development area, road users would experience close-range views over a distance in excess of 4 km. Views would be intermittently screened by existing woodland blocks. However, given the distance over which the effects would be experienced and the proximity of the southern development area there would be a **temporary additional high magnitude of change** and a **moderate major significant effect**. These effects would also be experienced by walkers on Core Path B19 as the path passes along the southern edge of the southern development area.

5.8.166 From viewpoints in the northern part of the detailed 20 km LVIA study area (comprising **Viewpoint 1** and **viewpoints 8** through to **14** inclusive) views of construction activities in the southern development area would be screened by topography. As such, no additional temporary effects would be experienced.

5.8.167 From other viewpoints in the southern part of the detailed 20 km LVIA study area (comprising **Viewpoint 2**, **Viewpoint 3**, **Viewpoint 6**, **Viewpoint 7** and **Viewpoint 15**) views of construction

activities in the southern development area would be screened by topography or would be experienced at distance such that effects would be barely perceptible and no notable temporary effects would be experienced.

Effects During Operation on Visual Receptors

5.8.168 A detailed viewpoint assessment of the operational effects resulting from the Proposed Development is presented at **Technical Appendix 5.6** and this considers the long-term visual effects during the operational phase of the Proposed Development for each of the 15 viewpoints.

5.8.169 For each of the assessment viewpoints, a short description is given of the baseline view, and a judgement is provided regarding the sensitivity of the key receptors likely to experience the view.

5.8.170 This is followed by a description of the features of the Proposed Development within the northern and southern development areas that would be visible from that viewpoint. This includes a description of how many turbine hubs and blades would be visible and the ground-level components which would be visible. For each viewpoint, there is a comment on how vegetation or topography would affect the actual visibility of the turbines.

5.8.171 A judgement is then provided of the magnitude of change that would be experienced at each viewpoint during both daylight hours and the hours of darkness, the level of the effect on the view and a statement provided to clarify whether the effect is considered to be significant or not.

5.8.172 A summary of the sensitivity of the view, magnitude of change in the view, the level of effect and its significance is given in **Table 5.7** below. Where a viewpoint is representative of more than one type of visual receptor, the assessment carried forward into the table represents the most sensitive receptor group represented by the viewpoint.

5.8.173 With reference to the Viewpoint Assessment at **Technical Appendix 5.6**, when considered against the existing baseline it has been assessed that there would be a significant visual effect at three of the 15 representative viewpoints during daylight hours. These are as follows:

- Viewpoint 1 – Drumclog;
- Viewpoint 4 - Cairn Table; and
- Viewpoint 8 - Loudoun Hill.

5.8.174 It was further assessed that during the hours of darkness there would be no significant visual effects experienced from any of the representative viewpoint locations.

Table 5.7 – Summary of Effects on Representative Viewpoints During Operation

Viewpoint	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
1 – Drumclog (N)	High	High	Major	**Yes**	Medium	Medium	Moderate	No
2 - Victory Park, Muirkirk	High	Very low	No effects	No	Low	Very low	No effects	No
3 - River Ayr Way, Muirkirk (N)	High	Low medium	Moderate	No	Medium	Low	Minor moderate	No
4 - Cairn Table	Very high	Medium	Moderate major	**Yes**	Medium	Low	Minor moderate	No
5 - Nether Wellwood (A70)	Medium	Low	Minor moderate	No	Low	Very low	Negligible	No
6 - B743 (east of Nethershield) (N)	Medium	Medium	Moderate	No	Low	Low	Minor	No
7 - B705 (Auchlinleck) (Effects reported are based on residents)	High	No change Low if forestry felled	No change Minor moderate if forestry felled	No	Medium	No change Low if forestry felled	No change Minor moderate if forestry felled	No
8 - Loudoun Hill	High	Medium	Moderate	**Yes**	Medium	Low	Minor moderate	No
9 - A71, bridge crossing Calder Water (N)	Low	Medium	Minor moderate	No	Very low	Medium	Minor	No
10 - Strathaven War Memorial	High	Low	Minor moderate	No	Low	Low	Minor	No
11 - Minor road south-west of Lesmahagow	Medium	Low	Minor moderate	No	Low	Low	Minor	No

Viewpoint	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
12 - Black Hill	High	Low to very low	Minor moderate	No	Medium	Very low	Minor	No
13 - A70 Rigside (Effects reported are based on residents)	High	Low to very low	Minor	No	Medium	Very low	Minor	No
14 - Tinto Hill	Very high	Very low	Minor moderate	No	Medium	Very low	Minor	No
15 - Auchensaugh Hill	High	Very low	Minor	No	Medium	Very low	Minor	No

Bold text denotes a significant effect

(N) – Night-time visualisation produced from this viewpoint in addition to day-time visualisation.

Assessment of Effects on Visual Receptor Groups

5.8.175 This section considers the effects of the Proposed Development on the visual receptor groups brought forward into detailed assessment. Principal visual receptors are illustrated on **Figure 5.19**.

Construction Effects on Visual Receptor Groups

5.8.176 It is recognised that there would be some additional temporary visual effects during the construction of the Proposed Development over and above those assessed under the operational phase.

5.8.177 The vast majority of effects of note, when considering the construction phase, would be experienced within the local environs of the site, with views of construction in the northern development area restricted by areas of the remaining forestry along the western and south-western edges of the northern development area or by topography in the case of the southern development area.

5.8.178 The construction works would be visible from a number of locations within the local landscape. However, views of the construction phase would be restricted to views of cranes appearing above intervening landform and vegetation with ground-level components screened from view. These views would only be experienced for a relatively short duration during the construction, and they would be experienced within the context of the turbines being constructed.

5.8.179 Overall, it is assessed that there would be a low magnitude of additional effect during construction over and above the operational phase effects assessed below. It is assessed that any views of these works would result in a very low magnitude of additional change and no greater than a temporary additional **minor effect** which would be **not significant**.

Operational Effects on Visual Receptor Groups

Residential Receptors within 2 km of the Northern Development Area Proposed Turbines

5.8.180 As set out at **paragraph 5.6.67** in **Section 5.6**, there are 11 residential receptor locations within 2 km of the proposed wind turbines located in the northern development area. As agreed at scoping the effects on the residential properties at these locations have been considered in a RVAA and the location of these properties is illustrated on **Figure 5.7.1** in **Technical Appendix 5.7**.

5.8.181 The RVAA concluded that, when the experience from each property is considered in the round, its residents would not experience such an overbearing or overwhelming effect on their visual amenity that their property would become an unattractive place to live.

Residential Receptors within 1 km of the Southern Development Area

5.8.182 As set out in **paragraph 5.6.69** there are 10 residential receptor locations within 1 km of the proposed infrastructure within the southern development area, illustrated on **Figure 5.27**. It is generally accepted that residents are of high sensitivity to change in their view, and in all cases in this assessment, residents at each property have been considered to be of **high sensitivity**. The effects on these properties are considered below and not in **Technical Appendix 5.7**. While it is acknowledged that there is the potential for significant visual effects to be experienced from some of these properties, due to the relatively low height of the infrastructure located within the southern development area there would be no potential for the effects to be of such a scale that the residential visual amenity threshold is engaged.

Greenockdyke Farm

5.8.183 This property is located approximately 931 m to the nearest solar array in the southern development area. It is orientated north south and is accessed via a track leading from the minor road that passes through the southern development area. The main property has associated buildings to its immediate west and east sides and there is a belt of trees set to its east.

5.8.184 The combined development ZTV at **Figure 5.12** illustrates that the property would have theoretical visibility of the solar array only with no theoretical visibility of the proposed turbines, substations and BESS in the northern development area or the substations and BESS in the southern

development area. However, the adjacent belt of trees to the east of the property, together with existing trees along the western edge of the solar array as illustrated by the solar development area landscape strategy plan at **Figure 5.26** and the low height of the solar array would mean that views of the Proposed Development from the property and its access track would be largely screened. The Proposed Development would introduce a **low magnitude of change** and a **minor moderate effect** that would be **not significant**.

Bibbon Lodge (Financially Involved)

5.8.185 This property is located approximately 597 m to the west of the nearest solar array in the southern development area. It is orientated north south and is accessed via a track leading from the minor road that passes through the southern development area. The property has external amenity space to its north, western and southern sides and has small windows on its eastern façade that face the Proposed Development.

5.8.186 The combined development ZTV at **Figure 5.12** illustrates that the property would have theoretical visibility of the solar array only with no theoretical visibility of the proposed turbines, substations and BESS in the northern development area or the substations and BESS in the southern development area. Existing trees around Netherwood to the east of the property, together with existing trees along the western edge of the solar array as illustrated by the solar development area landscape strategy plan at **Figure 5.26** and the low height of the solar array would mean that views of the Proposed Development from the property and its access track would be largely screened. However, oblique views would be available from the eastern edge of the property and from the amenity space to the south of the property. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **not significant**.

Netherwood Farm & Netherwood Cottage (Financially involved)

5.8.187 These properties are located approximately 145 m to the south-west of the nearest solar array in the southern development area. The combined development ZTV at **Figure 5.12** illustrates that these properties would have theoretical visibility of the solar array only with no theoretical visibility of the proposed turbines, substations and BESS in the northern development area or the substations and BESS in the southern development area. The shallow valley of Netherwood Burn would provide a degree of topographical screening and trees along the western edge of the solar array and the existing stone wall and proposed planting along the southern edge of the solar array would provide further screening of the solar array. However, oblique, filtered views would be available from the eastern edge of the properties. Given the low height of the solar panels and the degree of screening, it is considered that the Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **not significant**.

Burnfoot Farm and Burnside (Financially involved)

5.8.188 These properties are located approximately 61 m to the west of the nearest solar array in the southern development area. They are accessed via a track leading from the minor road that passes through the southern development area. The group comprises two properties and are associated with a farm and boarding kennel business. Burnfoot Farm is situated on the western side of the access track with amenity space to their west while Burnside is situated on the eastern side of the access track and is orientated north-east to south-west facing the solar array with amenity space to its north-eastern adjacent to the solar array.

5.8.189 The combined development ZTV at **Figure 5.12** illustrates that the properties would have theoretical visibility of the solar array only with no theoretical visibility of the proposed turbines, substations and BESS in the northern development area or of the substations and BESS in the southern development area. However, part of the wider landholding to the north-west of Burnfoot Farm would have combined visibility of the substations, BESS and solar array.

5.8.190 Existing trees along the access track would filter views to the east towards the Proposed Development. Once the proposed landscape buffer along the western edge of the solar array establishes it would provide additional screening. As such, the Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **significant**.

Laigh Hall

5.8.191 This property is located approximately 276 m to the south of the nearest solar array in the southern development area. It is orientated north-west to south-east south and is accessed via a track leading from the minor road that passes through the southern development area. This access track passes between areas of solar panels that are setback from it and leads downslope towards the property that is situated at a lower elevation adjacent to Greenock Water. The property has external space around all sides of it.

5.8.192 The combined development ZTV at **Figure 5.12** illustrates that the property would have theoretical combined visibility of the solar array, substations and BESS but would not have any combined visibility of any of the infrastructure located in the northern development area. The area around the property is open with no existing trees between it and the southern development area. The Proposed Development would occupy a large proportion of northerly views from the property. The property is setback from the southern edge of the southern development area but the solar panels would be seen on the higher ground to the north and when accessing the property along its track in early years until the proposed planting has matured (refer to **Figure 5.26**). Although there is theoretical visibility of the substations and BESS these are situated over 1.2 km to the north-east and as such would be relative minor components in views from the property. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **significant**.

Middlefield Farm and Middlefield Cottage (Financially involved)

5.8.193 These properties are located within the southern development area, approximately 160 m from the nearest solar array and are accessed via a track that leads from the minor road that passes through the southern development area. The farm house is orientated north-west to south-east and the cottage is orientated north-east to the south-west and is situated to the immediate west of the farmhouse. There are associated outbuilding to the north forming a courtyard. There is an existing belt of trees to the north-east. There arefurther outbuildings to the north that provide a degree of screening.

5.8.194 The combined development ZTV at **Figure 5.12** illustrates that these properties would have combined theoretical visibility of the solar array, substations and BESS located in the southern development area with no visibility of any of the infrastructure located in the northern development area. The solar array would extend to the west, south and east of the property but would be setback from the property by approximately 230 m to the west, 160 m to the south and approximately 250 m to the east. With reference to **Figure 5.26** an extensive landscape buffer adjacent to the solar arrays is proposed to the south, west and east of these properties. Following construction, there would be direct views to the south of the and oblique views to the west and east from their access. However, there is a considerable offset between the Proposed Development and these properties. Over time as the screen planting matures, views of the solar array would be largely screened, as would the more distant BESS and substations to the east. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **not significant**.

The Forkings

5.8.195 The property is located approximately 182 m to the north of the nearest solar array in the southern development area and is situated adjacent to the minor road that passes through the southern development area. The property is orientated north north-west to south south-east with clear open views to the south in the direction of the southern development area. The property has external amenity space to its north side and a sun room on its western façade with windows facing south.

5.8.196 The combined development ZTV at **Figure 5.12** illustrates that the property would have combined theoretical visibility of the solar array, substations and BESS located in the southern development area with no visibility of any of the infrastructure located in the northern development area. Views would be available of the solar array to the west, south and east of the property but would be setback from the property by approximately 280 m to the west, 360 m to the south and approximately 180 m to the east. A substantial landscape buffer is proposed around the solar array to the south of the property near Middlefield as shown on **Figure 5.26** which will help screen views from The Forkings also once established. However, oblique views of the solar array would be

available to the west and east of the property along the minor road. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **not significant**.

Forkings Lodge (Financially involved)

5.8.197 The property is located approximately 227 m to the north of the nearest solar array in the southern development area and is situated to the north of the minor road that passes through the southern development area. The property is orientated north north-west to south south-east with clear open views to the south in the direction of the southern development area. The property has external amenity space to all sides and it position at a higher elevation above the level of the minor road.

5.8.198 The combined development ZTV at **Figure 5.12** illustrates that the property would have combined theoretical visibility of the solar array, substations and BESS located in the southern development area with no visibility of any of the infrastructure located in the northern development area. Views would be available of the solar array from its access. Views to the east would be partially screened by a belt of trees along the western edge of Forkings that is located to the east of the property. Furthermore, its elevated position means that most views would extend over the solar array which is situated at lower elevations below. The substantial landscape buffer proposed around the solar array near Middlefield would provide some filtering of southerly views. However, oblique views of the solar array would be available to south-west. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **significant**.

Linburn Farm (Financially involved)

5.8.199 The property is located within the southern development are approximately 205 m to the east of the nearest solar array. It is accessed via a track leading from the B743. The property is orientated north-west to south-east and is surrounded by farm buildings to its west and south sides. The property has external amenity space to its south eastern side.

5.8.200 The combined development ZTV at **Figure 5.12** illustrates that the property would have combined theoretical visibility of the solar array, substations and BESS located in the southern development area and the proposed turbines located in the northern development area. However, referring to the blade tip ZTV at **Figure 5.3** and the hub height ZTVs at **Figure 5.4** and **5.5** views from the property would be limited to blade tips only. The solar array is located approximately 185 m to the west of the property and the substations and BESS are located over 295 m to the south-west. Views from the property are mainly orientated to the south-east, away from the southern development area. However, oblique views may be available towards the solar array, substations and BESS but would be largely screened by intervening farm buildings and proposed screen planting once mature. Oblique views would be available from the access track to the north of the property. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **not significant**.

Blackside Farm

5.8.201 The property is located approximately 660 m to the east of the nearest solar array in the southern development area and is accessed a via track that leads east from the B743. The property is orientated broadly west to east and is surrounded by amenity space to the west, north and east, although the main amenity areas are to the north and east of the property.

5.8.202 The combined development ZTV at **Figure 5.12** illustrates that the property would have combined theoretical visibility of the solar array in the southern development area and the proposed turbines located in the northern development area. Referring to the hub height ZTVs at **Figure 5.4** and **5.5** a limited number of hubs would be visible above the landform to the north of the property situated over 4 km to the north. The solar array is located approximately 660 m to the west, the short duration BESS is located approximately 707 m to the south-west and the solar development substation is located approximately 805 m to the south-west. Views would be partially screened by trees situated to the immediate west of the property. However, oblique views may be available towards the solar array from certain parts of the curtilage. With reference to **Figure 5.26**, a substantial landscape buffer is proposed along the eastern edge of the solar array near Linburn Farm that will assist in screening the solar array in views from the property once matured. Trees on the

northern boundary of the property would also partially screen views of the proposed turbines in the northern development area. Given the distance between the property and the northern and southern development area, the proposed Development would introduce a **low magnitude of change** and a **minor moderate effect** that would be **not significant**.

Table 5.8 – Summary of Effects on Residential Receptors within 1 km of the Solar, BESS and Substations within the Southern Development Area

Property	Sensitivity	Magnitude	Level of Effect	Significant
Greenockdyke Farm *Located approximately 931 m to the west of the nearest solar array in the southern development area*	High	Low	Minor moderate	No
Bibbon Lodge (Financially Involved) *Located approximately 597 m to the west of the nearest solar array in the southern development area*	High	Medium	Moderate	No
Netherwood Farm & Netherwood Cottage (Financially involved) *Located approximately 145 m to the south-west of the nearest solar array in the southern development area*	High	Medium	Moderate	No
Burnfoot Farm and Burnside (Financially involved) *Located approximately 61 m to the west of thenearest solar array in the southern development area*	High	Medium	Moderate	**Yes**
Laigh Hall *Located approximately 276 m to the south of the nearest solar array in the southern development area*	High	Medium	Moderate	**Yes**
Middlefield Farm & Middlefield Cottage (Financially involved) *Located within the southern development area and approximately 160 m to the nearest solar array*	High	Medium	Moderate	No
The Forkings *Located approximately 182 m to the north of the nearest solar array in the southern development area*	High	Medium	Moderate	No

Property	Sensitivity	Magnitude	Level of Effect	Significant
Forkings Lodge (Financially involved) *Located approximately 227 m to the north of the nearest solar array in the southern development area*	High	Medium	Moderate	**Yes**
Linburn Farm (Financially involved) *Located within the southern development area approximately 205 m to the nearest solar array*	High	Medium	Moderate	No
Blackside Farm *Located approximately 660 m to the east of the nearest solar array in the southern development area*	High	Low	Minor moderate	No

Bold text denotes a significant effect

Effects on Settlements

Muirkirk

5.8.203 Muirkirk is located approximately 1.4 km to the south of the southern development area within the upper section of the lower-lying River Ayr valley. The settlement is bordered to its northern side by the higher ground of Burnfoot Moor and to its south by the rising north-east facing slopes to the south of the river.

5.8.204 The southern development area combined development ZTV at **Figure 5.10** illustrates that there would be practically no visibility of any of the infrastructure located in the southern development area from the settlement, with the exception of a very limited area of predicted visibility of the solar array from Kames to the south of the river. However, actual visibility would be restricted by intervening tree cover to the north of the settlement. The combined northern development area ZTV at **Figure 5.6** illustrates that there is no predicted visibility of the alternative (backup) substations and BESS in the northern development area and that there is only predicted visibility of the proposed turbines. Therefore, effects on the settlement arise solely from the proposed wind turbines located in the northern development area.

5.8.205 **Figure 5.3** illustrating the blade tip ZTV suggests that there would be theoretical visibility of a limited number of the blade tips from intermittent areas within the settlement. However, actual visibility would be less than predicted due to views being screened by surrounding buildings and trees within the settlement, as illustrated by **Viewpoint 2**. However, it is acknowledged that this is likely to vary at different points within the settlement such as from Kames where the greater distance from the high ground to the north of the settlement allows views over the settlement. Views from this part of the settlement are broadly represented by **Viewpoint 3**.

5.8.206 During daylight hours, the Proposed Development will occupy a medium lateral extent of the view with the turbines set behind the hills to the north of the settlement. This would introduce a **low medium magnitude of change**. Combined with the sensitivity of the residential receptors, this would result in a **moderate effect** that would be **not significant**.

5.8.207 During the hours of darkness, receptors within the settlement would be less susceptible and have a lower sensitivity due to the presence of existing light sources around properties and the A70 and B743 within the settlement.

5.8.208 With reference to the lit turbine ZTV at **Figure 5.8**, the majority of the settlement would not experience any views of the lit turbines. However, the northern part of the settlement would experience theoretical visibility of up to two lit turbines and the southern part of the settlement at Kames would experience theoretical visibility of up to four lit turbines.

5.8.209 With reference to the lit turbine lighting intensity ZTV at **Figure 5.9**, due to the difference in elevation between the aviation lights and the northern part of the settlement, their intensity would be perceived at a lower intensity than the stated 2,000/200 cd. Their intensity would also be reduced due to the distance from the settlement. This would result in a **low magnitude of change**.

5.8.210 Combining the medium sensitivity of the receptors and the magnitude of change, would result in a **minor moderate effect** during the hours of darkness that would be **not significant**.

Drumclog

5.8.211 Drumclog is located approximately 3.8 km to the north-west of the northern development area at the junction between the A71 and the B745.

5.8.212 The southern development area combined development ZTV at **Figure 5.10** illustrates that there will be no visibility of any of the infrastructure located in the southern development area. The combined northern development area ZTV at **Figure 5.6** illustrates that there is no predicted visibility of the alternative (backup) substations and BESS in the northern development area and that there is only predicted visibility of the proposed turbines. Therefore, effects on the settlement arise solely from the proposed wind turbines located in the northern development area.

5.8.213 The existing Dungavel Wind Farm is a prominent feature on the horizon along with the existing Kype Muir and Bankend Rig wind farms.

5.8.214 **Figure 5.3** illustrating the blade tip ZTV illustrates that there would be theoretical visibility of up to all 18 turbines. **Figure 5.4** shows that there will be theoretical visibility of up to 15 turbine hubs available. Views from the settlement are represented by **Viewpoint 1**.

5.8.215 During daylight hours, the Proposed Development will occupy a medium to large lateral extent of the view and introduce a large scale of change with part of the group partially set back beyond the ridgeline and integrating with the existing Dungavel turbines. This would result in a **high magnitude of change** and a **major significant effect**.

5.8.216 During the hours of darkness, receptors within the settlement would be less susceptible and have a lower sensitivity due to the presence of existing light sources around properties within the settlement, from vehicles travelling along the A71 and the B745 and the existing Kype Muir Extension aviation lights.

5.8.217 With reference to the lit turbine ZTV at **Figure 5.8**, the settlement would experience views of up to all eight lit turbines. The lit turbine lighting intensity ZTV at **Figure 5.9** illustrates that, due to the difference in elevation between the aviation lights and the settlement, they would be perceived at a much lower intensity than the stated 2,000/200 cd. This would introduce in a **medium magnitude of change**.

5.8.218 Combining the sensitivity of the receptors and the magnitude of change, would result in a **moderate effect** during the hours of darkness that would be **not significant**.

Gilmourton

5.8.219 The settlement is located approximately 4.1 km to the north of the northern development area at the junction between the A71 and the B745.

5.8.220 The southern development area combined development ZTV at **Figure 5.10** illustrates that there will be no visibility of any of the infrastructure located in the southern development area. The combined northern development area ZTV at **Figure 5.6** illustrates that there is no predicted visibility of the alternative (backup) substations and BESS in the northern development area and that there is only predicted visibility of the proposed turbines. Therefore, effects on the settlement arise solely from the proposed wind turbines located in the northern development area.

5.8.221 The existing Dungavel Wind Farm is a prominent feature on the horizon along with the existing Kype Muir and Bankend Rig wind farms.

5.8.222 **Figure 5.3** illustrating the blade tip ZTV illustrates that there would be theoretical visibility of up to all 18 turbines. **Figure 5.4** shows that there will be theoretical visibility of up to nine turbine hubs available.

5.8.223 During daylight hours, the Proposed Development will occupy a small to medium lateral extent of the view and introduce a small scale of change with some of the proposed turbines partially set beyond Dungavel Hill and integrating with the existing Dungavel and Kype Muir Extension turbines. Despite the larger size of the proposed turbines, they appear similar in scale to the existing turbines already present within the view due to the greater distance between the settlement and the Proposed Development turbines. This would result in a **medium magnitude of change** and a **moderate significant effect**.

5.8.224 During the hours of darkness, receptors within the settlement would be less susceptible and have a lower sensitivity due to the presence of existing light sources around properties within the settlement and due to the existing Kype Muir Extension aviation lights that are already present within the view.

5.8.225 With reference to the lit turbine ZTV at **Figure 5.8**, the settlement would experience views of up to all eight lit turbines. The lit turbine lighting intensity ZTV at **Figure 5.9** illustrates that, due to the difference in elevation between the aviation lights and the settlement, they would be perceived at a much lower intensity than the stated 2,000/200 cd. This would introduce in a **low medium magnitude of change**.

5.8.226 Combining the sensitivity of the receptors and the magnitude of change, would result in a **minor moderate effect** during the hours of darkness that would be **not significant**.

Table 5.9 – Summary of Effects on Settlements During Operation

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
Muirkirk	High	Low medium	Moderate	No	Medium	Low	Minor moderate	No
Drumclog	High	High	Major	**Yes**	Medium	Medium	Moderate	No
Gilmourton	High	Medium	Moderate	**Yes**	Medium	Low	Minor moderate	No

Bold text denotes a significant effect

Core Paths and Long Distance Walking Routes

5.8.227 The following assessment focuses on those core paths identified in the filtering exercise at **Technical Appendix 5.5** as having the potential to experience significant effects.

5.8.228 In accordance with the methodology set out in **Technical Appendix 5.1** the sensitivity of users of public rights of way can vary between medium and very high depending on the reason for which they are using the route. However, unless otherwise stated the sensitivity of walkers using these rights of way is considered to be **high**. A summary of the effects is presented at **Table 5.10** below.

South Lanarkshire core paths EK/1456/1, EK/1457/1, EK/1458/1, EK/5844/1 – Dungavel, EK/5841/1, EK/5852/1, EK/5843/1, crossing through the northern development area

5.8.229 Prior to entering the northern development area several of these paths cross through the operational Dungavel Wind Farm to the immediate north of the northern development area. As such, receptors would already have experienced close-range views of the wind turbines reducing their susceptibility and leading to the sensitivity of these receptors being judged to be **medium**.

5.8.230 Due to the visually contained nature of Dungavel Forest, and as illustrated by the combined southern development area ZTV at **Figure 5.10**, no views would be available of any of the infrastructure located within the southern development area. Receptors would experience close-range views of the proposed turbines and, referring to the combined northern development area ZTV at **Figure 5.6**, views of the alterative (backup) substation and BESS in part of the forest over a limited extent of Core Path EK/1456/1 extending to approximately 1 km. Views would be partially restricted by retained forestry blocks but would be available where areas had been felled or when passing turbine which have been keyholed into the forestry blocks.

5.8.231 During daylight hours receptors would experience a **high magnitude of change**. Combined with their sensitivity this would result in a **moderate major effect** that would be **significant**.

5.8.232 During the hours of darkness, referring to the lit turbine ZTV at **Figure 5.8**, views of up to all eight lit turbines would be available from parts of the forest. However, actual visibility would be reduced by forestry trees. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9** where views of the turbine lights are available, they would be perceived at a much lower intensity due to the difference in elevation between the lights and these routes.

5.8.233 During the hours of darkness receptors would experience a **medium magnitude of change** Combining the lower sensitivity of the receptors during the hours of darkness with the magnitude of change results in receptors experiencing a **minor moderate effect** that would be **not significant**.

East Ayrshire core path B19, crossing through the southern development area

5.8.234 Core Path B19 follows the minor road leading from the B743 towards Netherwood and north-eastwards towards Burnfoot Farm where it heads south-east, crosses Greenock Water and continues in a south-easterly direction towards Muirkirk across Burnfoot Moor. There is predicted combined visibility of the solar array, BESS and substations in the southern development area over an approximate 4.5 km section of the path, with only limited sections at Netherwood and near Muirkirk where theoretical visibility of only the solar array would be available.

5.8.235 Within the Greenock Water Valley, predicted visibility would be limited to views of the infrastructure within the southern development area, while there is predicted visibility of the proposed wind turbines from the southern ends of the route near Nether Wellwood and Muirkirk which would be largely limited to blade tip visibility.

5.8.236 However, given the proximity of the route to the southern development area, it is considered that effects on receptor views would arise largely due to views of the infrastructure located within the southern development area.

5.8.237 During daylight hours receptors would experience a **high magnitude of change**. Combined with their sensitivity this would result in a **major effect** that would be **significant**.

5.8.238 During the hours of darkness, referring to the lit turbine ZTV at **Figure 5.8**, views of up to two lit turbines would be available from a short section of the path at distances in excess of 6 km from the

proposed turbines in the northern development area. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9** where views of the turbine lights are available, they would be perceived at a much lower intensity due to the difference in elevation between the lights and the route. The intensity of the lights that would be visible would be further reduced due to the distance from the northern development area. Walkers using this route during the hours of darkness would also be likely to be carrying a torch which would reduce their adaptation to darkness which would reduce their sensitivity to medium.

5.8.239 During the hours of darkness receptors would experience a **very low magnitude of change** Combining the lower sensitivity of the receptors during the hours of darkness with the magnitude of change results in receptors experiencing a **minor effect** that would be **not significant**.

East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area

5.8.240 These routes generally follow the old railway line through the north-western part of the detailed 20 km LVIA study area, passing Drumclog. Views from these routes are represented by **Viewpoint 1**. Referring to the combined southern development area ZTV at **Figure 5.10**, there is no predicted visibility of any of the infrastructure located in the southern development area. Therefore, effects would arise solely from infrastructure located in the northern development area. With reference to the combined northern development area ZTV at **Figure 5.6**, theoretical visibility from these routes largely results from the proposed wind turbines, with only a short section to the south-west of Drumclog where there is predicted combined visibility of the substation, BESS and wind turbines. However, as noted earlier in the assessment actual visibility of the substations and BESS would be restricted by remaining areas of forestry plantation.

5.8.241 There is predicted visibility across the whole of these routes, with views of all 18 turbine blade tips and all hubs over an approximate 2 km section to the south-west of Drumclog and views of a limited number of turbine hubs for the remainder of these routes. Views of the existing Dungavel, Kype Muir and Kype Muir Extension windfarms are available from these routes.

5.8.242 Over an approximate 3.2 km section of these routes to the south-west of Drumclog receptors would experience relatively close-range, oblique to perpendicular views of the proposed turbines that would be seen in the context of the existing Dungavel Wind Farm. To the north-east of Drumclog, over a distance of approximately 3 km, the paths are further from the Proposed Development and views would be influenced to a greater degree by the existing Dungavel, Kype Muir and Kype Muir Extension wind turbines.

5.8.243 During daylight hours receptors would experience a **high magnitude of change** over approximately 3.2 km to the south-west of Drumclog. Combined with their sensitivity this would result in a **major effect** that would be **significant**. To the north-east of Drumclog, receptors would experience a **medium magnitude of change** over an approximate distance of 3 km. Combined with their sensitivity this would result in a **moderate effect** that would be **significant**.

5.8.244 During the hours of darkness, referring to the lit turbine ZTV at **Figure 5.8**, views of up to all eight lit turbines would be available from a short section of the path to the south-west of Drumclog, with views of fewer lit turbines from the remainder of these routes. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9**, the turbine lights would be perceived at a much lower intensity due to the difference in elevation between the lights and the route.

5.8.245 Existing views during the hours of darkness are influenced by lights around properties in the valley, transient lights of road users as well as the existing turbine lighting at Kype Muir Extension.

5.8.246 Walkers using this route during the hours of darkness would also be likely to be carrying a torch which would reduce their adaptation to darkness which would reduce their sensitivity to **medium**.

5.8.247 During the hours of darkness receptors would experience a **medium magnitude of change** Combining the lower sensitivity of the receptors during the hours of darkness with the magnitude of change results in receptors experiencing a **moderate effect** that would be **not significant**.

East Ayrshire EK/3780/1 to the north-east of the northern development area

5.8.248 This route crosses through the existing Kype Muir and Kype Muir Extension wind farms for the majority of its length and is also close to the existing Dungavel Wind Farm. As such, views experienced by receptors are strongly influenced by these existing wind turbines and receptors would experience similar views to those experienced by people using the core paths that cross through the northern development area. This reduces their susceptibility and leads to the sensitivity of these receptors being judged to be **medium**.

5.8.249 As illustrated by the combined southern development area ZTV at **Figure 5.10**, no views would be available of any of the infrastructure located within the southern development area. Referring to **Figure 5.6**, receptors would not experience any views of the alterative (backup) substation and BESS located in the northern development area.

5.8.250 Views of the proposed turbines in the northern development area would be partially restricted by retained forestry blocks but would be available where areas had been felled. During daylight hours receptors would experience a **medium magnitude of change** over a distance of approximately 4 km as the route crosses through these existing windfarms. Combined with their sensitivity this would result in a **moderate effect** that would be **not significant**.

5.8.251 At the southern end of the route, between Kype Muir Wind Farm and the northern development area, the Proposed Development would have a greater influence on views experienced by walkers due to the closer proximity of this section of the path to the Proposed Development. During daylight hours, this would introduce a **high magnitude of change** and a **moderate major significant effect** that would be experienced over an approximately 1 km section of the path.

5.8.252 During the hours of darkness, referring to the lit turbine ZTV at **Figure 5.8**, a limited number of lit turbines would be seen. However, actual visibility would be reduced by forestry trees. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9** where views of the turbine lights are available, they would be perceived at a much lower intensity due to the difference in elevation between the lights and these routes.

5.8.253 During the hours of darkness receptors would experience a **medium magnitude of change** Combining the lower sensitivity of the receptors during the hours of darkness with the magnitude of change results in receptors experiencing a **minor moderate effect** that would be **not significant**.

Core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17

5.8.254 This group of core paths lead up the north-west facing slopes to the south of the River Ayr towards Cairn Table. Given their orientation relative to the Proposed Development, walkers heading downslope would experience views towards the Proposed Development whereas the Proposed Development would be behind walkers heading towards the summit of Cairn Table. Effects on Cairn Table have been considered separately in the viewpoint assessment at **Technical Appendix 5.6**.

5.8.255 With reference to the Proposed Development combined ZTV at **Figure 5.12**, at higher elevations the alternative (backup) substation, BESS and tracks within the northern development area would be potentially visible but due to their relative low height and being sited over 11 km from the viewpoint they would be barely perceptible. Up to all 18 turbines would be visible and the solar array, BESS and substations would also be visible in the southern development area and would introduce a notable change to the landscape to the north of Muirkirk. During daylight hours this would introduce a **medium magnitude of change** resulting in a **moderate major significant effect**.

5.8.256 With reference to the lit turbine ZTV at **Figure 5.8**, up to all of the eight lit turbines would be visible from the majority of these routes. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9**, the intensity of the lights would be reduced from sections of the routes at lower elevations. Their intensity would also be reduced due to the distance of the viewpoint from the lit turbines. There would also be views available of security lighting within the southern development area but these would be configured to minimise light spill and would be PIR (Passive Infrared) activated and as such would not be permanently switched on.

5.8.257 However, views during the hours of darkness are already influenced by the amount of lights around properties in Muirkirk and in the valley below and also in the wider landscape to the north. Furthermore, it is considered that few walkers would venture along these routes during the hours of darkness and that if they did so, they would be using a torch to light their route which would reduce their adaptation to the dark. As such, the magnitude of change during the hours of darkness would be **low** and receptors would experience a **minor moderate effect** that would be **not significant**.

5.8.258 These effects would be experienced over the majority of these routes but would only be experienced by walkers descending towards Muirkirk for the reasons outlined above. However, it is important to acknowledge that at their start near Kames, effects would be lower due to the reduction in predicted visibility. Referring to **Viewpoint 3**, at the north-eastern end of these routes, during daylight hours the magnitude of change would be **low medium,** with effects assessed to be **moderate** and **not significant** and during the hours of darkness receptors would experience a **low magnitude of change** and **minor moderate effect** that would be **not significant**.

Long Distance Walking Routes

River Ayr Way

5.8.259 The River Ayr Way follows the length of the River Ayr from its source at Glenbuck Loch to the Firth of Clyde at Ayr. As it lies within a low-lying river corridor, ZTV coverage along the route is very patchy and intermittent. Referring to the southern development area combined ZTV at **Figure 5.10**, there is predicted visibility of the solar array over a limited section of the route to the south-west of Kames over a distance of approximately 1.1 km. However, views would be obscured by buildings and trees at Kames for an approximate 375 m section of this. Further west at Tibbie's Brig there is a further section of predicted visibility of the solar array over an approximate 365 m section of the route.

5.8.260 **Figure 5.12** illustrating the Proposed Development combined ZTV shows that theoretical visibility of the proposed turbines in the northern development area is also relatively limited. The first section occurs to the west of Glenbuck, where views would be limited to blade tips only over an approximate 750 m section. Over this section, walkers would experience perpendicular views to the route limited to blade tips only which would introduce no greater than a **very low magnitude of change** and a **minor effec**t that would be considered **not significant**. No lit turbines would be visible and so there would be no effects during the hours of darkness.

5.8.261 There is no further predicted visibility for approximately 2.5 km until the route reaches Crossflatt. From Crossflatt, predicted visibility commences and continues for approximately 5.8 km to near Upper Wellwood. Views from this section of the route are represented by **Viewpoint 3**. Views over this section would be intermittently screened. At Kames the route passes behind by buildings and trees that would screen views and to the west towards Upper Wellwood, views would be intermittently screened by trees adjacent to the path.

5.8.262 Over this section, the alternative (backup) substation, BESS and tracks within the northern development area would be screened by topography and no views would be available of any of the infrastructure located in the southern development area.

5.8.263 Where views are available, the proposed turbines would occupy a medium lateral extent of the broad, panoramic views that are available across the Ayr Valley, with the turbines appearing set behind the hills that border the northern valley side. The magnitude of change is assessed as **low medium** and receptors would experience a **moderate effect** that would be **not significant**.

5.8.264 During the hours of darkness, with reference to the lit turbine ZTV at **Figure 5.8**, up to four of the eight lit turbines would be visible from limited parts of this section of the route. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9**, due to the difference in elevation between the turbine lights and the viewpoint, the lights would be perceived at a much lower intensity. However, views during the hours of darkness are already influenced by the amount of lights around properties in Muirkirk and by street lighting. Furthermore, walkers would be likely to carrying a torch during the hours of darkness which would reduce their adaptation to darkness. During the hours of darkness receptors would experience a **low magnitude of change** and a **minor moderate effect** that would be **not significant**.

5.8.265 Further west, there is a small section of the route at Nether Wellwood where there is predicted visibility over an approximate 800 m section of the route. However, views would be largely screened by intervening tree belts and where available largely limited to blade tips only introducing a **low magnitude of change** and a **minor moderate effect** that would be **not significant** during daylight hours and a **low to very low magnitude of change** and a **minor effect** during the hours of darkness that would be **not significant**.

5.8.266 There is no further predicted visibility for approximately 5 km, until there is theoretical visibility for approximately 1.5 km near Upper Heilar. Referring to the Proposed Development combined ZTV at **Figure 5.12** theoretical visibility is limited to very intermittent visibility of the solar array and wind turbine visibility. At over 6 km from the southern development area, the solar array would be barely, if at all visible and, therefore, views would be limited to views of the proposed wind turbines. Over this section of the route, views are intermittently screened by intervening tree belts and where available the proposed turbines would be seen on the distant hills, partly contained by the Dungavel turbines, with views of up to all 18 hubs at a distance of over 10 km from the northern development area. This would introduce a **low magnitude of change** and a **minor moderate effect** that would be **not significant** during daylight hours. Referring to the lit turbine lighting intensity ZTV at **Figure 5.9** where views of the turbine lights are available, they would be perceived at a much lower intensity due to the difference in elevation between the lights and these routes. Their intensity would be further reduced due to the distance from the lit turbines and walkers would be likely to carrying a torch during the hours of darkness which would reduce their adaptation to darkness. During the hours of darkness, walkers on this section of the route would experience a **low magnitude of change** and a **minor moderate effect** that would be **not significant**.

5.8.267 There is no further visibility of the Proposed Development as the route continues westwards.

Table 5.10 – Summary of Effects on Core Paths During Operation

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
South Lanarkshire core paths EK/1456/1, EK/1457/1, EK/1458/1, EK/5844/1 – Dungavel, EK/5841/1, EK/5852/1, EK/5843/1, *crossing through the northern development area*	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
East Ayrshire core path B19, crossing through the southern development area *Extending over an approximate 4.5 km section of the route*	High	High	Major	**Yes**	Medium	Very low	Minor	No
East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area *Extending over 3.2 km section to the south-west of Drumclog*	High	High	Major	**Yes**	Medium	Medium	Moderate	No
East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area *Extending over 3 km to the north-east of Drumclog*	High	Medium	Moderate	**Yes**	Medium	Medium	Moderate	No

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
East Ayrshire EK/3780/1 to the immediate north-east of the northern development area *Extending over approximately 4 km section through Kype Muir and Kype Muir Extension*	Medium	Medium	Moderate	No	Low	Medium	Minor moderate	No
East Ayrshire EK/3780/1 to the immediate north-east of the northern development area *Extending over approximately 1 km between Kype Muir and the northern development area*	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
Core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17	High	Medium	Moderate major	**Yes**	Medium	Low	Minor moderate	No
Core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17 *North-western end near Kames*	High	Low medium	Moderate	No	Medium	Low	Minor moderate	No
River Ayr Way *750 m section to the west of Glenbuck*	High	Very low	Minor	No	Medium	No change	No effects	No

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
River Ayr Way *Approximate 5.8 km between Crossflat and near Upper Wellwood*	High	Low medium	Moderate	No	Medium	Low	Minor moderate	No
River Ayr Way *800 m section at Nether Wellwood*	High	Low	Minor moderate	No	Medium	Low to very low	Minor	No
River Ayr Way *Approximate 1.5 km section near Upper Heilar*	High	Low	Minor moderate	No	Medium	Low	Minor moderate	No

Bold text denotes a significant effect

Roads

5.8.268 The following assessment focuses on those routes identified in **Section 5.6** of being of particular relevance to the assessment and as having the potential to experience significant effects. In accordance with the methodology set out in **Technical Appendix 5.1** the sensitivity of users of roads can vary between low and high depending on the reason for which they are using the route. A summary of the effects is presented at **Table 5.11** below.

A70

5.8.269 Theoretical visibility from the A70 that passes through the Ayr Valley to the south of the northern and southern development areas is very limited and intermittent. Views from the road are represented by **Viewpoint 13** at Rigside to the east of the M74 at a distance of approximately 16.6 km to the east of the northern development area and **Viewpoint 5** at Nether Wellwood at a distance of approximately 3.1 km to the south south-west of the southern development area. Views from the A70 as it passes through Muirkirk are also broadly represented by **Viewpoint 2**, which is situated in Victory Park at a slightly higher elevation to the north of the road.

5.8.270 To the north-east of Douglas over an approximate 11.4 km section of the road that passes Rigside, road users experience oblique, glimpsed views of a large number of existing wind farms within the Hagshaw Energy Cluster that are intermittent screened. Although the Proposed Development turbines would be theoretically visible, due to the distance of this section of the road and the existing visual context that includes a large number of wind turbines, road users would experience a **low to very magnitude of change** and **negligible effect** during daylight hours and a **no effects** during the hours of darkness. These effects would be **not significant**.

5.8.271 To the south-west of Douglas there would be no, or very limited theoretical visibility of the proposed turbines over an approximate 21 km section of the road until Nether Wellwood. Where there is intermittent theoretical visibility within Muirkirk, actual visibility would be screened by properties and tree cover within the settlement. As such road users would be experience negligible effects during daylight hours and no effects during the hours of darkness.

5.8.272 The main area of predicted visibility from the A70 occurs to the south-west of Nether Wellwood and extends for approximately 7 km as the road heads south-west towards Cumnock. Referring to the Proposed Development combined ZTV at **Figure 5.12**, there would be theoretical combined visibility of the solar array, substations and BESS located in the southern development area over an approximate 2 km section of the road between Nether Wellwood and Boghead. However, referring to **Viewpoint 5**, actual visibility of these elements would be limited with road users experiencing a **low magnitude of change** and a **minor moderate effect** during daylight hours that would be **not significant**. During the hours of darkness, road users would experience a **low magnitude of change** and a **minor effect** that would be **not significant**.

5.8.273 To the south-west of Boghead, theoretical visibility is more intermittent and mainly limited to theoretical visibility of the proposed turbines. For the remaining 5 km section of the road between Boghead and Lugar where there is predicted visibility, the sensitivity of road users would reduce as the route exits the East Ayrshire Uplands and Moorland LLA. Road users would experience a **low magnitude of change** and a **minor effect** during daylight hours that would be **not significant**. During the hours of darkness, road users would experience a low magnitude of change and **negligible effects** that would be **not significant**.

A71

5.8.274 For the most part, the road is not located within a designated landscape although it is acknowledged that the north-eastern part of the road crosses the Middle Clyde LLA. However, given the amount of built development at Stonehouse, road users travelling along this road are judged to have **low sensitivity**.

5.8.275 Referring to **Figure 5.10** illustrating combined theoretical visibility of the solar array, substations and BESS in the southern development area, there is no predicted visibility of any of the infrastructure from the A71. Therefore, the effects experienced by people travelling along the A71 arise from infrastructure located within the northern development area. Views from the road are represented by **Viewpoint 9**, A71 Bridge over Calder Water and **Viewpoint 1** at Drumclog. Also located close to

the road are **Viewpoint 8** at **Loudoun Hill** and **Viewpoint 10 Strathaven War Memorial**. These two locations provide a useful reference of the visual context available but are located at much more elevated vantage points above the road.

5.8.276 From the north-east, the A71 passes through the Clyde Valley where the topography of the valley restricts views. Theoretical visibility to the south-east of the valley is also very limited and intermittent. As such over this approximate 6.6 km section, road users would experience no effects.

5.8.277 To the west of the M74, theoretical visibility commences to the north-east of Stonehouse at the M74 junction and continues to Strathaven over a distance of approximately 8.5 km. Views from the road are screened by adjacent buildings as the road passes through Stonehouse. Where views are available, views would be mainly limited to blade tips with the proposed turbines within the northern development area seen within the same part of the view and set behind the operational Kype Muir, Kype Muir Extension and Dungavel wind turbines. Over this section, during daylight hours, road users would experience no greater than a **low magnitude of change** and a **minor effect** that would be **not significant**. During the hours of darkness, given the very limited theoretical visibility that is mainly limited to blade tips only, road users would experience a **very low magnitude of change** and **no effects**.

5.8.278 Within Strathaven, road users would experience **no effects** as views are screened by adjacent buildings within the settlement. To the south-east of Strathaven, effects would gradually increase as the road progresses towards **Viewpoint 9** over a distance of approximately 4 km. Views south-west from the road are open and extend across the rural landscape towards the existing Kype Muir, Kype Muir Extension and Dungavel windfarms on the high ground to the south-east of the road. Over this section, during daylight hours, road users would experience a **medium magnitude of change** and a **minor moderate effect** that would be **not significant**. During the hours of darkness, existing views are influenced by the existing aviation lighting of the Kype Muir Extension Wind Farm and by the lights of other vehicles travelling along the road. The Proposed Development would introduce a **medium magnitude of change** and a **minor effect** that would be **not significant**.

5.8.279 These effects would gradually increase over a distance of approximately 4 km as the road approaches Drumclog, **Viewpoint 1**. The Proposed Development would be located approximately 3.8 km from the road at an oblique to perpendicular angle to the road. During daylight hours, road users would experience a **high magnitude of change** and a **minor moderate effect** that would be **not significant**. During the hours of darkness, existing views are influenced by the existing aviation lighting of the Kype Muir Extension Wind Farm and by the lights of other vehicles travelling along the road. The Proposed Development would introduce a **medium magnitude of change** and a **minor effect** that would be **not significant**.

5.8.280 These effects continue for approximately 4.3 km until the road passes Loudoun Hill. Over this section there would be theoretical combined visibility of the alternative (backup) substation and BESS in the northern development area. However, views of these elements would be screened by remaining forestry trees along the south-western edge of the northern development area.

5.8.281 To the west of Loudoun Hill theoretical visibility is limited to views of the wind turbines in the northern development area only and is more intermittent. From this section of the road that extend for approximately 4 km to Darvel, the Proposed Development would be partly obscured by intervening topography and due to the orientation of the road relative to the Proposed Development, it would occupy a small lateral extent of the broader view. Over this section, during daylight hours, road users would experience a **medium magnitude of change** and a **minor moderate effect** that would be **not significant**. During the hours of darkness, due to the limited views that are available of the lit turbines and the greater distance, the Proposed Development would introduce a **low magnitude of change** and a **negligible effect** that would be **not significant**.

5.8.282 To the west of Darvel, due to the greater distance from the Proposed Development and the level of intervening screening, during daylight hours, road users would experience no greater than a **low magnitude of change** and a **minor effect** that would be **not significant**. During the hours of darkness, given the very limited theoretical visibility that is mainly limited to blade tips only, road users would experience a **very low magnitude of change** and **no effects**.

B745

5.8.283 This short section of road links the A71 at Drumclog with the B743 that passes along the western edge of the northern development area. Referring to the northern development area combined ZTV at **Figure 5.6**, theoretical visibility is limited to wind turbine visibility, with no visibility of any other infrastructure located within the northern or southern development areas. Views from the road are represented by **Viewpoint 1** and would be mainly experienced by people travelling in a south-easterly direction towards the Proposed Development. Receptors travelling along this road are considered to have **medium sensitivity**.

5.8.284 From Drumclog the road descends towards Glengavel Water. Views would be intermittently screened by properties and roadside vegetation. Where views are available, the existing Bankend Rig, Dungavel and Kype Muir windfarms influence views and the Proposed Development would introduce additional turbines into this existing visual context but would introduce a **high magnitude of change** and lead to a **moderate major effect** that would be **significant** during daylight hours. During the hours of darkness the Proposed Development would introduce a **medium magnitude of change**, which combined with the lower sensitivity of road users at night would result in **minor moderate effect** that would be **not significant**.

B743 Northbound from Muirkirk

5.8.285 Crossing the uplands between the Ayr and Calder valleys, the road connects Muirkirk in the south and Strathaven in the north. Referring to **Technical Appendix 5.1**, road users travelling along this route are considered to have **medium sensitivity**.

5.8.286 From Muirkirk, northbound travellers would not experience any views for approximately 1.7 km until the road passes Black Hill. From Black Hill, road users would experience combined visibility of the proposed wind turbines in the northern development area and intermittent glimpsed views to the west of the road of the solar, BESS and substations in the southern development area. A limited number of the proposed turbines would appear in direct views along the road seen on the high ground that forms the horizon. Considered together with views of the infrastructure in the southern development area, during daylight hours this would introduce a **high magnitude of change** and a **moderate major effect** that would be **significant**. Referring to the turbine lighting intensity ZTV at **Figure 5.9** the lights would be perceived at a lower intensity due to the difference in elevation between the turbines lights and the road introducing a **medium magnitude of change**. Considered with the reduced sensitivity of road users at night, this would introduce a **minor moderate effect** that would be **not significant**. These effects would be experienced over a distance of approximately 2.1 km between Black Hill and Waterhead.

5.8.287 As the road continues northwards over a distance of approximately 2.5 km towards Dippal Rig, road users travelling northwards would not experience any further views of any of the infrastructure in the southern development area but the prominence of the proposed turbines would increase with the closer proximity to the northern development area. As such, during daylight hours road users would continue to experience a **high magnitude of change** and a **moderate major effect** that would be **significant** and a **medium magnitude of change** and a **minor moderate effect** that would be **not significant** during the hours of darkness.

5.8.288 At Dippal Rig the road passes through forestry plantation that would screen views of the alternative (backup) substation and BESS in the northern development area. The proposed turbines would extend above the height of the intervening forestry and would introduce a **high magnitude of change** and a **moderate major effect** that would be **significant** and a **medium magnitude of change** and a **minor moderate effect** that would be **not significant** during the hours of darkness. These effects would continue for approximately 3 km to Glengavel Reservoir.

5.8.289 As the road continues north-westwards from Glengavel Reservoir over a distance of approximately 2.1 km to the north-western corner of the northern development area, a progressively greater number of turbines would be screened by the topography of the northern development area and areas of remaining forestry along the south-western edge of the northern development area. Over this section the Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **significant** and a **low magnitude of change** and a **minor effect** that would be **not significant** during the hours of darkness.

5.8.290 From the north-western corner of the northern development area the Proposed Development would appear to the rear of road users as they continue northwards along the road. As such they would no longer experience any effects.

B743 Southbound from Strathaven

5.8.291 Travelling towards Muirkirk southbound travellers would experience long -range views towards the Proposed Development between Strathaven and the Avon Water over a distance of approximately 1.9 km. The Proposed Development would appear set behind the existing Dungavel wind turbines and would be seen at over 8 km distance, with no predicted visibility of the substation and BESS in the northern development area or any of the infrastructure located in the southern development area. During daylight hours this would introduce no greater than a **low magnitude of change** and a **minor moderate effect** that would be **not significant**. During the hours of darkness, existing views are influenced by the existing aviation lighting of the Kype Muir Extension Wind Farm and by the lights of other vehicles travelling along the road. The Proposed Development would introduce a **medium magnitude of change** and a **minor effect** that would be **not significant**.

5.8.292 As the road continues south-westwards between Avon Water and West Dykes over a distance of approximately 4.6 km, the prominence of the turbines would increase due to this section of the road being closer to the northern development area but the proposed turbines would appear smaller in scale than the existing Dungavel wind turbines that are situated closer to this part of the road. The hills to the south of the road would also screen a number of the turbines. During daylight hours this would introduce no greater than a **medium magnitude of change** and a **moderate effect** that would be **not significant**. During the hours of darkness, existing views are influenced by the lights of other vehicles travelling along the road. The Proposed Development would introduce a **medium magnitude of change** and a **minor effect** that would be **not significant**.

5.8.293 Between West Dykes and the north-western corner of the northern development area these effects would increase as the road approaches the northern development area. The Proposed Development would introduce a **medium magnitude of change** and a **moderate effect** that would be **significant** and a **low magnitude of change** and a **minor effect** that would be **not significant** during the hours of darkness due to the lower intensity of the lights due to the greater difference in elevation between the lights and this section of road.

5.8.294 As the road turns to the south-east and continues along the edge of the northern development to Glengavel Reservoir over a distance of approximately 2.1 km, southbound road users would experience the same effects as northbound road users over this section of the road, with the Proposed Development introducing a **medium magnitude of change** and a **moderate effect** that would be **significant** and a **low magnitude of change** and a **minor effect** that would be **not significant** during the hours of darkness.

5.8.295 From Glengavel Reservoir, southbound road users would experience the same effects as northbound road users between Glengavel Reservoir and Dippal Rig over a distance of approximately 3 km, with the Proposed Development introducing a **high magnitude of change** and a **moderate major effect** that would be **significant** and a **medium magnitude of change** and a **minor moderate effect** that would be **not significant** during the hours of darkness.

5.8.296 To the south of Dippal Rig, the Proposed Development would appear to the rear of road users as they continue southwards along the road. As such they would no longer experience any effects for approximately 3 km until approaching Blackside where they would experience intermittent combined theoretical visibility of the solar array, substations and BESS in the southern development area, over a distance of approximately 1.3 km. Over this section, road users would experience oblique to perpendicular views to the west with the Proposed Development introducing a **low magnitude of change** and a **minor moderate effect** that would be **not significant**. **No effects** would occur during the hours of darkness as the southern development area infrastructure would not be permanently lit.

B743 – Eastbound from Nethershield towards the A70

5.8.297 Views from this section of the B743 are represented by **Viewpoint 6**. Referring the Proposed Development combined ZTV at **Figure 5.12**, there is very intermittent theoretical visibility over a

distance of approximately 2.7 km east from Nethershield where there would be visibility of the proposed wind turbines and very limited combined visibility of the solar array. Over this section, road users would experience the same effects as those reported for **Viewpoint 6** in **Technical Appendix 5.6**. During daylight hours, road users would experience a **medium magnitude of change** and **moderate effect** that would be **not significant** and a **low magnitude of change** and a **minor effect** that would be **not significant** during the hours of darkness.

5.8.298 These effects would only be experienced by eastbound road users. The Proposed Development would appear to the rear of road users travelling west along this road and as such they would not experience any effects.

Minor Road - Westbound from the B743

5.8.299 Referring to **Technical Appendix 5.1**, road users travelling along this route are considered to have **medium sensitivity**.

5.8.300 With reference to the southern development area combined ZTV at **Figure 5.10**, between Linburn in the north-east and Netherwood in the south-west road users travelling westwards would experience close-range views towards the substations, BESS and solar array that would be experienced over a distance of approximately 4 km. Views would be intermittently screened and filtered by existing mature trees and proposed screen planting once mature along parts of the road. Where views are available, the Proposed Development would introduce a **high magnitude of change** and a **moderate major significant effect**. **No effects** would occur during the hours of darkness as the southern development area infrastructure would not be permanently lit.

Minor Road – North and East from the B743 to the West of Muirkirk

5.8.301 With reference to the combined development ZTV at **Figure 5.12**, road users travelling northwards from the B743 towards Netherwood would experience distant views of the solar array and views of a limited number of turbine blade tips and up to three turbine hubs with the turbines appearing set beyond the landform to the north. These views would be experienced over a distance of approximately 1.7 km. During daylight hours, this would introduce no greater than a **low magnitude of** change and a **minor moderate effect** that would be **not significant** and a **low magnitude of change** and **minor effect** that would be **not significant** during the hours of darkness.

5.8.302 From Netherwood road users would experience the same effects as those reported for westbound road users travelling along the road. Where views are available, the Proposed Development would introduce a **high magnitude of change** and a **moderate major significant effect**. **No effects** would occur over this section of the road during the hours of darkness as the southern development area infrastructure would not be permanently lit and there would be no views available of the proposed turbines located in the northern development area.

Table 5.11 – Summary of Effects on Roads During Operation

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
A70								
Approximate 11.4 km section to the north-west of Douglas	Low	Low to very low	Negligible	No	Very low	Very low	No effects	No
Approximate 21 km section between Douglas and Nether Wellwood	Low	Very low	Negligible	No	Very low	Very low	No effects	No
Approximate 2 km section between Nether Wellwood and Boghead	Medium	Low	Minor moderate	No	Low	Low	Minor	No
Approximate 5 km section between Boghead and Lugar	Low	Low	Minor	No	Very low	Low	Negligible	No
A71								
Approximate 6.6 km section to the east of the M74	Low	No change	No effects	No	Very low	No change	No effects	No
Approximate 8.5 km section between Stonehouse and Strathaven	Low	Low	Minor	No	Very low	Very low	No effects	No
Within Strathaven	Low	No change	No effects	No	Very low	No change	No effects	No
Approximate 4 km section to the south-west of Strathaven to Calder Bridge	Low	Medium	Minor moderate	No	Very low	Medium	Minor	No
Approximate 4 km section between Calder Bridge and Drumclog	Low	High	Minor moderate	No	Very low	Medium	Minor	No
Approximate 4.3 km section between Drumclog and Loudoun Hill	Low	High	Minor moderate	No	Very low	Medium	Minor	No
Approximate 4 km section between Loudoun Hill and Darvel	Low	Medium	Minor moderate	No	Very low	Low	Negligible	No

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
West of Darvel	Low	Low	Minor	No	Very low	Very low	No effects	No
B745 South-Easterly Direction								
Approximate 3.2 km to the south of Drumclog to the B743	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
B743 Northbound from Muirkirk								
Approximate 2.1 km section between Blackhill and Waterhead	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
Approximate 2.5 km section between Waterhead and Dippal Rig	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
Approximate 3 km section between Dippal Rig and Glengavel Reservoir	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
Approximate 2.1 km section between Glengavel Reservoir and the north-western corner of northern development area	Medium	Medium	Moderate	**Yes**	Low	Low	Minor	No
B743 Southbound from Strathaven								
Approximate 1.9 km section between Strathaven and Avon Water	Medium	Low	Minor moderate	No	Low	Low	Minor	No
Approximate 4.6 km section between Avon Water and West Dykes	Medium	Medium	Moderate	No	Low	Medium	Minor moderate	No
Approximate 2.2 km section between West Dykes and the north-western corner of northern development area	Medium	Medium	Moderate	**Yes**	Low	Low	Minor	No
Approximate 2.1 km section between the north-western corner of northern development area and Glengavel Reservoir	Medium	Medium	Moderate	**Yes**	Low	Low	Minor	No

Receptor	Daylight Hours				Hours of Darkness			
	Sensitivity	Magnitude of Change	Level of Effect	Significant	Sensitivity	Magnitude of Change	Level of Effect	Significant
Approximate 3 km section between Glengavel Reservoir and Dippal Rig	Medium	High	Moderate major	**Yes**	Low	Medium	Minor moderate	No
Approximate 1.3 km section south of Blackhill	Medium	Low	Minor moderate	No	Low	No change	No effects	No
B743 Eastwards from Nethershield								
Approximate 2.7 km section to the east of Nethershield	Medium	Medium	Moderate	No	Low	Low	Minor	No
Minor Road Leading West from the B743								
Approximate 4 km section between Linburn and Netherwood	Medium	High	Moderate major	**Yes**	Very low	Very low	No effects	No
Minor Road Leading North and East from the B743 to the West of Muirkirk								
Approximate 1.7 km section between the B743 and Netherwood	Medium	Low	Minor moderate	No	Low	Low	Minor	No
Approximate 4 km section between Netherwood and Linburn	Medium	High	Moderate major	**Yes**	Very low	Very low	No effects	No

Bold text denotes a significant effect

Visual Effects During Decommissioning

5.8.303 It is recognised that there would be some additional temporary effects during decommissioning of the Proposed Development over and above those assessed under the heading of 'Operational Effects' above. The additional effects resulting from decommissioning activities would be localised and relatively incidental when viewed in the context of the turbines being removed.

5.8.304 The effects on visual amenity would therefore decrease incrementally as decommissioning progresses and as more turbines and associated foundations and hardstanding are removed. Users of the Paths mentioned above which pass through the site, and within close proximity to the proposed turbines, will experience the greatest effects during decommissioning. Receptors using these routes would have largely unobstructed views of the decommissioning activities associated with the Proposed Development.

5.8.305 The effects would be very similar to those experienced during the construction phase but in reverse.

5.8.306 Overall, it is considered that from elevated locations such as from **Viewpoint 4** at Cairn Table to the south and **Viewpoint 8** at Loudon Hill there would be a temporary additional low magnitude of change for the reasons outlined above resulting from decommissioning of infrastructure in the northern development area. This would result in a **minor moderate effect** that would be **not significant**.

5.8.307 From all other remaining viewpoints, ground-level activities would be screened through a combination of landform and vegetation. In these locations the additional visual effects, over and above those addressed under the heading of Operational Effects, would arise in relation to views of the cranes erecting the turbines, resulting in a very low magnitude of additional change and no greater than a temporary **minor effect** which would be **not significant**.

5.8.308 In relation to decommissioning of infrastructure in the southern development area, from **Viewpoint 4** and the B743 to the immediate east of the site, there would be a temporary additional **medium magnitude of change** and a **moderate significant effect**. From the minor road that passes through the southern development area and Core Path B19 as it passes along the southern edge of the southern development area, there would be a temporary additional **high magnitude of change** and a **moderate major significant effect**.

5.8.309 From other viewpoints in the southern part of the detailed 20 km LVIA study area (comprising **Viewpoint 2**, **Viewpoint 3**, **Viewpoint 6**, **Viewpoint 7** and **Viewpoint 15**) views of construction activities in the southern development area would be screened by topography or would be experienced at distance such that effects would be barely perceptible and no notable temporary effects would be experienced.

Effects on the East Ayrshire Uplands and Moorlands LLA

5.8.310 The East Ayrshire Uplands and Moorland LLA is covered by East Ayrshire Council's LDP2 (Policy NE3) and was redefined during the course of the preparation of EAC LDP2 following a review of LLAs (LDA Design, 2021 on behalf of East Ayrshire Council). In relation to the Uplands and Moorlands LLA (LLA2), the report recommend the omission of a section of the LLA to the south in the vicinity of Enoch Hill.

5.8.311 The key characteristics and qualities of LLA2 are set out in East Ayrshire Council's LDP2 Local Landscape Areas Supplementary Guidance (2024). It summarises its character and qualities as:

> *"In the main a bold and large-scale but simple, rolling landscape of open, rounded top hills that form the backdrop to the eastern parts of East Ayrshire, the yellow and ochre colours of the moorland areas contrast with the dark greens of the coniferous and plantation woodlands. The combination of natural features and the lack of roads and access gives an impression of landscapes that are more extensive, remote and higher than is actually the case. The boundary encapsulates the Southern Upland LCT and Plateau Moorland LCT and also takes in the majority of the area designated as Sites of National Nature Conservation Interest."*

5.8.312 The East Ayrshire Uplands and Moorlands LLA2 comprises a number of EAC LCTs within the detailed 20 km LVIA study area as follows:

- LCT 7c East Ayrshire Lowlands – three units, one in the western part of the study area, a second to the north of Cumnock and one to the south of Cumnock;
- LCT 9 Lowland River Valley;
- LCT10 Upland River Valley – four separate units covering the Irvine Valley in the north, part of the Ayr Valley in the central part of the LLA, to the north-east of Cumnock and east of New Cumnock; and
- LCT18a East Ayrshire Plateau Moorlands; - two separate units covering the northern part of the LLA in the vicinity of the northern development area and to the south of the Ayr Valley in the southern part of the LLA.

5.8.313 The LLA Review (2021) reviewed the LLA against NatureScot's National Landscape Character Types (2019) noting the most prevalent LCTs in the northern part of the LLA are the Plateau Moorland and Upland River Valley LCTs. The boundaries of these two National LCTs broadly align with the finer-grained EAC LCTs as defined in the EALWCS.

5.8.314 The LLA Review identifies the key characteristics and sensitivities of the Plateau Moorland LCT (broadly aligns with EAC LCT 18a) as:

Key Characteristics of the Plateau Moorland LCT

- Occurs on the higher ground extending along the Ayrshire-Lanarkshire boundary, from the Irvine Valley in the north to the Nith Valley at New Cumnock in the south;
- Topography is comparatively level with extensive plateau to soft contoured ridges;
- Covered by blanket bog, heather, grass moorland, extensive areas of mosses and peatland;
- Largely undeveloped with a sparse network of roads;
- Open, exposed and rather remote landscape, wild in character (although this is lessoned in places by the presence of wind turbines and associated infrastructure); and
- Views are open and medium to longer distance depending on undulation in the local topography.

Key Sensitivities of the Plateau Moorland LCT

- The plateau moorland is a wide, open, upland landscape with landmark hills forming an important feature of East Ayrshire's skyline;
- The open expansive nature contrasts dramatically to the rolling lowland landscape, contributing to the diversity of experiences when travelling;
- Views are open and medium to longer distance depending on undulations in the local topography; and
- Largely undeveloped although there is some evidence of some medieval and post medieval farmsteads. However, there are extensive open-cast coal working around Cumnock, in particular, and windfarms are beginning to alter the landscape character.

5.8.315 The LLA Review identifies the key characteristics and sensitivities of the Upland River Valley LCT (broadly aligns with EAC LCT 10) as:

Key Characteristics of the Upland River Valley LCT

- Area along the River Nith (near New Cumnock);

- Varying river valley landform with broad open sections that contrast with steeper valley slopes and narrow, more enclosed valleys;
- Moorland vegetation, with increasing amounts of improved pasture on lower slopes and valley floors;
- Confined landscape scale;
- Often provide focus for opencast coal mining activity;
- Act as a focus for transport routes; and
- Open views in the broad valley sections, change to quite enclosed and intimate views within narrow sections.

Key Sensitivities of the Upland River Valley LCT

- Upper Nithsdale - glacial erosion has over-deepened the valley creating a distinctive u-shaped valley between steeply rising hills to the north and south. The river meanders freely across a broad, flat valley bottom.
- Settlement within Upper Nithsdale is scarce, but the valley is important for communication and provides a corridor between the Ayrshire lowlands and the Solway coast.

5.8.316 None of the infrastructure within the northern or southern development areas is located within the boundary of the LLA. Therefore, the effects on the LLA would be largely indirect. However, as explained in **Chapter 3**, the northern and southern development areas are connected by the B743 road corridor that crosses through part of the LLA and would be connected electrically by up to three underground cables running along the road corridor.

5.8.317 With reference to **Figure 5.14** illustrating landscape designations within the detailed 20 km LVIA study area overlaid with the combined development ZTV, there is intermittent theoretical visibility of the proposed wind turbines across the northern part of the LLA. There would also be combined theoretical visibility of the solar array, substations and BESS located in the southern development area across a small proportion of the LLA to the north of the Ayr Valley.

5.8.318 Based on the findings of the likely effects on landscape character set out above, the Proposed Development would have an indirect, localised and **significant effect** to the landscape character and visual qualities of the LLA that would extend across a proportion of the eastern limb of LLA to the north of the Ayr Valley, contained between Starpet Rig to the east of the B743 and Meanlour Hill to the west.

5.8.319 As noted above, the northern and southern development areas would be connected electrically by underground cables that would follow the B743 road corridor. There would be a short-term, temporary, localised construction effect to the landscape fabric that would be **not significant** while cables are installed but following reinstatement there would be no further effects.

5.8.320 Overall, it is acknowledged that there would be some localised significant effects on the LLA, as a result of the Proposed Development. However, it is not considered that the addition of the Proposed Development would be such as to prevent an understanding or appreciation of the underlying landscape of the LLA or its key characteristics.

5.9 Mitigation

5.9.1 As discussed in best practice guidance for EIA, mitigation measures may include:

- avoidance of effects;
- reduction in magnitude of effects; and
- compensation for effects (which may include enhancements to offset any adverse effects).

5.9.2 The primary mitigation adopted in relation to the proposed wind turbines in the northern development area is embedded within the design and relates to the consideration that was given to avoiding and minimising landscape and visual effects during the evolution of the Proposed Development layout. This is sometimes referred to as 'mitigation by design'. A detailed discussion of the design evolution and the iterative process underpinning it is provided in **Chapter 2** of this EIA Report. Design evolution is summarised below in so far as landscape and visual matters have influenced the Proposed Development.

5.9.3 Firstly, it should be noted that wind energy is a firmly established feature of the local landscape to the site, with the wind turbines in the northern development area effectively forming an 'infill' development between a number of operational and consented wind farms. In addition, recognition was given to the fact that large tracts of the wider local landscape around the southern development area have been worked in the recent past as opencast coal mines and that whilst some restoration has taken place, the former workings have, to some degree, altered the local landscape and its quality and condition. These factors alongside the cumulative wind farm picture that exists around Dungavel/Kype and Hagshaw creates a great opportunity to develop further renewable energy development with minimised impacts on sensitive landscape features and by making use of existing infrastructure.

5.9.4 Based on general good practice design principles (as set out in NatureScot guidelines), a review of the SLLCSWE and an analysis of site-specific opportunities and constraints, the Proposed Development layout has evolved to take into consideration a number of landscape and visual constraints whilst maintaining an optimal development and seeking to maximise renewable generation and carbon reduction from an established wind farm landscape.

5.9.5 The design rationale adopted included a desire to avoid inconsistent turbine spacing, large gaps, outliers or excessive overlapping of turbines, to minimise visual confusion and ensure a balanced / compact array from key views.

5.9.6 Appropriate offsets from residential properties and settlements, outwith the control of the Applicant or involved landowners, have been maintained to ensure that no property would experience an overbearing visual effect such that it becomes an unattractive place to live. This has been a particular consideration in relation to the residential properties to the north-west of the northern development area. Furthermore, the design has been amended during the design iteration process following extensive consultation with Historic Environment Scotland to address concerns regarding potential impacts on and intervisibility between heritage assets within the wider landscape.

5.9.7 The location and alignment of the Proposed Development turbines relative to the other operational wind farms comprising the adjacent Dungavel, Kype Muir, Kype Muir Extension, Bankend Rig and Cumberhead West Wind Farm and the consented Mill Rig and Hare Craig wind farms ensures that the Proposed Development would appear as part of an agreeable overall array in key views. It would not extend the wind farm development beyond the overall extents of these operational and consented schemes. Instead it would ensure that the Proposed Development '*fits*' into the established pattern of wind farms.

5.9.8 Taking all other engineering and environmental constraints into account, the final layout of the turbines on site was specifically designed to achieve a balanced array of turbines when viewed from the surrounding areas in conjunction with the existing and recently consented wind farm developments.

5.9.9 The turbines themselves would be painted semi-matt white or light grey with a low reflectivity finish (or similar as agreed with the Local Planning Authority (LPA)). Such a finish is widely regarded to be the least intrusive in the landscape when seen against the sky in a host of weather conditions typically experienced within the UK.

5.9.10 Mitigation of visible turbine lighting has been embedded into the design of the scheme to reduce the intensity of lighting in certain atmospheric conditions by reducing the intensity and reducing the amount of vertical downwards lighting in order to reduce the visual impact experienced by receptors below the lights.

5.9.11 Visibility sensors will be installed on relevant turbines to measure the prevailing atmospheric conditions and visibility range. Should atmospheric conditions mean that visibility from the turbines within the site is greater than 5 km from the Proposed Development, CAA policy permits lights to operate in a lower intensity mode, being a minimum of 10% of their capable illumination. Therefore, the 2000 cd steady state lights would operate at 200 cd. However, if visibility is restricted to 5 km or less, the lights would operate at 2,000 cd.

5.9.12 Additionally, the inherent directional intensity of 2,000 candela lights can be used to reduce vertical downwards lighting impacts at elevations less than -1° degree vertical angle from the horizontal plane from the aviation light. By installing lights that comply with the ICAO recommendations, it is possible to attenuate the vertical downwards light to a level that reduces the visual impact from receptors at ground levels below the lights. Implementing the ICAO recommendations, at -1 degrees the aviation lights should only be 1,125 cd and at -10 degrees should only be 75cd, when visibility is greater than 5 km.

5.9.13 These measures are proposed as embedded mitigation and would help mitigate the visible aviation lighting effects during the operation of the Proposed Development. They will reduce the magnitude of visual effects particularly for distant receptors, however this feature will not remove visibility of aviation lighting completely for any nearby receptors.

5.9.14 In relation to the infrastructure proposed within the southern development area, the design has also sought to maximise the enclosure provided by the topography of the valley in order to reduce the extent of visibility of these elements from the wider surrounding landscape. Furthermore, a landscape strategy (**Figure 5.26**) is proposed that would introduce additional landscape mitigation planting to reduce effects, once established, and create additional habitats to improve biodiversity. The landscape strategy is considered as embedded mitigation.

5.9.15 In order to offset some of the effects of the Proposed Development investment is proposed in ecological and habitat enhancements across the local landscape (to be secured through planning conditions and/or legal agreements as necessary). During its period of operation, the Proposed Development access tracks will be open for non-motorised public access and will provide a greater network of paths in the local area. These new tracks will also connect with routes within the wider area to allow a great diversity of access options across the local landscape.

5.9.16 In the long term, when the Proposed Development is decommissioned, the turbines and infrastructure in the northern and southern development areas would be removed from site and the vegetation along with the proposed access tracks would be restored in accordance with a restoration plan to be approved by the local planning authority.

5.10 Residual Effects

5.10.1 Best practice for EIA in general terms requires that the significance of potential effects be assessed, mitigation proposals identified and the residual effect (with mitigation in place) then re-assessed to demonstrate the effectiveness of the mitigation proposed.

5.10.2 In the case of LVIA for wind farms this presents two interrelated problems:

- Potential effects cannot be meaningfully assessed in the absence of an assumed layout; and
- Landscape and visual mitigation principally focuses on refinement of the site layout ('mitigation by design').

5.10.3 The primary mitigation adopted in relation to the proposed turbines located within the northern development area is embedded within the design of the Proposed Development and relates to the consideration that was given to avoiding and minimising landscape and visual effects during the evolution of the Proposed Development layout. The approach taken in this LVIA has therefore been to assess the final layout which is the result of an iterative design process. Therefore, the residual landscape and visual effects in relation to the proposed wind turbines located within the northern development area are the same as those assessed in the main part of the LVIA.

5.10.4 In relation to the effects identified that result from the proposed infrastructure located within the southern development area, the residual effects would be the same as those reported in the main

part of the LVIA for LCT 18a to the north of the Ayr Valley in which the southern development area is located, the minor road passing through the southern development, Core Path B19 and from **Viewpoint 4** at Cairn Table where its elevated location allows views down onto the southern development area.

5.11 Cumulative Assessment

Introduction

5.11.1 The following section provides an assessment of potential cumulative landscape and visual effects. The assessment criteria that underpin the judgements for the cumulative landscape and visual assessment is detailed in **Technical Appendix 5.1**. The approach and methodology is set out below in paragraph **5.11.3** to **5.11.9**.

5.11.2 As explained at paragraph **5.2.6**, the assessment considers the cumulative effects that would arise as a result of the introduction of the proposed turbines within the northern development area.

Cumulative Baseline

5.11.3 The initial step of the cumulative assessment is to establish the existing cumulative baseline. Consideration was initially given to a 60 km radius from the site, as recommended by NatureScot best practice guidance. Following this, all other wind energy developments that are operational, under construction, consented or subject to a valid full planning application within 20 km of the Proposed Development were identified and reviewed as part of the cumulative baseline, as illustrated at **Figure 5.20**.

5.11.4 Analysis was then undertaken to refine this list in order to ensure a proportionate approach focused on potentially significant effects, as advocated by NatureScot guidelines 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (2021) which states that:

> *"We therefore only seek cumulative impact assessments where we consider that a proposal could result in significant cumulative impacts which could affect the eventual planning decision."*

5.11.5 In this regard, it was agreed at scoping that the Cumulative Landscape and Visual Impact Assessment (CLVIA) would focus on a 20 km cumulative study area. Furthermore, in order that the assessment remains focused on those other schemes which have the greatest potential to give rise to significant cumulative effects, it was deemed appropriate to scope out any turbines under 50 m, or any turbines between 50 m and 80 m which lie over 10 km from the nearest proposed turbine.

5.11.6 The cumulative sites within the agreed 20 km cumulative study area are illustrated at **Figure 5.20** and listed in **Table 5.12** below. The cumulative schemes are based on a cut-off date of 31 January 2025.

Table 5.12 - Other Wind Farms within 20 km of the Proposed Development

Wind Farm	Number of Turbines	Blade Tip Height
Operational/Under Construction		
Andershaw	11	140 m
Auchren Farm	1	67 m
Auchrobert	12	132 m
Bankend Rig	11	76 m
Blantyre Muir	1	115 m
Blantyre Muir Extension	3	115 m
Blantyre Muir Wind Farm	2	115 m
Broken Cross Revised	10	149.9 m

Wind Farm	Number of Turbines	Blade Tip Height
Broken Cross Small Turbines	2	55.7 m
Calder Water	13	144.5 m
Cleughead Farm	1	79 m
Cumberhead Revised	12 2	150 m 180 m
Cumberhead West	21	200 m
Dalquhandy Revised	10	149.9 m
Douglas West	13	150 m
Douglas West Extension	12	200 m
Draffan Wind Turbine	1	67 m
Dungavel	9 4	101 m 121 m
Eastertown Wind Cluster	1	67 m
Galawhistle	18 4	110 m 121 m
Hagshaw Hill Extension	20	80 m
Hagshaw Repowering	14	200 m
Hazelside Farm	1	74 m
High Waterhead Farm	1	67 m
Kennoxhead - Phase 1	13	180 m
Kennoxhead - Phase 2	6	180 m
Kennoxhead Extension I (Phase 2)	8	180 m
Kennoxhead Extension II (Penbreck) (Phase 2)	1 7	200 m 220 m
Kype Muir	26	132 m
Kype Muir Extension	4 3 4 4	156 m 176 m 200 m 220 m
Ladehead Farm	3	74 m
Lochhead	5	100 m
Marshill	1	119 m
Middle Muir	15	152 m
Nether Fauldhouse	1	78 m
Nutberry	6	125 m
Rigmuir	4	149.9 m
Rosti Turbine	1	93.5 m

Wind Farm	Number of Turbines	Blade Tip Height
Southfield Farm Wind Turbine	1	67 m
Sneddon Law	14	130 m
West Browncastle	12	136.5 m
Whitelee	140	110 m
Whitelee Extension Phase 1 and 2	75	140 m
Yards Farm, Stonehouse	1	77 m
Yonderton Farm, Lesmahagow	1	46.5 m
Consented		
Bankend Rig II	3	136 m
Birkhill	2	100 m
Glenmuckloch	8	150 m
Hare Craig	 6 2	 200 m 230 m
Hallsburn	3	149.9 m
Lethans	7 10 5	176 m 200 m 220 m
Lethans Extension	3 7	235 m 251 m
Linburn Farm	2	67 m
Low Drumclog	3	180 m
Mill Rig	6	250 m
Mount Farm	1	129.8 m
West Dykes	1	149.9 m
Application		
Bankend Rig II Revised	3	250 m
Bankend Rig III	2 3 1 4	180 m 200 m 230 m 250 m
Bodinglee	16 21	230 m 250 m
East Merkland	3	150 m
Hawkwood	1 4	180 m 200 m
Little Gala	6	149.9 m

Wind Farm	Number of Turbines	Blade Tip Height
M74 West	22	200 m
Mossmulloch	5	200
South Brownhill	3	180 m
The Drum	8	220 m
West Dykehead	2	149.9 m
Yonderton Farm (Repowering)	1	89.5 m

5.11.7 The baseline against which the solus effects of the Proposed Development has been assessed includes all operational and under construction wind farms. An assessment of the Proposed Development with consideration of other operational wind farms has already therefore been presented in **Section 5.8** of this chapter.

5.11.8 The primary purpose of the cumulative impact assessment is therefore to consider the additional effects that might arise as a result of the Proposed Development if the other consented and in-planning schemes were also operational and formed part of the baseline landscape. In addition, this cumulative assessment also includes a further consideration of the overall totality of the effect, when the Proposed Development is considered alongside the other operational or proposed schemes across the study area.

5.11.9 The baseline in the CLVIA is therefore extended to consider other schemes that are not yet present in the landscape but are at various stages in the planning process. Two scenarios are considered which reflect the different degrees of certainty that these schemes will be constructed:

- **Scenario 1** - assumes that other consented wind farms are operational.
- **Scenario 2** - assumes that all schemes in planning are also operational. (In reality, it is possible that all other schemes that are in planning may not be approved and constructed but this scenario assumes all in planning schemes are operational as this presents the 'worst case').

Cumulative ZTVs and Wireframes

5.11.10 Cumulative ZTVs (CZTVs) have been produced to illustrate the theoretical visibility of other wind farms with the Proposed Development.

5.11.11 It should be reiterated that ZTVs imply a much greater geographical extent of influence on the landscape and views of it than would actually be the case as they do not take account of vegetation or buildings in the landscape, which may restrict the nature and extent of views.

5.11.12 Cumulative ZTVs have been produced for the following combinations of existing, consented and other wind farms in planning:

- **Figure 5.21** - Cumulative ZTV with all Operational/Under Construction Wind Farms to 20 km;
- **Figure 5.22** - Cumulative ZTV with Consented Schemes located within 10 km;
- **Figure 5.23** - Cumulative ZTV with Consented Schemes located beyond 10 km;
- **Figure 5.24** - Cumulative ZTV with In Planning Schemes located within 10 km; and
- **Figure 5.25** - Cumulative ZTV with In Planning Schemes located beyond 10 km.

5.11.13 The cumulative wireframes that form part of the visualisations at **Figures 5.28** to **5.42**, include all sites within the study area. A detailed explanation of the various sheets in the visualisations is provided in **Technical Appendix 5.3**.

Cumulative Effects on Landscape Character

5.11.14 It is acknowledged that wherever more than one wind farm is visible at any given location in the landscape, there will be a greater overall or cumulative effect on landscape character than if just one wind farm was visible in the landscape.

5.11.15 However, it is also noted that in any given landscape where turbines are already present, the additional effect on landscape character of introducing further turbines may not be as significant as the initial introduction of turbines. Furthermore, in general, the greater the number of turbines in the baseline landscape the less significant the addition of further turbines may be in landscape character terms as the landscape will be more heavily characterised by turbines in the baseline situation.

5.11.16 It has been assessed in the assessment of the solus effects of the Proposed Development set out earlier in this chapter that there would be some limited significant effects on landscape character as a result of the Proposed Development. The purpose of this section of the cumulative assessment is therefore to identify whether there would be any change to the assessments of significance previously set out in relation to the Proposed Development, once the other wind turbines which are not already operational are considered to form part of the baseline landscape.

5.11.17 Generally speaking, such additional cumulative effects will arise when the addition of the Proposed Development to the baseline results in an increase in effects, when viewed in combination with the other wind turbines forming part of the baseline landscape.

5.11.18 The assessment is considered in two parts, firstly in relation to the scenario where the additional consented developments are also considered to be operational and secondly when the consented and in-planning schemes are also considered to be operational.

Cumulative Scenario 1 – Other Consented Schemes are also Considered to be Operational

5.11.19 In this cumulative scenario, there would be 12 other schemes within 20 km of the proposed turbines within the northern development area comprising:

- Bankend Rig II (it is acknowledged that this scheme is subject to a separate application for three turbines with an increased blade tip height);
- Birkhill;
- Glenmuckloch;
- Hare Craig;
- Hallsburn;
- Lethans;
- Lethans Extension;
- Linburn Farm;
- Low Drumclog;
- Mill Rig;
- Mount Farm; and
- West Dykes.

5.11.20 Referring to **Figure 5.20** illustrating other wind farms within 20 km, the consented schemes which have the potential to bring about significant cumulative effects are:

- Bankend Rig II;
- Hallsburn Farm;

- Hare Craig;
- Low Drumclog;
- Mill Rig; and
- Mount Farm.

5.11.21 The remaining consented schemes are located to the east and south-east beyond the established Hagshaw Energy Cluster or at such distance that they would have no potential to bring about significant cumulative landscape character effects.

5.11.22 The nearest of the relevant schemes are Hallsburn to the immediate north of the northern development area, Mill Rig located to approximately 2.9 km to the west and Bankend Rig II located approximately 3 km to the south-west. These schemes are located within LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) in which the northern development area is also located.

5.11.23 Mount Farm is located approximately 6.6 km to the north-west within LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog, Low Drumclog is located approximately 5.8 km to the north-west within LCT 6 Plateau Moorland and Hare Craig is located approximately 3.8 km to the south-east within LCT 18a East Ayrshire Plateau Moorlands.

5.11.24 The cumulative ZTV prepared for the consented schemes within 10 km (see **Figure 5.22**) illustrates the potential for visibility of the Proposed Development with these other consented schemes within 10 km from a broad part of the wider landscape to the north, west, south and south-east of the Proposed Development.

5.11.25 The cumulative wirelines included in the visualisations (see **Volume 3**) illustrate the relationships between the sites. From viewpoints located to the north of the northern development area (e.g. **Viewpoints 1**, **8** and **9**) the Proposed Development and the consented Hallsburn Farm and Hare Craig schemes would be seen in a part of the landscape where there is an established cluster of operational wind farms. The consented Mount Farm and Low Drumclog schemes to the north-east would be introduced into a part of the landscape immediately adjacent to the operational Calder Water and West Browncastle schemes, while Mill Rig would be introduced into a part of the landscape to the north-west of the operational Bankend Rig scheme.

5.11.26 There would nonetheless be potential for cumulative effects to arise within the intervening landscape between these schemes comprising: LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog; LCT 7 Rolling Moorland located to the west of the northern development area; LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) and LCT 8 i Upland River Valley - Avon Water.

5.11.27 In relation to LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog, the addition of the consented Mount Farm and Low Drumclog schemes would extend the existing influence of wind turbines experienced within the LCT. The cumulative magnitude of change would reduce to **medium** with cumulative effects considered to be **moderate** and **not significant** between approximately 2 and 5 km.

5.11.28 The addition of the Mill Rig that overlaps the southern edge of LCT 7 Rolling Moorland located to the west of the northern development area would extend the existing influence of wind turbines experienced within the LCT, reducing the cumulative magnitude of change to **medium** with cumulative effects considered to be moderate and **not significant**.

5.11.29 The addition of the Mill Rig and Bankend Rig II into the western part of LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) into the western part of the LCT to the west of the operational Bankend Rig would not result in any change to the solus effects identified for this part of the LCT.

5.11.30 The addition of Hallsburn adjacent to the operational Dungavel Wind Farm would extend the existing influence of wind turbines experienced within LCT 8 i Upland River Valley - Avon Water. The cumulative magnitude of change introduced by the Proposed Development would reduce to **medium** with cumulative effects reducing to **moderate** and **significant**.

5.11.31 The addition of Hare Craig would further extend the existing influence of wind turbines within the eastern part of LCT 18a East Ayrshire Plateau Moorlands and reduce the cumulative magnitude introduced by the Proposed Development to **medium** with cumulative effects reducing to **moderate** and **significant**.

Cumulative Scenario 2 – Other In-Planning Schemes are also Considered to be Operational

5.11.32 In this cumulative scenario, there would be 12 other schemes within 20 km of the proposed turbines within the northern development area comprising:

- Bankend Rig II (revised application with increased blade tip height);
- Bankend Rig III;
- Bodinglee;
- East Merkland;
- Hawkwood;
- Little Gala;
- M74 West;
- Mossmulloch;
- South Brownhill;
- The Drum;
- West Dykehead; and
- Yonderton Farm (Repowering).

5.11.33 Referring to **Figure 5.20** illustrating other wind farms within 20 km, the application stage schemes which have the potential to bring about significant cumulative effects are:

- Bankend Rig II (revised application with increased blade tip height);
- Bankend Rig III;
- Hawkwood;
- Mossmulloch;
- South Brownhill; and
- West Dykehead.

5.11.34 The bulk of the remaining application stage schemes are located to the east and south-east beyond the established Hagshaw Energy Cluster or at such distance that they would have no potential to bring about significant cumulative effects, as is the case for the The Drum Wind Farm.

5.11.35 The cumulative ZTV prepared for the in-planning schemes within 10 km (see **Figure 5.24**) illustrates the potential for visibility of the Proposed Development with these other in-planning schemes within 10 km from a broad part of the wider landscape to the north, west, south and south-east of the Proposed Development.

5.11.36 The cumulative wirelines included in the visualisations (see **Volume 3**) illustrate the relationships between the sites. From viewpoints located to the north of the northern development area (e.g. **Viewpoints 1**, **8** and **9**) the addition of Hawkwood and West Dykehead would be seen in a part of the landscape where there is an established cluster of operational and consented wind farms. In certain views, Bankend Rig III would extend wind farm development across the horizon, reinforcing the existing cluster of wind farms to the south-west of Dungavel Hill located within the upland moorlands with the cluster of wind farms within the south-western part of the rolling moorland LCT.

5.11.37 Mossmulloch would be located within the same part of the landscape as the operational Calder Water and West Browncastle schemes, while Hawkwood and West Dykehead would be introduced into the same part of the landscape as the operational Dungavel and Kype Muir schemes.

5.11.38 Having considered the relationship between these in-planning schemes and the Proposed Development it is considered that the addition of these schemes into the baseline landscape would not result in any change to the cumulative magnitude of change or the cumulative effects identified in relation in Scenario 1 due to the existing influence that the adjacent consented schemes would already have on those landscape character types within the wider landscape to the north and west of the Proposed Development.

5.11.39 In relation to LCT 18a East Ayrshire Plateau Moorlands located to the south of the northern development area, the introduction of Bankend Rig III would extend the existing influence of wind turbines experienced within the LCT, thus reducing the extent of cumulative of significant cumulative effects to approximately 2 km to the south and approximately 2 km to the south-west from the northern development area.

Totality of the Combined Effect of All Developments, including the other Operational Developments

5.11.40 Consideration has also been given to the overall totality of the effect, when the Proposed Development is considered alongside the other operational, consented, and proposed developments.

5.11.41 The closest operational developments to the Proposed Development is the established cluster of operational wind farms that extend through LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) to the north-east comprising Dungavel, Kype Muir, Kype Muir Extension and Auchrobert. Bankend Rig to the south-west of the Proposed Development extends this cluster into the south-western part of the LCT. Collectively, these operational schemes have already had a characterising effect on LCT 7A i, redefining its character as '*Rolling Moorland Forestry with Wind Farms*', irrespective of the addition of the Proposed Development. Similar LCTs are already defined elsewhere within the study area such as in the vicinity of the existing Hagshaw Cluster schemes to the north-west of Douglas.

5.11.42 In this regard, the Proposed Development would fit in with the established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes.

Cumulative Effects on Views and Visual Amenity

5.11.43 As with cumulative landscape character effects, it is acknowledged that the addition of the Proposed Development to the baseline has the potential to result in an increase in effects, when viewed in combination with other wind turbines forming part of the visual baseline.

5.11.44 However, it is also noted that in any given view where turbines are already present, the additional effect on visual amenity of introducing further turbines may not have a greater effect as the initial introduction of turbines. Furthermore, in general, the greater the number of turbines in the baseline view, the less significant the addition of further turbines may be. It is also recognised however that a slight additional effect on top of an existing effect, which at present is not quite significant, could in theory tip the balance such that the overall effect is deemed to be significant. Again, generally speaking, such additional cumulative effects will arise where a visual receptor would now lie between a cumulative wind farm in one direction and the Proposed Development in a different direction, such that the visibility of turbines as a result of the addition of the Proposed Development would become notable in multiple, usually directly opposite, directions.

Cumulative 'in combination' Visual Effects

5.11.45 An 'in combination' cumulative visual effect is the term used to refer to the situation where a viewer is able to see one or more further wind farms, in addition to the Proposed Development, whilst standing in the one location. These effects are either 'simultaneous', where the viewer can see the

additional turbines in the same angle of view, or 'successive', where the view can see the additional turbines in a different angle of view by turning their head.

5.11.46 As set out in the main assessment, there are many locations where other existing wind turbines are seen in views from the landscape in and around the Proposed Development. In particular, the more elevated viewpoints such as **Viewpoints 4**, **8**, **10**, **14** and **15** views of numerous existing developments at various more distant locations across the extent of the wider landscape.

Cumulative Scenario 1 – Other Consented Schemes are also Considered to be Operational

5.11.47 In this cumulative scenario (where other consented developments are also considered to be operational) there would be an additional 12 schemes added into the baseline landscape. The addition of these schemes would serve to further establish wind energy as a visual component in the wider landscape around the Proposed Development.

5.11.48 Referring to the Viewpoint Assessment at **Technical Appendix 5.6**, during daylight hours, from the majority of viewpoints there would be no change to effects identified in the assessment of the solus effects, with the exception of **Viewpoint 1**, where the cumulative magnitude of change would reduce to **medium high** and the cumulative effect to **moderate major significant**, **Viewpoint 4**, where the cumulative magnitude of change would reduce to **low medium** and the cumulative effect to **moderate significant**, **Viewpoint 5**, where the cumulative magnitude of change would reduce to **low to very low** and the cumulative effect to **minor** and **not significant**, and **Viewpoint 8**, where the cumulative effect would no longer be considered to be significant. Effects would remain the same as identified in the main assessment at all other viewpoints.

5.11.49 During the hours of darkness, the cumulative effects would remain the same as identified in the main assessment at the majority of viewpoints with the exception of **Viewpoints 1**, where the cumulative effect would reduce to **minor moderate** and **not significant** and **Viewpoints 4** and **8** where the cumulative effect would reduce to **minor** and **not significant** due to the presence of additional aviation lights in the baseline landscape.

Cumulative Scenario 2 – Other In-Planning Schemes are also Considered to be Operational

5.11.50 In this cumulative scenario, there would be a further 12 other schemes added into the baseline landscape. The addition of these schemes would serve to further establish wind energy as a visual component in the wider landscape around the Proposed Development.

5.11.51 Referring to the Viewpoint Assessment at **Technical Appendix 5.6**, during daylight hours, from the majority of viewpoints there would be no change to effects identified in the assessment of the solus effects, with the exception of: **Viewpoint 1**, where the cumulative magnitude of change would reduce to **medium** and the cumulative effect to **moderate significant**; **Viewpoint 4**, where the cumulative magnitude of change would reduce to **low** and the cumulative effect to **moderate** and **not significant**; **Viewpoint 5**, where the cumulative magnitude of change would reduce to **very low** and the cumulative effect would reduce but remain **minor** and **not significant**; and **Viewpoint 8**, where the cumulative magnitude of change would reduce to **low** and the cumulative effect to **minor moderate effect** and **not significant**. Effects would remain the same as identified in the main assessment at all other viewpoints.

5.11.52 During the hours of darkness, the cumulative effects would remain the same as identified in the main assessment at the majority of viewpoints with the exception of **Viewpoints 1**, where the cumulative effect would reduce to **minor** and **not significant** and **Viewpoints 4** and **8** where the cumulative magnitude of change would reduce to low but the effects would remain **minor** and **not significant**.

Cumulative Effects on Settlements

5.11.53 The main assessment focussed on the following settlements which were identified as having the potential to experience significant effects as a result of the Proposed Development:

- Muirkirk (represented by **Viewpoints 2** and **3**);
- Drumclog (represented by **Viewpoint 4**); and

- Gilmourton.

Cumulative Scenario 1 – Other Consented Schemes are also Considered to be Operational

5.11.54 When the other consented schemes are considered to be present in the baseline landscape it is assessed that the addition of the Proposed Development would not introduce any significant cumulative effects. As described above at **paragraph 5.11.48**, from Drumclog (**Viewpoint 1**) the cumulative effect would reduce to **medium high** and the cumulative effect to **moderate major significant**. From Gilmourton, the cumulative effect would be reduced and would no longer be considered significant. This is due to the closer proximity of these settlements to the consented Hallsburn Wind Farm.

5.11.55 There would be no change to the effects identified in the main assessment from Muirkirk.

Cumulative Scenario 2 – Other In-Planning Schemes are also Considered to be Operational

5.11.56 When the other in-planning schemes are considered to be present in the baseline landscape it is assessed that the addition of the Proposed Development would not introduce any significant cumulative effects. As described above at **paragraph 5.11.47**, from Drumclog (**Viewpoint 1**) the cumulative magnitude of change would reduce to **medium** and the cumulative effect to **moderate significant**. From Gilmourton, the cumulative magnitude of change would reduce to **low medium** and the effect would remain **moderate** and **not significant**. This is due to the closer proximity of these settlements to the consented Hallsburn and Hawkwood wind farms.

5.11.57 There would be no change to the effects identified in the main assessment from Muirkirk.

Sequential Cumulative Effects on Visual Amenity

5.11.58 A 'sequential' cumulative visual effect is the term used to refer to the situation where a viewer is able to see one or more wind farms in addition to the Proposed Development, whilst travelling along a linear route. This could be either on foot, whilst walking on a footpath, or by bicycle or car along the public highway. The main assessment focussed on the following routes from which it was considered receptors had the potential to experience significant effects as a result of the Proposed Development:

- South Lanarkshire core paths EK/1456/1, EK/1457/1, EK/1458/1, EK/5844/1 – Dungavel, EK/5841/1, EK/5852/1, EK/5843/1;
- East Ayrshire core path B19;
- East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2;
- East Ayrshire core path EK/3780/1;
- Core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17;
- River Ayr Way;
- A70;
- A71;
- B745;
- B743; and
- Minor Road passing through the southern development area.

5.11.59 The main assessment identified significant effects on those core paths crossing through the northern and southern development areas, from an approximate 6.2 km section of the East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area

in the vicinity of Drumclog, from an approximate 1 km section of East Ayrshire core path EK/3780/1 to the immediate north-east of the northern development area between Kype Muir and the northern development area and from the upper sections of core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17.

5.11.60 The potential for the effects of the Proposed Development to result in significant cumulative effects once the other consented and in-planning a schemes are also included has been considered and no further significant cumulative effects have been identified.

5.11.61 The majority of the above routes have some periodic visibility of existing wind energy, but the relatively limited additional effect introduced by the Proposed Development would in no instance lead to an overall significant effect alongside the other developments, where such a significant effect does not already arise from the other development in isolation.

Totality of the Combined Effects of all Developments

5.11.62 Consideration has also been given to the overall totality of the effect, when the Proposed Development is considered alongside the other operational, consented, and proposed developments.

5.11.63 The closest operational developments to the Proposed Development is the established cluster of operational wind farms comprising Dungavel, Kype Muir, Kype Muir Extension, Auchrobert and Bankend Rig to the south-west of the Proposed Development. The closest consented schemes are Hallsburn to the north, Bankend Rig II and Mill Rig to the south-west and Hare Craig to the south-east. The closest in-planning schemes are Bankend Rig II (revised application with taller blade tip heights) to the south-west, Bankend Rig III to the south and Hawkwood and West Dykes to the north.

5.11.64 In this regard, the Proposed Development would fit in with the established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes.

5.11.65 Overall, collectively these developments would serve to reinforce the existing pattern of wind energy in the landscape primarily to the north, west, south and south-east of the site within approximately 5 km. The addition of the Proposed Development would serve to reinforce this pattern of wind energy, albeit extending some limited significant visual effects into a further part of the landscape to the west of the northern development area.

Summary of Cumulative Effects

5.11.66 It is acknowledged that wherever more than one wind farm is visible at any given location in the landscape, there will be a greater overall or cumulative effect on landscape character and visual amenity than if just one wind farm was visible in the landscape. Likewise, it is acknowledged that the more wind turbines that are constructed in any given landscape, the greater the magnitude of overall (or combined) change to the landscape character or views.

5.11.67 When the other consented wind farms are considered to already form part of the baseline landscape it is assessed that effects to LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog and LCT 7 Rolling Moorland resulting from the Proposed Development would no longer be considered significant and effects to LCT 8 i Upland River Valley - Avon Water and LCT 18a East Ayrshire Plateau Moorlands would reduce to **moderate** and **significant**. The addition of the in-planning schemes into the baseline landscape would also reduce the extent of significant effects to LCT 18a resulting from the Proposed Development from approximately 3 km to the south and approximately 3.5 km to the south-west to 2 km to the south and south-west.

5.11.68 Regarding the totality of the effect of all schemes on landscape character, consideration has also been given to the overall totality of the effect, when the Proposed Development is considered alongside the other operational, consented, and in planning developments. The operational schemes have already had a characterising effect on LCT 7A i, redefining its character as '*Rolling Moorland Forestry with Wind Farms*' and the Proposed Development would fit in with the

established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes.

5.11.69 As with cumulative landscape character effects, it is acknowledged that wherever more than one wind farm is visible in any given view, there will be a greater overall or cumulative effect on the view or visual amenity than if just one wind farm was visible in the landscape and that the more wind turbines that are constructed, the greater the magnitude of overall (or combined) change to the view or visual amenity that prevailed prior to the introduction of the first turbines.

5.11.70 When each of the other consented and in-planning wind farms are considered to already form part of the visual baseline, the Proposed Development would not introduce a cumulative significant visual effect. In many cases there would be either no change or a reduction in the effects identified in the main assessment. Nor would they introduce any additional significant sequential effects to any of the routes assessed in detail.

5.11.71 In terms of the totality of effect on visual amenity, it is not considered that the addition of the Proposed Development would be such as to result in the overall cumulative visual effect of wind turbines being dominant or oppressive in views experienced at various points within the area.

5.12 Summary

5.12.1 This chapter presents the findings of the Landscape and Visual Impact Assessment (LVIA) and identifies the likely significant effects arising from the Proposed Development as defined in **Chapter 3** on landscape character and visual amenity. It has been informed by field visits carried out on separate occasions at different times of the year and by consultation undertaken with statutory consultees.

5.12.2 The existing landscape and visual baseline has been documented and is presented at **Section 5.6** and the assessment has been supported by figures (presented in **Volume 2**) and visualisations produced to NatureScot visualisation standards (presented in **Volume 3**) that show representative views during daylight hours and views during dark sky hours from a select number of viewpoint locations. Supporting Technical Appendices are included in **Volume 4**.

5.12.3 The Proposed Development is not located in or near to an international or national landscape designations. Eight local landscape areas (LLA) overlap the detailed 20 km LVIA study area and the East Ayrshire Uplands and Moorlands LLA borders the south-eastern edge of the northern development area and the northern edge of the southern development area. However, none of the proposed above-ground infrastructure located in either the northern or southern development areas would be located in the LLA.

5.12.4 The proposed turbines and associated infrastructure within the northern development area would be located within the Rolling Moorland Forestry landscape character type (LCT 7Ai) and a very small section of the northerly site access from the B743 overlaps the adjoining Upland River Valley landscape character type (LCT 8i). The southern development area would be located entirely within the East Ayrshire Plateau Moorlands landscape character type (LCT 18a).

5.12.5 The northern development area and its immediate context is broadly characterised as rolling moorland rising to form rounded hill summits comprising largely of commercial forestry plantation while to the south, an area of plateau moorland and hills separates the uplands from the lower-lying land contained Greenock Water valley in the which the southern development area is located. The southern development area largely comprises improved and rough grassland with areas of scrub and woodland. To the south, an area of upland moorland and forestry plantation separates the valley from the Ayr Valley.

5.12.6 The nearest settlements are Muirkirk, located in the Ayr Valley to the south of the Proposed Development and Gilmourton and Drumclog to the north and north-west of the northern development area, with the larger settlement of Strathaven located to the north-east. There are numerous existing wind farms nearby comprising Dungavel, Kype Muir and Kype Muir Extension to the north-east and Bankend Rig to the south-west of the northern development area as well as several consented schemes consisting of Mill Rig and Bankend Rig II to the west. There are also

several proposed wind farms currently in planning in the vicinity of the northern development area, most notably Bankend Rig III immediately adjacent to the south.

5.12.7 An assessment of effects on landscape character that would be experienced during the construction, operation and decommissioning phases of the Proposed Development has been carried out.

5.12.8 The assessment found that the construction of the Proposed Development in the northern development area would result in temporary additional significant effects to the Rolling Moorland Forestry landscape character type (LCT 7Ai) that would be contained within the northern development area and the East Ayrshire Plateau Moorlands landscape character type (LCT 18a) where the southern development area is located extending approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT. As these effects are contained within the immediate vicinity of the Proposed Development they are localised.

5.12.9 During the operational phase, the Proposed Development would result significant effects to the following landscape character types within South Lanarkshire:

- LCT 7A i Rolling Moorland Forestry - Hagshaw/Dungavel (North of Douglas Water) extending approximately 1.7 km to the north-east and 3 km to the south-west of the northern development area;
- LCT 5 i Plateau Farmland - Western Plateau: East Kilbride/Strathaven/Drumclog within approximately 5 km of the northern development area;
- LCT 7 Rolling Moorland within approximately 3 km to the south-west of the northern development area;
- LCT 8 i Upland River Valley - Avon Water within approximately 3 km; and
- LCT 18a East Ayrshire Plateau Moorlands extending approximately 3 km to the south-east and south and approximately 3.5 km to the south-west from the northern development area and approximately 2.5 km to the south-east of Middlefield Law, 3 km to the north-east and 1.7 km to the west of the southern development area.

5.12.10 During the decommissioning phase, there would be temporary additional significant effects to the Rolling Moorland Forestry landscape character type (LCT 7A) within the northern development area and to the East Ayrshire Plateau Moorlands landscape character type (LCT 18a) where the southern development area is located extending approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT.

5.12.11 All effects on landscape character during the construction, operation and decommissioning phases are either contained within the site or its immediate vicinity. As such they are considered to be localised.

5.12.12 An assessment of effects on visual amenity that would be experienced during the construction, operation and decommissioning phases of the Proposed Development has been undertaken.

5.12.13 The assessment found that construction activities from low-lying locations would be screened by topography but from some elevated viewpoints, such as **Viewpoint 4** at Cairn Table, from the B743 in the vicinity of the southern development area and from the minor road passing through the southern development area there would be a temporary additional significant effect.

5.12.14 During operation, it is assessed that there would be a significant effect experienced at **Viewpoint 1** at Drumclog, **Viewpoint 4** at Cairn Table and **Viewpoint 8** at Loudoun Hill during daylight hours. No significant effects would be experienced at any of the representative viewpoints during the hours of darkness.

5.12.15 The residential visual amenity assessment (see **Technical Appendix 5.7**) of residential properties within 2 km of the proposed turbines in the northern development area concluded that some of the properties assessed in detail would experience a significant effect from the property, its curtilage or its access but none would experience an overbearing or overwhelming effect.

5.12.16 In relation to residential properties located within 1 km of the solar, BESS and substations within the southern development area, significant visual effects would be experienced from the properties at Burnfoot Farm and Burnside (which are financially involved), Laigh Hall and Forkings Lodge (financially involved).

5.12.17 The assessment found that a significant visual effect would be experienced from Drumclog and Gilmourton during daylight hours only.

5.12.18 Significant visual effects would be experienced by receptors on several core paths in the vicinity of the Proposed Development comprising core paths EK/1456/1, EK/1457/1, EK/1458/1, EK/5844/1 – Dungavel, EK/5841/1, EK/5852/1, EK/5843/1 that cross through the northern development area.

5.12.19 Significant visual effects would be experienced over an approximate 4.5 km section of East Ayrshire core path B19 that crosses through the southern development area.

5.12.20 Significant visual effects would be experienced over an approximate 6.2 km section of East Ayrshire core path EK/5848/1 and South Lanarkshire core paths EK/5604/3, EK/5604/2, EK/1455/1, EK/5624/1, EK/5604/1, EK/5624/1, EK/5624/2 to the north-west of the northern development area.

5.12.21 Significant visual effects would also be experienced from parts of core paths to the south-east of Muirkirk leading towards Cairn Table comprising EK/5855/1, SCD68, CL/3691/1, CL/5848/1, SCD66, CL/5845/1, SCD66, SCD67 EK/5854/1, B14, B17.

5.12.22 No significant effects would be experienced from the River Ayr Way that passes through the southern part of the study area.

5.12.23 The assessment found that significant effects would be experienced over an approximate 3.2 km section of the B745 to the south of Drumclog, over approximately 9.7 km of the B743 when travelling northwards or over approximately 7.3 km when travelling southwards and over an approximate 4 km stretch of the minor road that passes through the southern development area.

5.12.24 In all cases, no visual receptors would experience a significant visual effect during the hours of darkness. This is due to the embedded mitigation built into the aviation lighting whereby the lights would be perceived at a lower intensity at elevations below the level of the lights and due to the presence of existing sources of light in parts of the landscape, such as along roads and around properties.

5.12.25 During decommissioning, the assessment found that decommissioning activities from low-lying locations would be screened by topography but from some elevated viewpoints, such as **Viewpoint 4** at Cairn Table, from the B743 in the vicinity of the southern development area and from the minor road passing through the southern development area there would be a temporary additional significant effect.

5.12.26 The embedded mitigation built into the design of the layout of the proposed turbines in the northern development and the proposed visible aviation lighting means that the residual landscape and visual effects in relation to the proposed wind turbines located within the northern development area are the same as those assessed in the main part of the LVIA.

5.12.27 In relation to the southern development area, the residual effects would be the same as those reported in the main part of the LVIA for the East Ayrshire Plateau Moorlands landscape character type (LCT 18a), the minor road passing through the southern development, Core Path B19 and from **Viewpoint 4** at Cairn Table.

5.12.28 Regarding the East Ayrshire Uplands and Moorland LLA, there would be some localised significant effects on the LLA, as a result of the Proposed Development which align with the effects introduced to those LCTs that extend across the LLA. However, the Proposed Development would not prevent an understanding or appreciation of the underlying landscape of the LLA or its key characteristics.

5.12.29 Regarding cumulative effects, when other consented and in-application wind farms are considered to form part of the baseline, the effects introduced by the Proposed Development to Plateau Farmland landscape character type (LCT 5i) and the Rolling Moorland landscape character type (LCT 7) would no longer be significant and that the extent of significant effects to the East Ayrshire Plateau Moorlands landscape character type (LCT 18a) would reduce.

5.12.30 The existing operational schemes within the vicinity of the northern development area have already had a characterising effect on Rolling Moorland Forestry landscape character type (LCT 7Ai), redefining its character as '*Rolling Moorland Forestry with Wind Farms*' . The Proposed Development would fit with the established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes.

5.12.31 Due to the location of the Proposed Development within an established wind cluster with turbines to its immediate north-east and south-west, the addition of the Proposed Development would not introduce a significant cumulative visual effect. When the Proposed Development is considered along with all other operational, consented and in-planning schemes it would not result in the overall cumulative visual effect of wind turbines being dominant or oppressive in views experienced within the surrounding area.

5.12.32 It is noted that localised significant effects on landscape character and visual amenity are inevitable as a result of commercial wind energy development anywhere in the UK. Whilst the LVIA identified some significant landscape and visual effects it is considered that the landscape has the capacity to accommodate the effects identified, particularly when the consented but as yet unbuilt wind farms in the surrounding landscape are taken into account in the baseline.

5.12.33 Wind turbines give rise to a wide spectrum of opinions, ranging from strongly adverse to strongly positive, with a wide range of opinions lying somewhere between these two positions. Some people view wind turbines as incongruous or industrial structures whilst others view them as aesthetically pleasing, elegant structures and a positive response to climate change. In the case of the Proposed Development the turbines and associated development may be viewed by some as a symbol of continued progress by society towards a low carbon future.

5.12.34 However, in considering the effects of the Proposed Development, a precautionary approach has been adopted and it is therefore assumed that the effects identified will be adverse in nature even though it is recognised that for some people the impacts could be perceived to be beneficial.

5.12.35 The following provides a summary of the conclusions of the impact assessment with respect to each receptor taking into consideration embedded mitigation measures.

Table 5.13 – Summary Table

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
During Construction					
Effects on existing landscape features in the northern and southern development areas	Worst-case minor moderate not significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case minor moderate not significant	Adverse
Effects on landscape character *Within the northern development area located in LCT7Ai Rolling Moorland Forestry*.	Worst-case moderate major significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate major significant	Adverse
Effects on landscape character *Within LCT18a East Ayrshire Plateau Moorlands extending from the southern development area approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT*	Worst-case moderate significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate significant	Adverse
Visual effects – northern development area	Worst-case temporary additional minor moderate not significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case minor moderate not significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Visual effects – southern development area	Worst-case temporary additional moderate major significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case temporary additional moderate major significant	Adverse
During Operation					
Effects on landscape character *Between approximately 2 and 5 km within LCT5i Plateau Farmland, extending approximately 3 km to the south-west within LCT 7Ai Rolling Moorland Forest and extending approximately 2.5 km to the south-east of Middlefield Law, 3 km to the north-east and 1.7 km to the west of the southern development area*	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate major significant	Adverse
Representative Viewpoints during daylight hours	Worst-case major significant (Viewpoint 1 Drumclog), moderate-major significant (Viewpoint 4 Cairn Table), moderate significant (Viewpoint 8	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case major significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
	Loudoun Hill). Other viewpoints experience non-significant effects.				
Representative Viewpoints during the hours of darkness	Worst-case moderate not significant (Viewpoint 1 Drumclog)	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case moderate not significant	Adverse
Residential Properties within 2 km of the proposed turbines in the northern development area	Worst-case major significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case major significant	Adverse
Residential Properties within 1 km of the southern development area	Worst-case moderate significant from Burnside and Burnfoot Farm (both financially involved) Laigh Hall and Forkings Lodge (Financially involved)	Adverse	No additional mitigation. Implementation of the landscape mitigation strategy has been considered as embedded mitigation. Detailed proposals to be agreed via a planning condition	Worst-case moderate significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Effects on settlements during daylight hours	Worst-case major significant (Drumclog). Moderate significant (Gilmourton) Other settlements experience non-significant effects.	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case major significant (Drumclog). Moderate significant (Gilmourton)	Adverse
Effects on settlements during the hours of darkness	Worst-case moderate not significant (Drumclog)	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case moderate not significant	Adverse
Effects on core paths crossing the northern development area	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate major significant	Adverse
Effects on core paths crossing the southern development area	Worst-case major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case major significant	Adverse
Effects on core paths outwith the northern development area during daylight hours *Extending over approximately 3.2 km distance south-west of Drumclog*	Worst-case major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case major significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Effects on core paths outwith the northern development area during the hours of darkness *Extending over approximately 3.2 km distance south-west of Drumclog*	Worst-case moderate not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case moderate not significant	Adverse
Effects on core paths outwith the southern development area during daylight hours *Paths leading towards Cairn Table*	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate major significant	Adverse
Effects on core paths outwith the southern development area during the hours of darkness *Paths leading towards Cairn Table*	Worst-case minor moderate not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case minor moderate not significant	Adverse
Effects on roads – A70 *During daylight hours*	Worst-case minor moderate not significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case minor moderate not significant	Adverse
Effects on roads – A70 *During hours of darkness*	Worst-case minor not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case minor not significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Effects on roads – A71 *During daylight hours*	Worst-case minor moderate not significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case minor moderate not significant	Adverse
Effects on roads – A71 *During hours of darkness*	Worst-case minor not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case minor not significant	Adverse
Effects on roads – B745 *During daylight hours*	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case moderate major significant	Adverse
Effects on roads – B745 *During hours of darkness*	Worst-case minor moderate not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case minor moderate not significant	Adverse
Effects on roads – B743 *During daylight hours*	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case moderate major significant	Adverse
Effects on roads – B743 *During hours of darkness*	Worst-case minor moderate not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when	Worst-case minor moderate	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
			atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	not significant	
Effects on roads – Minor road crossing the southern development area *During daylight hours*	Worst-case moderate major significant	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case moderate major significant	Adverse
Effects on roads – Minor road crossing the southern development area *During hours of darkness*	Worst-case minor moderate not significant	Adverse	No additional mitigation – mitigation of effects of visible aviation lighting embedded into the design of to include dimming (2000cd/200cd) when atmospheric visibility is greater than 5 km and vertical directional intensity which reduces the perceived intensity of lighting at angles below the level of the visible aviation lights.	Worst-case minor not significant	Adverse
During Decommissioning					
Effects on landscape character *Within the northern development area located in LCT7Ai Rolling Moorland Forestry*.	Worst-case moderate major significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate major significant	Adverse
Effects on landscape character *Within LCT18a East Ayrshire Plateau Moorlands extending from the southern development area approximately 2.3 km to the south-west and north-east, 1.5 km to the north and approximately 900 m south to the edge of the LCT*	Worst-case moderate significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case moderate significant	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Visual effects – northern development area	Worst-case temporary additional minor moderate not significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case minor moderate not significant	Adverse
Visual effects – southern development area	Worst-case temporary additional moderate major significant	Adverse	Standard best-practice construction methods. No additional mitigation – consideration of landscape and visual matters was inherent in the design process.	Worst-case temporary additional moderate major significant	Adverse
Effects on East Ayrshire LLA					
Direct effects on landscape fabric along the B743 where underground cables electrically connect the two development areas	Not significant	Adverse	Standard best-practice construction methods. No additional mitigation.	Not significant	Adverse
Indirect effects *Across a proportion of the eastern limb of LLA to the north of the Ayr Valley, contained between Starpet Rig to the east of the B743 and Meanlour Hill to the west.*	Significant but localised	Adverse	Standard best-practice construction methods. No additional mitigation.	Significant but localised	Adverse
Cumulative Effects					
Cumulative landscape character effects	Worst-case moderate significant (LCT18a)	Adverse	No additional mitigation – consideration of landscape and visual matters was inherent in the design process	Worst-case moderate significant (LCT18a)	Adverse

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Totality of cumulative landscape character effects	The Proposed Development would fit in with the established pattern of wind energy development and would consolidate the existing effects on landscape character that have already been brought about by these other schemes and would not extend these effects beyond the extent already introduced by the other schemes.		No additional mitigation – consideration of landscape and visual matters was inherent in the design process	No change	Adverse
Cumulative visual effects	The Proposed Development would not introduce a cumulative significant visual effect		No additional mitigation – consideration of landscape and visual matters was inherent in the design process	No change	Adverse
Cumulative sequential visual effects	The Proposed Development would not introduce a cumulative sequential significant visual effect		No additional mitigation – consideration of landscape and visual matters was inherent in the design process	No change	Adverse
Totality of cumulative visual effects	The addition of the Proposed Development would be such as to result in the overall cumulative visual effect of wind turbines being dominant or oppressive in views experienced at various points within the area.		No additional mitigation – consideration of landscape and visual matters was inherent in the design process	No change	Adverse

5.13 References

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