

Craiginmoddie Wind Farm

Environmental Impact Assessment Report Chapter 6: Landscape and Visual Impact

December 2020

CONTENTS

6 LANDSCAPE AND VISUAL IMPACT

Introduction	1
Legislation and Policy Context.....	2
Stakeholder Consultation.....	3
Assessment Methodology and Significance Criteria	7
Baseline Conditions.....	11
The Proposed Development.....	21
Identification and Evaluation of Effects.....	25
Designated Areas	41
Cumulative Effects.....	45
Night-time Effects.....	56
Summary	67

TABLES

Table 6.1: Summary of Stakeholder Consultation
Table 6.2: Landscape Sensitivity
Table 6.3: Visual Sensitivity
Table 6.4: Magnitude
Table 6.5: Significance
Table 6.6: LCT 17c Foothills with Forestry and Wind Farms - Opportunities and Constraints
Table 6.7: LCT 17c Foothills with Forestry and Wind Farms – Potential Cumulative Issues
Table 6.8: Viewpoint Analysis Summary
Table 6.9: Summary of Landscape and Visual Effects
Table 6.10: Cumulative Wind Farm Developments

FIGURES

6.1 Landscape Context
6.2 Landscape Character
6.3 Topography
6.4 Visual Receptors
6.5 Zone of Theoretical Visibility (ZTV) – incl. screening from woodlands and settlements
6.6 Zone of Theoretical Visibility (ZTV) – bare ground
6.7 Cumulative Base Plan
6.8 Cumulative ZTV – Operational and Consented Sites
6.9 Cumulative ZTV – Clachrie
6.10 Cumulative ZTV – Carrick
6.11 Landscape Character and Existing Light Environment
6.12 Zone of Theoretical Visibility (ZTV) – Visible Aviation Lighting

VISUALISATIONS

Viewpoint 1: South Balloch
Viewpoint 2: Hadyard Hill
Viewpoint 3: Dailly
Viewpoint 4: B741 near Ruglen
Viewpoint 5: Barr
Viewpoint 6: Crosshill
Viewpoint 7: Colonel Hunter Blair Monument, Kildoach Hill
Viewpoint 8: North Threave
Viewpoint 9: Cornish Hill
Viewpoint 10: B734 near Cairnwhin
Viewpoint 11: Maybole War Memorial
Viewpoint 12: Shalloch on Minnoch
Viewpoint 13: A77 north of Girvan
Viewpoint 14: Byne Hill
Viewpoint 15: Merrick
Viewpoint 16: Cairnsmore of Carsphairn

Additional Wireline A: NCN Route 7 near Doughty Hill
Additional Wireline B: River Stinchar - Minor road
Additional Wireline C: B734 near Doon Hill
Additional Wireline D: Brunston Castle Golf Course
Additional Wireline E: Girvan – Barr Hill Path
Additional Wireline F: A714, Laigh Letterpin
Additional Wireline G: Grey Hill
Additional Wireline H: B7045, west of Kirkmichael
Additional Wireline I: Kildonan Beach, Arran
Additional Wireline J: Minor road between Straiton and Tairlaw

APPENDICES

Technical Appendix 6.1: LVIA Methodology
Technical Appendix 6.2: Visuals Methodology
Technical Appendix 6.3: Landscape Sensitivity
Technical Appendix 6.4: Viewpoint Analysis
Technical Appendix 6.5: Wild Land Assessment
Technical Appendix 6.6: Night-time Viewpoint Analysis
Technical Appendix 6.7: Residential Visual Amenity Assessment
Technical Appendix 6.8: References

6 LANDSCAPE AND VISUAL IMPACT

Introduction

- 6.1 Stephenson Halliday was commissioned in August 2020 by Energiekontor to provide landscape and visual consultancy services in respect of the Proposed Development.
- 6.2 This assessment defines the existing landscape and visual baseline environments; assesses their sensitivity to change; describes the key landscape and visual related aspects of the Proposed Development; describes the nature of the anticipated changes and assesses the effects arising during construction and once operational.

The Site and Proposed Development

- 6.3 The Site is located immediately east of the operational Hadyard Hill wind farm. It is situated on a forested plateau which forms a low, undulating ridge between the Stinchar and Girvan Valleys, around 10.5 km east of the town of Girvan. The majority of the existing site is used for commercial forestry while there are some open areas of moorland along the eastern and western edges.
- 6.4 The Proposed Development is for a wind farm comprising 14 turbines of up to 200m tip height, along with associated ancillary infrastructure, as detailed in Chapter 3: Project Description and Construction Methods.

Competence

- 6.5 This chapter has been prepared by Chartered Landscape Architects at Stephenson Halliday. The Practice has over 24 years of experience working on wind energy proposals for over 100 wind energy proposals throughout the UK. Key individuals working on this project have over 20 years of experience as chartered landscape architects.
- 6.6 The Practice is a Landscape Institute (LI) and IEMA registered practice and all work is prepared and reviewed internally by senior highly experienced landscape planners with Public Inquiry experience.
- 6.7 To inform the assessment, site visits were made to various locations within the study area including, but not restricted to, representative viewpoints by Stephenson Halliday's assessment team in October – December 2020.

Study Area

- 6.8 It is accepted practice within landscape and visual assessment work that the extent of the study area for a development proposal is broadly defined by the visual envelope of the Proposed Development. In this case an initial study area of 45 km has been used (as shown by Figure 6.6, based on guidance provided within NatureScot's (formerly SNH) Visual Representation of Wind Farms (Version 2.2) (SNH, 2017), and agreed by consultees (see Table 6.1).

Chapter Structure and Terminology

- 6.9 Supporting appendices have been prepared, as set out in the table of contents, that supplement various sections of this chapter. The appendices are important to the assessment and should be read alongside this chapter.
- 6.10 Key terms used within the assessment are described at 6.19 – 6.26 and a glossary is provided within Technical Appendix 6.1 which sets out the methodology.

Legislation and Policy Context

Local Planning Policy

- 6.11 Current local planning policy is described in the South Ayrshire Local Development Plan (LDP), adopted in September 2014. Relevant policies include:
- **LDP Policy: sustainable development** – is a wide ranging policy which sets out broad criteria which all development should seek to achieve, including respecting landscape character.
 - **LDP Policy: landscape quality** – seeks to conserve landscape quality and local distinctiveness by requiring that development maintains community settings, landcover patterns, special qualities of water environments, important skylines and prominent views.
 - **LDP Policy: protecting the landscape** – relates specifically to proposals within or next to locally designated Scenic Areas, noting that they will be considered against the “significance of impacts and cumulative impacts on the environment, particularly landscape and visual effects”. The Scenic Area designation was reviewed in 2018 and is superseded by a new Local Landscape Area (LLA) designation, due to be adopted under the emerging LDP (see 6.12 below). In line with the scoping request from South Ayrshire Council (herein referred to as SAC) (see Table 6.1), this assessment only considers effects on LLAs.
 - **LDP Policy: renewable energy** – notes broad support for renewable energy proposals where, inter alia, “they will not have a significant harmful effect on residential amenity, the appearance of the area and its landscape character”.
 - **LDP Policy: wind energy** – notes that wind energy proposals will be supported where, inter alia, “they are capable of being accommodated in the landscape”, “they do not have a significant detrimental visual impact” (including residential visual amenity) and where their cumulative impact with other existing, approved and proposed wind farms is acceptable. This policy further notes that supplementary guidance on wind farms will be produced and that the South Ayrshire Landscape Wind Capacity Study, or subsequent updates, will be used to help determine the effect of proposals on the landscape.
- 6.12 Although not yet adopted the second Proposed South Ayrshire Local Development Plan (PLDP2) was published for consultation in September 2019. The applicable policies in PLDP2 are largely not materially different to those of the existing LDP although policies relating to landscape quality reference the new LLA designation. It further notes that for proposals within or affecting LLAs the Council will also consider the guidance contained in the ‘statements of

importance' and management recommendations of the South Ayrshire Local Landscapes Designations Review (2018).

Local Guidance

- 6.13 In addition to the policy documents identified above, there are relevant local guidance and baseline documents as follows:
- South Ayrshire Supplementary Guidance: Wind Energy (adopted 2015)
 - South Ayrshire Supplementary Guidance: Dark Sky Lighting (adopted 2016)
 - South Ayrshire Landscape Wind Capacity Study (updated 2018)
 - South Ayrshire Local Landscape Designations Review (2018)
 - East Ayrshire Landscape Wind Capacity Study (2018)
 - East Ayrshire LDP Background Paper: Sensitive Landscape Areas (2015)
 - Dumfries & Galloway Wind Farm Landscape Capacity Study (2016)
 - Dumfries and Galloway Regional Scenic Areas Technical Paper (2018)
- 6.14 A review of these background documents and their relevance to this assessment is provided at 6.36 – 6.50, within the baseline section of this chapter.

Stakeholder Consultation

- 6.15 A scoping report was submitted to the Scottish Government's Energy Consents Unit (ECU) in June 2020 in respect of the Proposed Development and set out the proposed scope of the LVIA. Consultation responses were subsequently received from stakeholders including NatureScot, in July 2020, and South Ayrshire Council (SAC), in October 2020.
- 6.16 Following receipt of these, Stephenson Halliday prepared a further scope refinement document setting out intended amendments to the scope of the LVIA which was issued to NatureScot and SAC on 11th November 2020. This reflected change arising from consultation feedback and changes to the design of the Proposed Development (reduced turbine numbers and height).
- 6.17 Table 6.1 sets out issues identified through consultation and how these are addressed within the assessment.

Table 6.1: Summary of Stakeholder Consultation

Consultee	Issue	How this is addressed
NatureScot (July 2020)	The LVIA should be carried out in line with Guidelines for Landscape and Visual Impact 3 rd Edition (2013) (GLVIA3)	The methodology for this assessment follows GLVIA3, as set out in Technical Appendix 6.1.

Consultee	Issue	How this is addressed
	<i>"The EIAR should include a Wild Land Assessment and, considering the number of turbines, their height and location, we advise that the assessment should take into account both day and night time impacts on the WLA."</i> <i>"We advise that the applicant assesses the potential for adverse impacts of aviation lighting on the wild land qualities of the Merrick WLA."</i>	A Wild Land Assessment is provided within Technical Appendix 6.5, following recent guidance published by NatureScot¹. This considers the impact of the Proposed Development on the wild land qualities of Merrick Wild Land Area (WLA), including the night-time impact of visible aviation lighting.
	<i>"Importantly there should be night time viewpoint(s) located within the WLA and the wild land assessment should examine how the lighting would affect the wild land qualities at dusk and after dark."</i>	Proposed visible aviation lighting is illustrated on wirelines for all viewpoints, including three within the WLA. Additionally, a night-time photomontage is provided Cornish Hill (VP9).
	<i>"The turbine lighting assessment should consider the cumulative effects of lights from other relevant consented or application stage schemes e.g. Clauchrie and Arecleoch Extension wind farms. It should also include the proposed Carrick Wind Farm which is currently at scoping. The proposed lighting of the cumulative schemes should be illustrated on the night time photomontage from e.g. Shalloch on Minnoch (or a suitable agreed viewpoint) and any other night time photomontages."</i>	Night-time effects of visible aviation lighting are considered at 6.269 – 6.318 which includes consideration of the cumulative impact of lighting with other operational, consented and planned wind farms. Carrick and other selected schemes at scoping are also included. Cumulative lighting is illustrated on night-time photomontages.
	<i>The study area for night-time impacts should extend beyond 10km, "to include, at least, the ridge as far south as the Merrick (15.8km)"</i>	Effects of visible aviation are considered within the 20 km detailed study area which includes Merrick WLA (see Technical Appendix 6.5) and the Galloway Dark Sky Park.
	<i>"If directional lighting is to be employed as a form of mitigation, then it would also be useful to include a lighting intensity ZTV within the assessment (this ZTV should also show the boundaries for the Galloway Dark Skies Park and the Merrick WLA)."</i>	A lighting ZTV is provided on Figure 6.12, this includes proposed directional intensity mitigation and illustrates the boundaries of the Merrick WLA and Galloway Dark Sky Park.

¹ Assessing impacts on Wild Land Areas: Technical Guidance (September 2020). NatureScot

Consultee	Issue	How this is addressed
	<i>"For turbines of this height a 45km study area is appropriate. However, given that turbines of 230m are potentially visible up to more than 70km we advise that a 20km detailed study area might be too restrictive given the cumulative baseline and the landscape context. Accordingly, the applicant should ensure that the detailed study area contains relevant sensitive receptors likely to have potential for significant effects."</i>	Since the original scoping request both the number and height of turbines has been reduced. A 20 km detailed study area is judged to be sufficient to identify all potentially significant effects.
	<i>"We suggest that a further viewpoint location is investigated on Arran from where the turbines might be seen in the foreground of views to the high tops of the Merrick WLA."</i>	An illustrative wireline has been provided as Additional Wireline I in EIA Volume II, in order to demonstrate the relationship between the turbines and the landform of the WLA as appreciated from Arran
	<i>"We would welcome clear numbering of all turbines on at least one visualisation for each viewpoint. We also suggest that forestry felling is shown in any visualisation from a high level viewpoint that looks down into the site."</i>	Visualisations have been produced in line with current best practice guidance ² . Turbines are numbered on relevant wirelines at each viewpoint and forestry felling is illustrated on photomontages.
	<i>"We advise that there should also be at least one viewpoint within the WLA from which a lighting assessment is carried out and photomontages produced."</i>	Effects of visible aviation is considered for all viewpoints, see 6.280 (also Technical Appendix 6.6). A night-time photomontage is included from Cornish Hill (VP9), at the northern end of the Merrick WLA.
South Ayrshire Council (October 2020)	<i>"Detailed consideration should be given to the landscape and visual effects of felling and restocking proposals"</i>	Proposed felling and restocking is considered throughout the assessment.
	<i>"Proposed forest felling areas should be shown in relevant visualisations from nearby viewpoints."</i>	Proposed felling is illustrated on the photomontages
	<i>"The Scenic Area designation has been replaced by Local Landscape Areas and potential effects should be considered in detail on the special qualities and character of the Water of Girvan Valley, the Stinchar Valley and the High Carrick Hills LLAs."</i>	Effects on LLAs are considered at 6.73 – 6.74, 6.179 – 6.192, 6.250 – 6.253 and 6.317 of this chapter.
	<i>"A more detailed ZTV should be provided in the EIA-R based on an OS 1:50,000 scale map base within 15km of the proposal to allow more accurate appraisal of potential visibility."</i>	ZTVs have been produced in line with current best practice guidance ³ . All ZTVs are shown on 1:50,000 scale base mapping and the detailed study area is illustrated on Figure 6.5.

² Visual Representation of Wind Farms, Version 2.2 (February 2017). SNH

³ As above

Consultee	Issue	How this is addressed
	Additional viewpoint requested on the minor road between Straiton and Tairlaw within the Upper Girvan Valley.	There would be very limited blade tip visibility from this stretch of road and there is a lack of a generally suitable and safe viewpoint location. It is not included as a representative viewpoint however an illustrative wireline has been provided as Additional Wireline J in EIAR Volume II.
	Additional viewpoint requested on the B741 west of the Ladyburn junction in the Girvan Valley at	This is included as viewpoint 4.
	<i>"Consideration should be given to visibility and key views from the Barr Trails recreational routes in the Stinchar Valley."</i>	Effects on the Barr Trails are considered at 6.154 – 6.155 and 6.224 – 6.226.
	<i>Lighting effects should be assessed from each of the representative viewpoints and not just from the viewpoints selected to illustrate night-time effects.</i>	Effects of visible aviation is considered for all viewpoints, see 6.280 (also Technical Appendix 6.6)
	<i>Effects on the Dark Sky Park should be additionally assessed.</i>	Effects on the Dark Sky Park are considered at 6.311 – 6.316.
	<i>While the character of the landscape is not readily discernible during hours of darkness, lighting can affect perceptual qualities associated with landscape character and it is recommended that the effect on the sense of seclusion and naturalness (due to existing low lighting levels) are considered in the LVIA.</i>	Effects of visible aviation on landscape character are considered at 6.281 – 6.297.
	<i>The cumulative effects of lighting should be considered in relation to the nearby Clauchrie and Carrick wind farm proposals.</i>	Cumulative effects of visible aviation lighting are considered at 6.269 – 6.316.
NatureScot (December 2020)	<i>"we advise that the proposed 20km detailed study area would omit the wind farms to the west of the A714 in the Barrhill area. This group contains wind farms requiring aviation lighting which are likely to be relevant projects in the cumulative night time lighting assessment. The LVIA study area should be extended to ensure that relevant windfarms in this group are included."</i>	Wind farms to the west of the A714 have been included in visualisations, as set out at 6.196, and are considered in respect of the cumulative effects of visible aviation lighting at 6.269 – 6.316.
	<i>"A wireline (rather than photomontage) from Arran indicating the context of proposed turbines in view towards the Merrick is acceptable."</i>	Noted. See above.

Consultee	Issue	How this is addressed
	<i>"We note that Cornish Hill (viewpoint 9) is proposed as the representative night time lighting assessment viewpoint for the Merrick Wild Land Area. However, to fully understand the cumulative effects of aviation lighting on the Wild Land Area we advise that the representative viewpoint will need to show relevant windfarms that would also require night time aviation lighting. We suspect that Shalloch on Minnoch (viewpoint 12) will better represent the night time cumulative scenarios."</i>	Proposed visible aviation lighting is illustrated on wirelines for all viewpoints and consideration of effects of lighting at all viewpoints is provided, see 6.280 (also Technical Appendix 6.6). Current NatureScot guidance⁴ notes a requirement for "Night-time visualisations from a limited / proportionate number of representative viewpoints (we suggest two or three). These may be selected on the basis of sensitivity or regular usage during low-light conditions." Cornish Hill has been selected for a night-time photomontage over Shalloch on Minnoch as it is closer to the Proposed Development, representing a worst case view from the WLA. It is also more likely to be frequented at night by visitors the Dark Sky Park as it is located close to one of the areas promoted for stargazing activities (Loch Bradan).
	<i>The cumulative assessment should include Knockodhar wind farm (scoping) and relevant wind farms to the west of A714 at Barrhill. In particular it should include those wind farms >150m which would require night time lighting.</i>	Knockodhar and wind farms to the west of the A714 have been included in visualisations, as set out at 6.196, and are considered in respect of the cumulative effects of visible aviation lighting at 6.269 – 6.316.
	<i>"we require photomontages showing 2000cd lights as the essential worst case scenario visualisations."</i>	Night-time photomontages illustrate lighting at 2000 cd.

- 6.18 At the time of writing, no further response has been received from SAC in respect of Stephenson Halliday's scope refinement document, although receipt has been acknowledged by the case officer, and all pre-application consultation has been completed.

Assessment Methodology and Significance Criteria

- 6.19 The detail of the methodology is described in Technical Appendix 6.1. A summary of the primary judgements is provided below.

Sensitivity

- 6.20 Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor as illustrated by the table below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted. A slightly greater weight is given to susceptibility in judging sensitivity of visual receptors as indicated below:

⁴ General pre-application and scoping advice for onshore wind farms (September 2020). NatureScot

Table 6.2: Landscape Sensitivity

		SUSCEPTIBILITY		
		High	Medium	Low
VALUE	National	High	High/Medium	Medium
	Regional	High/Medium	Medium	Medium/Low
	Community	Medium	Medium/Low	Low

Table 6.3: Visual Sensitivity

		SUSCEPTIBILITY		
		High	Medium	Low
VALUE	National	High	High/Medium	Medium
	Regional	High/Medium	High/Medium	Medium/Low
	Community	High/Medium	Medium	Low

Magnitude

- 6.21 Scale of effect is the primary factor in determining magnitude, which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale. The table below illustrates how this judgement is considered as a two-step process.

Table 6.4: Magnitude

Scale / extent		Large	Medium	Small	Negligible
	Wide	Substantial			
	Intermediate		Moderate		
	Localised			Slight	
	Limited				Negligible

Stage 1 Result / Duration		Substantial	Moderate	Slight	Negligible
	Permanent	Substantial			
	Long-term		Moderate		
	Medium-term			Slight	
	Short-term				Negligible

- 6.22 Where magnitude is judged to lie between levels, an intermediate assessment will be adopted.

Significance of Effects

- 6.23 The significance of any identified landscape or visual effect is assessed as major, moderate, minor or negligible. These categories are based on the consideration of sensitivity with the predicted magnitude of change. The table below is not used as a prescriptive tool and illustrates the typical outcomes, allowing for the exercise of professional judgement. In some instances, a particular parameter may be considered as having a determining effect on the analysis.

Table 6.5: Significance

		Magnitude of Change			
		Substantial	Moderate	Slight	Negligible
Sensitivity of Receptor	High	Major	Major/ Moderate	Moderate	Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor/ Negligible
	Low	Moderate	Moderate/ Minor	Minor	Negligible

- 6.24 Where the effect has been classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Where Moderate effects are predicted, professional judgement will be applied to ensure that the potential for significant effects arising has been thoroughly considered. The conclusion that some effects are 'significant' should not be taken to imply that they should warrant refusal in any decision-making process.

Beneficial/Adverse

- 6.25 Landscape and visual effects can be beneficial or adverse and in some instances may be considered neutral. Neutral effects are those which overall are neither adverse nor positive but may incorporate a combination of both.
- 6.26 With regard to the visual effects of wind farms, it is important to recognise the differing views revealed by extensive available research and to take into account that for the same development, some may view the impact as adverse, some as beneficial and yet others as neutral. This depends to some extent on the viewer's predisposition towards landscape change but also their opinions regarding climate change and the principle of renewable energy development including wind farms in the landscape. Taking a precautionary approach in making an assessment of the 'worst case scenario', the assessment considers that all effects on views which would result from the construction and operation of the Proposed Development to be adverse, unless specified otherwise in the text. It should be noted however that not all people would consider the effects to be adverse.

Cumulative Assessment

- 6.27 The cumulative assessment relates to the assessment of the effects of more than one development. The approach to the cumulative assessment is set out alongside the assessment in the relevant section of this chapter. Further detail is set out within Technical Appendix 6.1.

Night-time Assessment

- 6.28 The Proposed Development includes visible aviation lighting for which an assessment of potential night-time impacts is included. The approach to night-time assessment is set out alongside the assessment in the relevant section of this chapter.

Residential Amenity

- 6.29 As set out within LI Technical Guidance Note 02//19 'Residential Visual Amenity Assessment (RVAA)':

"Changes in views and visual amenity are considered in the planning process. In respect of private views and visual amenity, it is widely known that, no one has 'a right to a view.' ...

It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence as a result of introducing a new development into the landscape. In itself this does not necessarily cause particular planning concern. However, there are situations where the effect on the outlook / visual amenity of a residential property is so great that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before." [paragraphs 1.5-1.6]

- 6.30 The methodology for and assessment of effects on residential visual amenity for properties is included as Technical Appendix 6.7.

Distances

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

Visual Aids

- 6.32 Photographs of the existing views, along with wirelines and photomontages showing the Proposed Development are included within Volume II. The method of visualisation selected has been informed by LI Technical Guidance Note 06/19 'Visual Representation of Development Proposals' and NatureScot's 'Visual Representation of Wind Farms – Guidance' (Feb 2017). The methodology of production for the visualisations is described in Technical Appendix 6.2.

Baseline Conditions

Introduction

- 6.33 An overview of the baseline study results is provided in this section with the further baseline description of the individual landscape and visual receptors being provided alongside the assessment of effects for ease of reference.
- 6.34 This section provides a review of the key local baseline studies and guidance documents and identifies those landscape and visual receptors which merit detailed consideration in the assessment of effects, and those which are not taken forward for further assessment as effects *"have been judged unlikely to occur or so insignificant that it is not essential to consider them further"* (GLVIA3, paragraph 3.19).

- 6.35 Both this baseline section and the effects section describe landscape character and visual receptors before considering designated areas as it is common for designations to encompass both character and visual considerations within their special qualities or purposes of designation.

Local Guidance and Baseline Studies

- 6.36 The following guidance documents provide advice relevant to this assessment:

South Ayrshire Supplementary Guidance: Wind Energy (adopted 2015)

- 6.37 This Wind Energy Supplementary Guidance (SG) document supplements LDP Policy: Wind Energy, it firstly sets out a spatial framework for wind development, in line with Scottish Planning Policy, and secondly provides supplementary detail on how policy criteria within the LDP will be applied.
- 6.38 In respect of landscape character, the Wind Energy SG notes that the baseline descriptions of landscape character and management guidelines were set out in the Ayrshire Landscape Assessment 1998 but subsequently refined and revised in the South Ayrshire Landscape Wind Capacity Study (SALWCS). It reiterates the SALWCS will inform the assessment of future wind energy proposals and that they should have regard to advice given in the capacity study regarding landscape sensitivity.
- 6.39 The Wind Energy SG further sets out a landscape strategy which identifies a number of key objectives, noting that proposals “*should seek to mitigate direct impacts on these interests through careful siting and design*”. The response of the Proposed Development to these objectives is discussed further at 6.78 – 6.85.
- 6.40 In respect of visual impact, the Wind Energy SG lists a range of interests (receptors) that should be considered. It notes that “*a range of viewpoints should be chosen which are representative of issues in the area and which are likely to experience significant effects*” and that material supplied to inform the assessment should reflect SNH (now NatureScot) good practice guidance. It further notes in respect of residential visual amenity that the design of a wind farm “*should seek to minimise significant visual effects on private property*”. Criteria set out in the Wind Energy SG in respect of visual impact have informed the selection and assessment visual receptors within this chapter.
- 6.41 Cumulative landscape and visual impacts are also identified as a particular issue within South Ayrshire and number of specific considerations are identified. These are considered within the cumulative assessment at 6.194 – 6.254.

South Ayrshire Supplementary Guidance: Dark Sky Lighting (adopted 2016)

- 6.42 This document primarily deals with development within the Galloway Forest Dark Sky Park (DSP) itself although also sets out best practice guidance for development within the ‘transition zone’, including the Site, which extends 10 miles beyond the DSP boundary. In respect of wind turbines it identifies that within the transition zone it is preferable, where required, for infrared aviation lights to be used however it should be noted that for turbines

over 150 m that this is incompatible with the mandatory Civil Aviation Authority (CAA) requirement for visible aviation lighting.

South Ayrshire Landscape Wind Capacity Study (updated 2018)

- 6.43 The SALWCS was originally published in 2013 and subsequently updated in 2018, principally to provide additional consideration of larger typology turbines than the original 2013 study. It aims to inform strategic spatial planning for wind energy and offers guidance for development through a landscape and visual sensitivity assessment for developments sited in the various Landscape Character Types (LCTs) within South Ayrshire. 'Sensitivity' to various development typologies is assessed for each LCT in relation to:
- landscape context;
 - scale;
 - landform;
 - landscape pattern;
 - built environment;
 - perceptual qualities;
 - visual amenity; and
 - cumulative effects.
- 6.44 Each LCT is then assigned an overall 'sensitivity' rating based on the sum of these factors. This study explicitly excludes consideration of landscape value from its consideration of 'sensitivity' and, in terms of this assessment, is akin to GLVIA3 landscape susceptibility.
- 6.45 The findings of this study informs this assessment in respect of considering the effects of the Proposed Development on landscape character within South Ayrshire.

South Ayrshire Local Landscape Designations Review (2018)

- 6.46 This study provides a review of existing, long standing local landscape designations in light of current national guidance and defines a new landscape designation, Local Landscape Areas (LLAs), within South Ayrshire. It sets out the boundaries for each LLA and provides a Statement of Importance which sets out reasons for designation and describes its special qualities along with a summary of sensitivities to change and management recommendations. This study informs this assessment in relation to considering effects of the Proposed Development on LLAs.

East Ayrshire Landscape Wind Capacity Study (2018)

- 6.47 The East Ayrshire Landscape Wind Capacity Study (EALWCS) mirrors that of South Ayrshire. It was originally authored and subsequently updated by the same consultant at the same time. The scope and purpose of the document is the same as described for the SALWCS above and informs this assessment in respect of considering the effects of the Proposed Development on landscape character within East Ayrshire.

East Ayrshire LDP Background Paper: Sensitive Landscape Areas (2015)

- 6.48 This document sets out the basis for designation and boundaries of the Sensitive Landscape Areas (SLAs) identified within East Ayrshire. This paper informs this assessment in relation to considering effects of the Proposed Development on SLAs.

Dumfries & Galloway Wind Farm Landscape Capacity Study (2016)

- 6.49 The Dumfries & Galloway Wind Farm Landscape Capacity Study (DGWLCS) provides a similar function to the SALWCS, setting out an assessment of landscape sensitivity to wind energy development, at a range of different size typologies, for each LCT identified within Dumfries and Galloway. It differs, however, in that it provides some consideration of landscape value in reaching its conclusions on sensitivity. The findings of this study informs this assessment in respect of considering the effects of the Proposed Development on landscape character within Dumfries and Galloway.

Dumfries and Galloway Regional Scenic Areas Technical Paper (2018)

- 6.50 This document sets out the basis for designation and boundaries of the Regional Scenic Areas (RSAs) identified within Dumfries and Galloway. This paper has informed this assessment in relation to considering effects of the Proposed Development on RSAs.

ZTV Study

- 6.51 Zone of Theoretical Visibility (ZTV) studies were generated based on the design of the Proposed Development. The analysis was carried out using a topographic model, shown on Figure 6.5, and incorporating the screening effects of forestry, woodland and buildings, shown on Figure 6.6, to show potential visibility of the proposed turbines. Other elements of the Proposed Development such as roads and compounds are not included within the ZTV study. The model does not take account of any localised features such as small copses, hedgerows or individual trees which may result in additional screening. The methodology for production of ZTVs is described in detail within Technical Appendix 6.2. The ZTV studies were used to aid the identification of those receptors that are likely to be most affected by the Proposed Development and those that do not require detailed consideration. It should be noted that in many areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.
- 6.52 The ZTVs illustrate that there would be relatively widespread visibility of turbines within 5 km although the landform of the Girvan and Stinchar Valleys creates gaps in theoretical visibility in the nearest parts of the valleys. To the south and east, beyond 5 km, theoretical visibility rapidly fragments as a result of both landform and extensive forestry cover such that views would tend to be limited to open hilltops or other elevated areas in these directions.
- 6.53 To the north and west, theoretical visibility is more widespread, particularly within 10 km, although it remains somewhat fragmented and there are frequent gaps in lower lying areas and those areas where woodland cover is more prevalent. Beyond 10 km the extent of

theoretical visibility is much more limited, in particular there is very little potential visibility from the coast and associated settlements and transport corridors.

- 6.54 There is a more notable band of potential visibility extending across generally open farmland north of Maybole, south and southeast of Ayr, extending between approximately 10 – 20 km from the Proposed Development. This is broken up in places by undulating topography and frequent shelterbelts and small woodlands and, in reality, it is likely to be further limited by hedgerows and other localised vegetation not modelled within the ZTV. To the southwest there are also some more continuous areas of visibility between 15 – 30 km which are generally associated with relatively remote, elevated areas including existing wind farms and areas with extensive forestry cover.
- 6.55 Effects on landscape or visual receptors outside the areas of visibility shown on the ZTV study would be Negligible and are not considered further.

Landscape Character

- 6.56 Landscape character types in the 20 km detailed study area are shown on Figure 6.2. Baseline landscape character for the study area is described within the various capacity studies for the local authorities covering the study area, as discussed at 6.43 – 6.49.
- 6.57 The Proposed Development is situated entirely within SA17c Foothills with Forest and Wind Farm, the host LCT. The following LCTs are located within the detailed study area and are likely to have visibility of the Proposed Development, as shown by the ZTV studies, and are considered further at 6.102 – 6.143:
- **SA17c: Foothills with Forest and Wind Farm** (0 km – contains Site)
 - **SA13: Intimate Pastoral Valleys** (0.5 km south)
 - **SA12: Middle Dale** (1.8 km northwest)
 - **SA21: Rugged Uplands, Lochs and Forests** (3.5 km south)
 - **SA17d: Maybole Foothills** (5.7 km northwest)
 - **SA11: Lower Dale** (6.7 km west)
 - **SA4b: Coastal Headlands – Brown Carrick Hill** (11.6 km north)
- 6.58 There are also a number of LCTs which are excluded from the detailed assessment on the basis that effects are likely to be Negligible, for the reasons indicated below:
- **SA17b: Foothills with Forest west of Doon Valley** (7.4 km northeast) – some theoretical visibility is indicated by the ZTVs in the southern part of this LCT however this area hosts and is heavily influenced by the operational Dersalloch wind farm, as illustrated by Figure 6.2.
 - **SA17e: Coastal Foothills** (11.8 km southwest) – theoretical visibility is limited to a relatively small number of hilltops where extensive existing wind development is already visible, (including Tralorg, Assel Valley, Hadyard Hill, Mark Hill and Arecleoch) at closer proximity than the Proposed Development, as illustrated by Figure 6.2.
 - **SA9: Lowland River Valley** (12.7 km north) – there is relatively little potential visibility indicated by the ZTVs within this well wooded area. In reality, potential views would be

further reduced by other localised vegetation cover, not modelled within the ZTVs, and there would be few notable views of the Proposed Development.

- **EA17a Foothills with Forest & Opencast Mining** (15.0 km northeast) – a broad band of potential visibility extends across the closest part of this LCT however it is relatively distant and is heavily influenced by former opencast mining and the existing wind farm development at Dersalloch, between here and the Site.
- **SA7d: South Ayrshire Lowlands** (15.3 km north) – this LCT is more than 15 km from the Proposed Development and the ZTVs illustrate limited potential visibility. Given the distance and limited visibility, notable effects on character are unlikely.

6.59 In addition to these, the following LCTs are excluded from the detailed assessment on the basis that they are heavily forested and/or are illustrated by the ZTVs to have such limited potential visibility that effects are likely to be Negligible:

- **SA5: Coastal Valley with Policies** (11.4 km northwest)
- **SA1c: Raised Beach Coast with Flat Fields and Headlands** (11.5 km west)
- **SA18c: Plateau Moorlands and Forestry** (4.7 km south)
- **SA14: Upland Glen** (19.7 km southwest)
- **EA17b: Foothills with Forest west of Loch Doon** (11.0 km northeast)
- **EA21: Rugged Uplands, Lochs & Forest** (11.3 km east)
- **EA10: Upland River Valley** (13.3 km northeast)
- **EA9: Lowland River Valley** (14.6 km north)
- **EA7c: East Ayrshire Lowlands** (15.7 km north)
- **EA20c: Southern Uplands & Forestry** (17.0 km east)
- **DWG17a: Plateau Moorland with Forest** (12.0 km south)
- **DWG21: Rugged Granite Upland** (14.6 km southeast)
- **DWG21a: Rugged Granite Upland with Forest** (16.5 km southeast)
- **DWG19a: Southern Uplands with Forest** (17.2 km east)
- **DWG9: Upper Dale (Valley)** (18.0 km east)

Visual Receptors

6.60 Visual receptors are “the different groups of people who may experience views of the development” (GLVIA3, paragraph 6.3). In order to identify those groups who may be significantly affected, the ZTV study, baseline desk study and site visits have been used.

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

6.62 Representative viewpoints have been selected to aid the assessment of effects on visual receptors.

Baseline Visual Environment

- 6.63 The Site is situated with an area of forested hills which form an undulating, low ridgeline between the Stinchar and Girvan Valleys. To the south and east, the detailed study area largely comprises sparsely populated upland areas that host extensive areas of commercial forestry which tends to restrict views. However, long distance views are possible from many open hilltops and at lower levels there are some channelled views along upland valleys; the only one of which likely to feature the Proposed Development being the Stinchar Valley.
- 6.64 To the north and west, the detailed study area is more extensively settled with relatively frequent villages, small towns and extensive rural development. The landform here is generally lower and more gently undulating and there is markedly less commercial forestry although there many areas of broadleaf woodland and frequent shelterbelts. The main land uses are agricultural and there are fairly frequent views from the more elevated areas that look across open countryside. Along the coast, outward views predominate and there are more limited opportunities for views inland.

Visual Receptor Groups

- 6.65 The following visual receptor groups are located within the detailed study area and are likely to have visibility of the Proposed Development, as illustrated by the ZTVs, and are considered further at 6.144 – 6.166:
- **Stinchar Valley (northeast of Barr)** (1.5 km south)
 - **Dailly** (3.0 km northwest)
 - **Barr Trails** (3.6 km south)
 - **Girvan Valley (northeast of Dailly)** (4.2 km northwest)
 - **Girvan Valley (southwest of Dailly)** (4.6 km northwest)
 - **Stinchar Valley (southwest of Barr)** (5.4 km southwest)
 - **Straiton** (6.9 km northeast)
 - **Maybole** (9.5 km north)
- 6.66 There are also a number of receptor groups which are excluded from the detailed assessment on the basis that visual effects are likely to be Negligible, for the reasons indicated below:
- **Core Paths within the Foothills with Forest and Wind Farm LCT** (0.1 km east) – aside from the closest of these Core Paths, SA1 which passes immediately east of the Site, they would all have only intermittent visibility and are already strongly influenced by existing wind farms. Core Path SA1 follows the same route as National Cycle Network (NCN) Route 7 which is considered further at 6.172 – 6.176.
 - **Barr** (4.6 km southwest) – this village is situated in a localised valley and the ZTVs indicate that there would be no potential visibility from the majority of the settlement. The only visibility indicated is from a short section of Glenginnet Road as it leaves the settlement to the northeast however an avenue of mature trees would largely screen views towards the Proposed Development from here, even in winter (see Viewpoint 5). The areas either side of Barr are included within the Stinchar Valley receptor groups, as noted above.

- **Girvan** (10.5 km west) – the ZTVs indicate only small areas of potential visibility at the northern end of Girvan. Where visible, the Proposed Development would be relatively distant and generally seen beyond existing turbines at Hadyard Hill, it would not notably alter the existing views. The area northeast of Girvan would be included within the Girvan Valley receptor group noted above.
- **Blairquhan Estate** (6.4 km northeast) – this visual receptor group coincides with the Garden and Designed Landscape (GDL) of the same name. It is a heavily wooded and the ZTVs indicate very little potential visibility from the B7045 running through it and Core Paths along the southern and western edges largely run through woodland where views would be very limited.
- **Craigengillan Estate** (11.9 km east) – this visual receptor group coincides with the GDL of the same name. It encompasses the valley north of Loch Doon and open hills to the west. Only very limited areas of potential visibility, confined to hilltops, are illustrated by the ZTVs. In these areas the Proposed Development would be seen beyond the existing, much closer, turbines at Dersalloch and would not be a particularly notable addition to views.
- **Dispersed settlement beyond 15 km to the north** (15 km north) – this group includes Dalrymple and dispersed settlement extending to the edge of Ayr to the north where the ZTVs indicate theoretical visibility is intermittent and largely confined to areas of open farmland. In reality the extent of localised vegetation in this area, not illustrated by ZTVs, would further reduce the extent of visibility. Where visible, the Proposed Development would be a perceptible but more distant feature in the wider landscape.
- **Ayr** (18.0 km north) – the ZTVs indicate some potential visibility but due to the extent of screening within the settlement and from the edges of the settlement the extent of the settlement affected would be limited. Where visible, the Proposed Development would be a perceptible but more distant feature in the wider landscape.
- **Firth of Clyde** (12.5 km west) – the ZTVs indicate widespread visibility from the firth although the landform of Brown Carrick Hill and hills to the south of Girvan result in some large gaps in visibility from the adjacent near shore areas. Where visible, the Proposed Development would be seen directly beyond or adjacent to existing turbines at long distance. It would also be seen in the context of wider wind energy development within South Ayrshire and western Dumfries and Galloway and would not be a particularly prominent or notable addition to views.

Key Routes

Roads and Rail

- 6.67 The following main road and rail routes are located within the detailed study area and are likely to have visibility of the Proposed Development, as illustrated by the ZTVs, and are considered further at 6.167 – 6.171:
- **Glasgow – Stranraer Railway** (4.9 km northwest)
 - **A77** (9.6 km northwest)
- 6.68 There are also a number of routes which are excluded from the detailed assessment on the basis that visual effects are likely to be Negligible, for the reasons indicated below:

- **A714** (11.6 km southwest) – the only theoretical visibility indicated by the ZTVs on this route is a very short section at Laigh Letterpin where the Proposed Development would be seen directly beyond other existing, and much closer, turbines; as illustrated by Additional Wireline in EIA Volume II.
- **A719** (12.5 km northwest) – the ZTVs indicate virtually no potential visibility from this route.
- **A713** (13.8 km northeast) – the ZTVs indicate only intermittent potential visibility from short sections of the route over 15 km from the Proposed Development where the turbines are unlikely to be a notable feature in the views of users.

Recreational Routes

6.69 The following long distance recreational routes are located within the detailed study area, as illustrated on Figure 6.4, and are likely to have visibility of the Proposed Development, as illustrated by the ZTVs, and are considered further at 6.172 – 6.176:

- **NCN Route 7** (0.1 km east)

6.70 There are also a number of long distance recreational routes which are excluded from the detailed assessment on the basis that visual effects are likely to be Negligible, for the reasons indicated below:

- **Carrick Forest Drive** (7.8 km east) – this route extends from the western end of Loch Bradan and follows forest tracks heading southwest to the southern end of Loch Doon. The ZTVs indicate intervening landform would almost entirely screen views of the Proposed Development and, in reality, it is unlikely any views would be possible due to the added screening of forestry.
- **Ayrshire Coastal Path** (11.3 km west) – the ZTVs indicate extremely limited potential visibility from this route. Where visible, the Proposed Development would be a distant feature and generally seen beyond or adjacent to existing turbines, it would not notably alter the existing views.
- **Galloway Tourist Route** (13.8 km northeast) – this route follows the A713 through the study area. As set out above, the ZTVs indicate only intermittent potential visibility from short sections of the route over 15 km from the Proposed Development where the turbines are unlikely to be a notable feature in the views of users.
- **South West Coastal 300** (7.4 km northeast) – the majority of this route is outside of the ZTVs as it passes through the detailed study area. Some very limited, intermittent potential visibility is indicated from sections of this route as it passes through the northern part of the detailed study area, looping north of Maybole, although this is likely to be less than indicated due to extensive roadside vegetation not modelled within the ZTV.

Specific Viewpoints

6.71 The following specific, promoted viewpoints (panoramic viewpoints indicated on OS maps) have been identified within the detailed study area and are considered further at 6.144:

- **Byne Hill** (13.2 km southwest)

6.72 There are also a number of specific viewpoints which are excluded from the detailed assessment on the basis that visual effects are likely to be Negligible, for the reasons indicated below:

- **Bennan Hill** (6.4 km northeast) – this view is oriented to the northeast, looking across the upper reaches of the Girvan Valley towards the village of Straiton and away from the Proposed Development.
- **Brown Carrick Hill** (16.8 km north) – this view is oriented to the northeast looking out towards Ayr and away from the Proposed Development.

Landscape Designations and Value

Designated areas

6.73 Designated landscapes within the detailed study area are illustrated on Figure 6.1. The following areas are likely to have visibility of the Proposed Development, as shown by the ZTVs and are considered further at 6.179 – 6.192:

- **Stinchar Valley LLA** (0.3 km south)
- **Water of Girvan Valley LLA** (0.4 km northwest)
- **High Carrick Hills LLA** (4.6 km southeast)
- **Brown Carrick Hills & Coast LLA** (11.6 km north)

6.74 There are also a number of designated areas which are excluded from the detailed assessment on the basis that effects are likely to be Negligible, for the reasons indicated below:

- **Culzean LLA** (11.0 km northwest) – this area extends around the Culzean Castle GDL, it is heavily wooded and the ZTVs indicate very limited potential visibility.
- **East Ayrshire SLA** (11.0 km northeast) – the ZTVs indicate very limited potential visibility within this area, primarily around the periphery.
- **Galloway Hills RSA** (11.6 km southeast) – this is a heavily forested area within Dumfries and Galloway and the ZTVs indicate little potential visibility.
- **Turnberry Coast LLA** (12.2 km northwest) – this area encompasses the Turnberry golf course and the ZTVs indicate very limited potential visibility. Undulating terrain and embankments within the golf course mean that in reality views are likely to be even less widespread.
- **Doon Valley LLA** (12.4 km north) – there is relatively limited potential visibility indicated by the ZTVs within this well wooded area. In reality, potential views would be further reduced by other localised vegetation cover, not modelled within the ZTVs, and there would be few notable views of the Proposed Development.

Girvan to Ballantrae Coast & Hills LLA (11.8 km southwest) – theoretical visibility is limited to a relatively small number of hilltops where extensive existing wind development is already visible, (including Tralorg, Assel Valley, Hadyard Hill, Mark Hill and Arecleoch) at closer proximity than the Proposed Development, as illustrated by Figure 6.2.

- 6.75 Effects on the Merrick Wild Land Area (WLA) and visitors to the Galloway Forest Dark Sky Park (DSP) are separate matters. Effects on the WLA are considered further at 6.193 and within Technical Appendix 6.5 while effects on users of the DSP are considered in the assessment of night-time effects at 6.311 – 6.316.
- 6.76 Those GDLs located within the detailed study area are largely privately owned with restricted public access, those with ready public access are considered as visual receptor groups, as set out at 6.65 – 6.66. Impacts on GDLs and matters of setting are considered separately within Chapter 7: Cultural Heritage and Archaeology.

Local Landscape Value

- 6.77 GDLs are identified via designation as being of National value while locally designated landscapes (including LLAs, SLAs and RSAs) are judged to be of Regional value. The remainder of the detailed study area is of Community value.

The Proposed Development

Introduction

- 6.78 The Proposed Development is described in detail in Chapter 3: Project Description and Construction Methods and illustrated on Figure 3.1. It includes the following elements which could potentially give rise to landscape and visual effects:
- 14 turbines up to 200m to blade tip;
 - Associated turbine transformers;
 - Hardstanding areas for erecting cranes at each turbine location;
 - On-site tracks connecting each turbine;
 - A temporary construction compound;
 - On-site substation;
 - Borrow pit;
 - New access;
 - Forestry felling and replanting; and
 - Battery Storage Compound.
- 6.79 Visible aviation lighting is required on turbines in excess of 150 m to blade tip with a medium intensity (2000 candela) steady red aviation warning light on the nacelle (with dimming option to 200cd when visibility is good) and a low intensity light (25cd) half way down the tower. Directional intensity mitigation is proposed for the nacelle lighting and is discussed further in the assessment of night-time effects at 6.258.
- 6.80 The construction phase is expected to last approximately 12 months, as set out in Chapter 3: Project Description and Construction Methods. The construction phase activities and temporary features with the potential to cause an effect on landscape and visual amenity include HGV & abnormal load deliveries to the Site, the movement of vehicles therein and construction of all elements of the proposed Development including the use of cranes for erection of wind turbines.

- 6.81 Planning permission is sought for 35 years of the operational phase of the wind farm. After the expiration of this period the turbines would be decommissioned and removed. Any alternative course of action would require a fresh planning application to be submitted.

Design Approach and Mitigation

- 6.82 The design approach is described in full within Chapter 4: Design Evolution. Measures to reduce landscape and visual impacts have been embedded into the design of the proposed Development and include:
- Location of the Site within an existing wind farm landscape character type.
 - Location of the Site adjacent to an existing wind farm.
 - Reduction in the proposed tip height of turbines from 230 m, as proposed within the Scoping Report, to 200 m in order to; avoid any potential overbearing effects on the nearest residential properties, improve design fit with the adjacent Hadyard Hill turbines, and to provide a better design fit with the underlying landform.
 - Reduction in the number of turbines from 16, as proposed within the Scoping Report, to 14 in order to provide a greater offset from residential receptors to the south and pull back from the sensitive Stinchar Valley.
 - Adjustments in turbine positions to maximise offsets from the nearest residential properties.
 - Siting of the construction compound, substation and battery storage within the lower lying core of the Site, surrounded by retained forestry, to minimise visual prominence.
 - Siting of borrow pit search areas on lower lying, inward facing slopes to minimise visual prominence.
 - Minimising the requirement for forestry felling and the proposed restocking of forestry areas around turbines to minimise the appearance of keyholing.
 - Track layout maximises the use of existing forestry tracks.
 - Proposed visible aviation lighting includes directional intensity mitigation and the option to reduce the intensity of visible aviation lights to 200cd in good visibility.

South Ayrshire Capacity Guidance

- 6.83 The SALWCS identifies a range of opportunities and constraints to development within each identified LCT, Table 6.6 below considers the Proposed Development against these criteria.

Table 6.6: LCT 17c Foothills with Forestry and Wind Farms – Opportunities and Constraints

Opportunity/Constraint	Response of the Proposed Development
<i>The more prominent steep-sided peripheral hills with well-defined summits which occur on the outer edges of these foothills and include Barony, Hadyard, and Maxwellton hills lying on the southern edge of the Girvan Water, Genoch Inner Hill in the upper Girvan Valley and Craig of Dalwine, Auchensoul and Kirkland Hills on the north side of the Stinchar Valley. These 'landmark' hills form a backdrop to the settled and smaller scale Intimate Pastoral Valley (13) and Middle Dale (12) of the Stinchar and Girvan Water valleys and, in some locations, also visually contain the operational wind farm of Hadyard Hill from these valleys.</i>	The Proposed Development is not sited on any of these prominent hills and the ZTVs indicate that these hills also provide a degree of visual containment to the Proposed Development. Although the Proposed Development would be visible from parts of the Stinchar and Girvan Valleys the turbines would generally not be seen directly beyond the noted 'landmark' hills (see Viewpoints 1, 3, 4, 5, 6 and 10; also Additional Wirelines B, D and F).
<i>The landmark hill of Glenalla Fell which forms a prominent high top seen from the Carrick Forest Drive and from parts of the Middle Dale (12) and Genoch Inner Hill whose steep, rugged slopes form the backdrop to the Intimate Pastoral Valley (13) at the head of the Water of Girvan.</i>	The Proposed Development is sited well away from these hills and would not notably impinge on the backdrop they provide to the Intimate Pastoral Valley LCT where ZTVs illustrate only limited blade tip visibility (also see Additional Wireline J: Minor road between Straiton and Tairlaw).
<i>The narrowness of the western part of these foothills which increases sensitivity in terms of potential effects on adjacent smaller scale settled valleys.</i>	As illustrated by Figure 6.2, the Proposed Development is located in the eastern half of this LCT as it begins to widen.
<i>The proximity of the dramatic Rugged Uplands, Lochs and Forest (21) which lie to the south and east of this character type and have a distinct sense of seclusion and relatively unmodified character and are also popular for recreation.</i>	The Proposed Development is a similar distance from the Rugged Uplands, Lochs and Forest LCT as the adjacent Hadyard Hill turbines. It is not in an adjacent part of the LCT and the ZTVs illustrate that there would be relatively little potential visibility from within the Rugged Uplands, Lochs and Forest LCT.
<i>Less visually prominent densely forested lower hills and shallow basins within the eastern core of these uplands which could provide a degree of visual containment for wind turbines while minimising effects on adjacent sensitive landscapes.</i>	The Proposed Development is situated within forestry in the eastern half of the LCT.

6.84 Overall the Proposed Development responds positively to the majority of opportunities and constraints identified in guidance. In addition to these, the guidance also sets out a number of potential cumulative issues that may arise as a result of future development in the host LCT, as discussed in Table 6.7 below.

Table 6.7: LCT 17c Foothills with Forestry and Wind Farms – Potential Cumulative Issues

Issue	Response of the Proposed Development
<i>Inter-visibility between larger turbines which are more likely to be located in this upland landscape character type and smaller turbines sited in the adjacent more settled and smaller scale Intimate Pastoral Valley (13), Lower Dale (11) and Middle Dale (12).</i>	The guidance notes at paragraph 2.4.1 that there are few small/single turbines in South Ayrshire. As illustrated on Figure 6.2, there are none in the adjacent Lower Dale LCT and the only two in the other two LCTs noted are well to the west, to the far side of Tralorg and Assel Valley from the Proposed Development. Intervisibility between these and the Proposed Development is unlikely to be notable.
<i>Simultaneous and sequential views of the operational Hadyard Hill, Tralorg and Assel Valley wind farms together with any additional larger wind turbine developments located in other parts of this character type and in presently undeveloped north-eastern part of the South Ayrshire Plateau Moorland with Forest and Wind Farm (18c) character type seen on containing skylines either side of the small scale, settled and highly sensitive Stinchar Valley.</i>	Skylines on the northern side of the Stinchar Valley are influenced by existing development. The ZTVs illustrate the Proposed Development would also be visible in some views from here. Effects on the Stinchar Valley are considered in detail at 6.112 – 6.121 and 6.204 – 6.207.
<i>Simultaneous and sequential views of the Hadyard Hill, Tralorg and Assel Valley wind farms together with any additional wind turbine developments located in other parts of this character type and in the Foothills with Forest West of Doon Valley (17b) and the Maybole Foothills (17d) seen from the well-settled and richly diverse Middle Dale (12) of the Girvan Valley (the operational Dersalloch and consented Kirk Hill wind farm already influence views from parts of this landscape). Additional development in these surrounding foothills could be perceived as having an encircling and dominant effect on the Girvan Valley.</i>	The Proposed Development is set further back from the Girvan Valley than other existing and consented development within the noted character types. It is adjacent to other existing development and would not result in any apparent encircling or dominant effects. Effects on the Girvan Valley are considered in detail at 6.122 – 6.130 and 6.208 – 6.210.
<i>Potential cumulative effects associated with any further wind farm development sited in this character type and in the north-eastern part of the South Ayrshire Plateau Moorland with Forest and Wind Farms (18c) on the sense of wildness and on views from popularly accessed hills within the Rugged Hills, Lochs and Forest (21) character type.</i>	The Proposed Development is a similar distance from the Rugged Uplands, Lochs and Forest LCT as the adjacent Hadyard Hill turbines and the ZTVs illustrate that there would be relatively little potential visibility from within this character type. Effects on the Rugged Hills, Lochs and Forest LCT are considered in detail at 6.131 – 6.136 and 6.211 – 6.213.
<i>Potential effects on the design rationale of the operational Hadyard Hill wind farm which is set within a shallow basin contained by a rim of higher hills which limits the visual intrusion of this development from parts of the Stinchar and Girvan Valleys, Girvan and the coast. Turbines sited on these higher hills would diminish the integrity of this wind farm and result in cumulative effects.</i>	The guidance is unclear as to what aspect of the design rationale for Hadyard Hill wind farm may be affected and original application documents for this scheme are no longer available. However, the Proposed Development has been designed to provide a good fit with the existing scheme. The cumulative ZTV on Figure 6.8 also illustrates that existing and consented wind development is widely visible within the Stinchar and Girvan Valleys and from coastal areas around Girvan and that the Proposed Development would add very little in the way of new areas of turbine visibility.

- 6.85 As set out in the table above, potential cumulative issues are considered further in the assessment of effects sections of this chapter.

Identification and Evaluation of Effects

Introduction

- 6.86 This section sets out the effects that the Proposed Development would have on landscape and visual receptors both during construction/decommissioning and operation.

Effects on Site Fabric

- 6.87 Changes to landscape fabric occur where there would be physical changes to the landscape. In this instance, changes to landscape fabric would predominantly occur within the Site.
- 6.88 The proposed turbines and their bases would represent the addition of new man-made elements of considerable scale into the local landscape. However, the introduction would only directly affect a relatively small portion of the existing landscape fabric. The associated infrastructure (including access tracks, substation and energy storage) would also represent new man-made features within the Site, albeit these would be of a far smaller scale and of substantially lesser influence. The cables between turbines would all be laid underground in trenches, alongside the new tracks and this would limit the extent of disturbance arising from the works and thus limit the effects upon the landscape fabric within the Site.
- 6.89 The keyhole felling of existing forestry and management of the Site to maintain clear areas around each turbine would also represent a notable change to the existing landscape fabric which is currently largely comprised of coniferous forestry. Further information of areas to be felled and replanted is provided in Chapter 13.
- 6.90 There would be no loss of existing features of notable value within the Site (existing watercourses, important habitat areas and cultural heritage features would be protected).
- 6.91 In addition to the operational effects above, during construction there would be short term effects on the landscape fabric as a result of the temporary construction-phase features, such as the borrow pits and construction and storage compounds. As illustrated in Figure 3.1, most of these temporary features are located within areas of retained commercial forestry or on inward facing slopes to limit landscape and visual effects. On completion of construction, all temporary fencing and the temporary construction compound (except the area to be used for energy storage) would be removed from Site and all areas disturbed by the works would be reinstated in accordance with a Construction Environmental Management Plan.

Construction/Decommissioning Stage Effects

- 6.92 Construction and decommissioning stage effects would be substantively the same.
- 6.93 They would result from a variety of ground level activities including creation of new access tracks, working and restoration of borrow pits, development of the construction compound and construction/decommissioning of the substation, as well as the activity and movement

of large construction vehicles around the Site. However, given that this is an area with extensive commercial forest activity and wind farm operations, some of this activity would be difficult to distinguish from the baseline. Whilst the scale of change may be Large at times over the Site itself, the duration would be Short term and the impact would be Not Significant.

- 6.94 The greatest effects during the construction phase would arise from the standing turbines, and large cranes used to erect these, during the final stages of construction – by which point the effects would be the same as for those during operation, as set out in the following sections.

Viewpoint Analysis

- 6.95 Viewpoint analysis has been undertaken from a total of 16 representative viewpoints. The final list of viewpoints was prepared following stakeholder consultation including SAC and NatureScot, as set out in Table 6.1.
- 6.96 The viewpoint locations are illustrated on Figures 6.1 – 6.12. The visualisations (comprising photographs of the existing view, wireframes and photomontages) are illustrated with reference to Viewpoints 1 to 16.
- 6.97 The full viewpoint analysis is contained within Technical Appendix 6.4 and the findings summarised below in Table 6.8. In each case, distances are listed in relation to the nearest turbine.
- 6.98 Please note that Technical Appendix 6.4 considers the nature and the scale of changes to character and views at each viewpoint location only. The sensitivity of receptors and wider extent of the effect (beyond the individual viewpoint location) and its duration are considered in the main body of the assessment text below as part of the consideration of the magnitude and significance of effects.

Table 6.8: Viewpoint Analysis Summary

VP	Location	Distance /Direction	Scale of Landscape Effect	Scale of Visual Effect
1	South Balloch	3.1 km SE	Large/Medium	Large
2	Hadyard Hill	3.6 km W	Small	Medium
3	Dailly	4.4 km NW	Large/Medium	Large/Medium
4	B741 near Ruglen	4.6km N	Negligible	Small/Negligible
5	Barr	4.6km SW	Medium	Medium
6	Crosshill	6.9km N	Medium/Small	Medium
7	Colonel Hunter Blair Monument, Kildoach Hill	7.6km NE	Medium/Small	Medium
8	North Threave	8.2km NW	Small	Medium/Small
9	Cornish Hill	9.1 km SE	Small	Medium/Small
10	B734 near Cairnwhin	8.9 km SW	Small	Small
11	Maybole War Memorial	9.9 km N	Small	Small
12	Shalloch on Minnoch	11.3 km SE	Small/Negligible	Small

VP	Location	Distance /Direction	Scale of Landscape Effect	Scale of Visual Effect
13	A77 north of Girvan	11.3 km W	Negligible	Negligible
14	Byne Hill	13.2 km SW	Negligible	Negligible
15	Merrick	16.8 km SE	Negligible	Negligible
16	Cairnsmore of Carsphairn	26.5 km E	Negligible	Negligible

6.99 Each of the viewpoints is a 'sample' of the potential effects, representing a wide range of receptors – including not only those actually at the viewpoint, but also those nearby, at a similar distance and/or direction. From these viewpoints it can be seen that the distribution of effects would be as follows:

6.100 Effects on character:

- Large scale effects on character would not extend beyond the immediate vicinity of the Site and within 3 km would have reduced to no greater than Large/Medium scale.
- Large/Medium scale effects would extend up to approximately 4.5 km from the turbines although in areas within the host LCT more heavily influenced by existing wind energy development, the scale of effect would diminish much more rapidly.
- Medium to Medium/Small scale effects would extend up to around 8 km from the proposed turbines where there is limited influence of other existing wind farms.
- Beyond approximately 8 km from the proposed turbines, effects on character would be no greater than Small scale and would reduce even further beyond 10 km.

6.101 Effects on views:

- The extent of Large scale visual effects, where the Proposed Development would form a major alteration to key elements, features, qualities and characteristics of the view such that the baseline will be fundamentally changed, would generally be limited to locations within approximately 4.5 km where there are very limited or no views of existing wind farms.
- Medium scale visual effects would occur up to around 8 km from the turbines in areas where there would be relatively open views of the Proposed Development.
- Beyond this, Small scale visual effects would extend up to around 11.5 km from the proposed turbines where they would generally be seen as a relatively minor feature in the wider context of existing wind farm development, reducing even further beyond this as their prominence increasingly diminishes with increasing distance.

Effects on Landscape Character

6.102 Descriptions for each of the assessed character areas/types are briefly summarised below, along with further observations from site based work.

6.103 Based on the assessments of the scale of effects at viewpoints as set out at 6.100 above, the following LCTs identified at 6.57 would experience negligible effects and do not require detailed assessment:

- **SA4b: Coastal Headlands – Brown Carrick Hill** (11.6 km north) – the closest part of this LCT is 11.6 km from the proposed turbines and effects on character at this distance would be Negligible.

SA17c: Foothills with Forest and Wind Farm (0 km – contains Site)

- 6.104 Figure 6.2 illustrates that this LCT encompasses the Site and extends across hills in the central part of the detailed study area from south of Girvan, approximately 11.8 km southwest of the Site, to the western edge of Loch Bradan, approximately 7.7 km east of the Site. The western half of the LCT is heavily influenced by existing wind energy development situated within it while to the east there is an absence of turbine development and commercial forestry is more extensive. Viewpoint 2 is located within this LCT.
- 6.105 The LCT is described in the SALWCS as a gently undulating plateau separating the Girvan and Stinchar Valleys, larger in extent to the east and narrowing towards the coast to the west, and with occasional more pronounced 'landmark' hills seen as prominent features from the adjacent valleys. Landcover is simple, dominated by commercial forestry and grass moorland, and the character type is very sparsely settled. The SALWCS notes that "*the large scale and simple landform and land cover of these uplands could relate in principle to the large turbine typologies*" but also that proximity to nearby more sensitive landscapes is a key constraint.
- 6.106 The SALWCS identifies this character type as having the following susceptibilities to turbines greater than 130 m:
- Landscape context – High;
 - Scale – Medium;
 - Landform – High-medium;
 - Landscape pattern – Medium-low;
 - Built environment – Low;
 - Perceptual qualities – Medium-low;
 - Visual amenity – High; and
 - Cumulative effects – High.
- 6.107 Technical Appendix 6.3 sets out a detailed analysis of the susceptibility of this host landscape type to the Proposed Development along with its value. Overall it is judged to be of Medium susceptibility and of Community value, considering these together, this host LCT would be of Medium/Low sensitivity to the Proposed Development.
- 6.108 Viewpoint 2 illustrates the wide extent of existing wind energy development within this LCT. The Proposed Development would introduce further turbines to the east of Hadyard Hill, extending the influence of large scale wind energy development in this direction. Although the turbines would be larger than those at Hadyard Hill they would relate well to the large scale of the underlying landform and the scale difference between existing and proposed turbines would not be particularly apparent from vantage points within the LCT.
- 6.109 Large scale effects would extend across the Site itself and to the edge of the LCT to the south where the wind turbines would be the primary characterising influence. To the east and north,

these large scale effects would extend up to around 1 km where the ZTVs indicate that undulating terrain and forestry break up and limit areas where the Proposed Development may be seen and experienced. To the north, Large scale effects on character would extend slightly further where they would have a notable characterising influence across more open areas extending to the edge of the LCT, this would however be moderated somewhat by the existing influence of Hadyard Hill turbines in this area. To the west, Large scale effects would not extend beyond the Site itself and would rapidly diminish as Hadyard Hill becomes the main characterising influence.

- 6.110 There would be Permanent, Large scale effects over a Wide extent, within the small part of the LCT described at 6.109 above, due to the introduction of the Proposed Development, which would result in a Substantial magnitude of change. Considering this with the Medium/Low sensitivity of the LCT, these effects would be Major/Moderate and Significant.
- 6.111 Across the wider LCT, the influence of the Proposed Development would notably reduce due to limited potential visibility resulting from the undulating terrain, extent of forestry and the existing influence of other wind energy development, particularly to the west. Permanent effects would generally be no greater than Medium/Small scale over an Intermediate extent of the LCT which would result in a Moderate/Slight magnitude of change. Considering this with the Medium/Low sensitivity, overall effects on the LCT would be Moderate/Minor and Not Significant.

SA13: Intimate Pastoral Valleys (0.5 km south)

- 6.112 This LCT is split into two units, as illustrated by Figure 6.2. The larger of the two is situated 0.5 km south of the Proposed Development and extends away to the southwest, following the upper Stinchar Valley to meet the A714 corridor where it splits. One arm of the LCT continues to follow the lower reaches of the River Stinchar southwest towards the coast and out of the detailed study area while the other extends southeast, following the Duisk River and A714 corridor to the edge of the 20km detailed study area. Viewpoints 1, 5 and 10 are located within this larger unit of the LCT, within the upper parts of the Stinchar Valley. The smaller unit of this LCT is located 4.1 km to the northeast, encompassing the narrow valley of the upper Water of Girvan.
- 6.113 The majority of the area encompassed by both these units also falls within the Stinchar Valley and Water of Girvan Valley LLAs, as illustrated on Figure 6.1, which identifies these areas of landscape as being of Regional value.
- 6.114 This LCT is described by the SALWCS as being strongly contained by adjacent upland landscapes, noting that valley sides are “often complex with steep craggy slopes and knolls constricting the valley floor in places - the upper valley of the Stinchar and Girvan are particularly dramatic being hemmed in by the steep slopes of adjacent uplands.” It further notes that the valley sides feature “well-defined ‘landmark’ hills on the fringes of the upper Girvan and along much of the Stinchar Valleys.” Valley bottoms vary in width and there is complex landcover pattern of small fields, riparian woodlands and occasional avenue or field trees. The LCT is relatively well settled and there is a rich built heritage.
- 6.115 The SALWCS identifies this character type as having the following susceptibilities to turbines greater than 70 m:

- Landscape context – High-medium;
- Scale – High;
- Landform – High-medium;
- Landscape pattern – High-medium;
- Built environment – High;
- Perceptual qualities – Medium;
- Visual amenity – High; and
- Cumulative effects – High.

- 6.116 Although no physical part of the Proposed Development is located within this LCT, the southern Site boundary does extend just into the larger unit of this LCT and the proposed turbines are located in close proximity, but not within it. Based on the findings of the SALWCS set out above, the overall susceptibility to the Proposed Development is judged to be High. Considering this together with the Regional value conveyed by the LLA designation, this LCT is judged to be of High/Medium sensitivity to the Proposed Development.
- 6.117 The Proposed Development would introduce a notable influence of turbines into part of the upper Stinchar Valley, within the larger of the two LCT units, to the east of Milton. Although a prominent new feature, the proposed turbines would be subordinate to, and relate well to, the underlying landform and would not notably detract from the sense of scale or drama of the steep valley sides. They would also not be seen beyond or adjacent to any of the noted 'landmark' hills identified within the SALWCS.
- 6.118 Large scale effects would extend over the closest part of this LCT, over the southern slopes of Doughty Hill extending southeast as far as the Dalquhairn Burn where undulating landform begins to provide a degree of separation from the Site. Within around 1 km south of the Dalquhairn Burn the effects would reduce to Large/Medium scale, as illustrated by viewpoint 1, due to intervening landform and forestry screening large parts of the Proposed Development and providing a sense of separation. The ZTVs also indicate that the landform of Daljedburgh Hill would entirely screen views of the Proposed Development from some of the closest parts of this LCT, directly south of the Site. The proposed turbines would be more widely visible from the open areas to the southern side of the valley, particularly the north facing slopes of Balskaig Hill, although the existing Hadyard Hill turbines are more notable from here and would serve to moderate the influence of the Proposed Development.
- 6.119 In the local part of the LCT described at 6.118 above, Permanent effects would be Large scale within a very limited area although generally would be no greater than Large/Medium scale over an Intermediate extent. This would result in a Substantial/Moderate magnitude of change within this part of the High/Medium sensitivity LCT, resulting in Major/Moderate effects which would be Significant.
- 6.120 Southwest of Milton, in this larger unit of the LCT, the scale of effects would quite rapidly reduce due to increasing distance from the Proposed Development, increasing influence of Hadyard Hill in some areas and the intricate pattern of land cover and terrain combining to reduce visibility. These effects would largely reduce to Medium scale within the vicinity of Barr, as illustrated by viewpoint 5, and more notably thereafter. The scale of effects would reduce to Small in the vicinity of Cairnwhin, as illustrated by viewpoint 10, and would rapidly become Negligible beyond this. Overall, Permanent effects on this larger unit of the LCT would tend to

be no greater than Medium scale over a Localised extent. This would result in a Moderate/Slight magnitude of change and, considering this with the High/Medium sensitivity of the LCT, this would result in Moderate effects which would be Not Significant.

- 6.121 In the smaller unit of this LCT to the northeast of the Site, the ZTVs indicate that visibility of the Proposed Development would be largely confined to hilltops and southwest facing slopes on the north eastern side of the unit. The Proposed Development would be over 6 km from these areas which are already influenced by the nearby turbines at Dersalloch, limiting the characterising influence of the proposed turbines. The Permanent effects on this unit of the LCT would be no greater than Medium/Small scale, similar to those illustrated by viewpoint 7 (just outside this LCT), over a Localised extent of the unit. This would result in a Slight magnitude of change and, considering this with the High/Medium sensitivity of the LCT, this would result in Moderate/Minor effects which would be Not Significant.

SA12: Middle Dale (1.8 km northwest)

- 6.122 As illustrated by Figure 6.2, this LCT extends along the broad middle Water of Girvan Valley to the northwest of the Site, encompassing an area extending from Kirkmichael and Straiton in the northeast to Bargany Mains in the southwest. There is relatively limited influence from existing wind energy development within this LCT although Hadyard Hill, Tralorg, Assel Valley and Dersalloch are all intermittently visible along skylines containing the valley. Viewpoints 3, 4 and 6 are located within this LCT.
- 6.123 The majority of the LCT falls within the Water of Girvan Valley LLA, as illustrated on Figure 6.1, which identifies this area of landscape as being of Regional value.
- 6.124 The LCT is described by the SALWCS as a broad valley *"covered with farmland, woodlands and parkland associated with the many designed landscapes that are a key feature of this landscape."* It is contained by foothills which vary in character, *"generally forming higher, more pronounced hills to the east and south which provide a rugged backdrop to small settlements and designed landscapes."* Lower valley sides are noted as being more complex than the valley bottom and there is a diverse and intricate land cover pattern. The LCT is described as well settled with a rich built heritage.
- 6.125 The SALWCS identifies this character type as having the following susceptibilities to turbines greater than 70 m:
- Landscape context – High-medium;
 - Scale – High;
 - Landform – High-medium;
 - Landscape pattern – High;
 - Built environment – High;
 - Perceptual qualities – Medium;
 - Visual amenity – High; and
 - Cumulative effects – High.
- 6.126 No part of the Proposed Development is located within this LCT, although it is in relatively close proximity. Based on the findings of the SALWCS set out above, the overall susceptibility

to the Proposed Development is judged to be High. Considering this together with the Regional value conveyed by the LLA designation, this LCT is judged to be of High/Medium sensitivity to the Proposed Development.

- 6.127 The ZTVs indicate that from much of the valley bottom, particularly to the southwest, and southern valley sides that the topography would limit visibility of the Proposed Development. Where visible in these areas, it would frequently be just a few blade tips seen turning above the skyline, as illustrated by viewpoint 4, which would have little influence on the character of the valley.
- 6.128 The Proposed Development would have a greater influence on localised areas of higher ground in the central valley, such as around Dailly, and on the northern valley sides where turbines would be more openly visible. In these areas, the Proposed Development would result in Large/Medium scale effects, particularly where they are seen along more complex skylines, as illustrated by viewpoint 3. However, effects would rapidly reduce within increasing distance and where the turbines may be seen along simpler, unremarkable skylines such as at viewpoint 6 where the scale of effects would be Medium/Small.
- 6.129 In the closest parts of this LCT, within approximately 4.5 km of the Proposed Development, Permanent effects on character would be up to Large/Medium scale over an Intermediate extent. This would result in a Substantial/Moderate magnitude of change within this part of the High/Medium sensitivity LCT, resulting in Major/Moderate effects which would be Significant.
- 6.130 Across the wider LCT, Permanent effects would be no greater than Medium scale over an Intermediate extent, resulting in a Moderate magnitude of change. Overall, this High/Medium sensitivity LCT would experience Moderate effects which would be Not Significant.

SA21: Rugged Uplands, Lochs and Forests (3.5 km south)

- 6.131 As illustrated by Figure 6.2, this LCT extends south and east of the upper Stinchar Valley, occupying a large part of the south eastern quadrant of the detailed study area and bordering equivalent character types within East Ayrshire and Dumfries and Galloway. Existing wind energy development does not strongly influence the character of this LCT although existing turbines are widely visible from the many open and elevated locations within it. Viewpoints 9 and 12 are located within this LCT.
- 6.132 The majority of the LCT falls within the High Carrick Hills LLA, as illustrated on Figure 6.1, which identifies this area of landscape as being of Regional value.
- 6.133 The LCT is described by the SALWCS as having “*dramatic craggy mountainous scenery*” at its core with a band of smoother but steep sided hills to the west. There is “*complex landform and land cover, including the varied pattern of lochs and mature woodland and heather moor*” and there are extensive areas of commercial forestry, particularly in peripheral areas to the west and north of the LCT. It is sparsely settled and “*a strong sense of seclusion and naturalness can be experienced, particularly within the rugged hills lying at its core.*”
- 6.134 The SALWCS identifies this character type as having the following susceptibilities to turbines greater than 70 m:

- Landscape context – Medium;
- Scale – High-medium;
- Landform – High;
- Landscape pattern – High-medium;
- Built environment – Medium-low;
- Perceptual qualities – High;
- Visual amenity – High; and
- Cumulative effects – High-medium.

6.135 The Proposed Development is outside of this LCT. Whilst this would reduce some of the noted susceptibilities that are generally internal to the LCT, such as settlement, landform and landscape pattern, those relating to perceptual qualities and the visual relationship with other LCTs would remain. Overall, susceptibility to the Proposed Development is judged to be High/Medium. Considering this together with the Regional value conveyed by the LLA designation, this LCT is judged to be of Medium sensitivity to the Proposed Development.

6.136 The Proposed Development would introduce additional turbines into views from the open elevated areas within this LCT that already feature views of extensive wind energy development. The proposed turbines would generally appear somewhat larger and closer than other existing wind farms but would not fundamentally alter the outlook from open, elevated areas within the LCT and would have a limited influence on the character of this LCT. Permanent effects on character would not be greater than Medium/Small scale in the closest parts of the LCT and generally tending more towards Small and Small/Negligible scale with increasing distance, given the distance from the Proposed Development and context of existing turbine development, as illustrated by viewpoints 9 and 12. These effects would occur over an Intermediate extent of the LCT and would result in a Moderate/Slight magnitude of change. Considering the Medium sensitivity of the LCT, this would result in Moderate effects which would be Not Significant.

SA17d: Maybole Foothills (5.7 km northwest)

6.137 This LCT encompasses the foothills that border and define the northern edge of the Girvan Valley, as illustrated by Figure 6.2, extending from the Doon Valley and border with East Ayrshire in the northeast to the coastal fringe in the southwest. Viewpoints 8 and 11 are located within this LCT.

6.138 The LCT is largely outside of any areas designated for their landscape qualities and is judged to be of Community value.

6.139 The LCT is described by the SALWCS as a band of relatively low, undulating hills with long ridges cut by valleys with a number of 'landmark' hills around the periphery and notably more complex topography in the northeast. The LCT is well settled and the predominant land use is agricultural which, combined with occasional areas of woodland, moorland and small forestry plantation results in an often rich land cover pattern.

6.140 The SALWCS identifies this character type as having the following susceptibilities to turbines greater than 130 m:

- Landscape context – High;
- Scale – High;
- Landform – High-medium;
- Landscape pattern – Medium;
- Built environment – High-medium;
- Perceptual qualities – Medium;
- Visual amenity – High; and
- Cumulative effects – High-medium.

6.141 The Proposed Development is outside of this LCT and relatively distant. Whilst this would reduce some of the noted susceptibilities that are generally internal to the LCT, such as landform and landscape pattern, those relating to perceptual qualities and the visual relationship with other LCTs would remain. Overall, susceptibility to the Proposed Development is judged to be Medium. Considering this together with the Community value conveyed by the LLA designation, this LCT is judged to be of Medium/Low sensitivity to the Proposed Development.

6.142 The ZTVs indicate that there would be limited views of the Proposed Development from the south western half of this LCT. However, some visibility would occur in the more open, elevated areas, as illustrated by viewpoint 8, where the turbines would be seen across distant hilltops, extending existing development here further inland. Although they would appear larger and more prominent than existing turbine development, they would remain a distant feature associated within separate, large scale landscape and would have little characterising influence here. There would be more widespread views from the north eastern half of the LCT where they would appear in a similar context, but more distant, although would sometimes be seen in the context of the 'landmark' Kildoon Hill.

6.143 Permanent effects on this LCT would be no greater than Small scale, and tending towards Negligible in more distant areas, over an Intermediate extent. Overall this would result in a Slight magnitude of change within this Medium/Low sensitivity LCT and effects that would be Moderate/Minor and Not Significant.

Visual Effects

6.144 Based on the assessments of the scale of effects at viewpoints as set out at 6.101 above, the following visual receptors identified at 6.65 – 6.69 would experience negligible effects and do not require detailed assessment:

- **Byne Hill** (13.2 km southwest) – as illustrated by viewpoint 14, effects would be Negligible.

Visual Receptor Groups

6.145 This assessment focuses on the effect on groups of visual receptors. The assessment of effects focuses on the visual amenity from public spaces, though views from groups of dwellings may also be noted in the descriptions. These visual receptor groups are generally assessed as being of High susceptibility to the Proposed Development; those within LLAs are judged to be of Regional value and those elsewhere Community value, resulting in a High/Medium sensitivity to the proposed Development unless stated otherwise.

- 6.146 Effects on private residential visual amenity are a separate matter and are assessed within Technical Appendix 6.7.
- 6.147 **Stinchar Valley (northeast of Barr)** (1.5 km south) – this group extends northeast of Barr, encompassing users of minor roads and dispersed settlement within the upper Stinchar Valley, primarily located within the valley bottom and extending up northern valley slopes, situated between 1.5 – 4.5 km from the Proposed Development. The ZTVs indicate that there would be fairly continuous visibility from the minor road along the valley bottom, although this would tend to be broken up and intermittently screened by roadside and riparian vegetation. Views would tend to be more open to the more distant western end of this group, closer to Barr, where the majority of turbines may be seen together although further east, in areas closer to the Proposed Development, screening provided by the landform of Daljedburgh Hill would notably reduce the number of turbines potentially visible (see Additional Wireline B). This would also apply to the dispersed settlement within this group, most of which is located in north eastern areas where views would generally be more limited.
- 6.148 Where views are more open at closer proximity, as illustrated by viewpoint 1, the scale of effects would be Large although more distantly within the group or where localised vegetation provides a degree of screening, similar to the view illustrated at viewpoint 5, these would reduce to Medium scale. Permanent effects would range from Large to Medium scale across a Wide extent of this group which would result in a Substantial/Moderate magnitude of change and Major/Moderate effects which would be Significant.
- 6.149 **Dailly** (3.0 km northwest) – this group encompasses the settlement of Dailly (4.3 km from the Proposed Development at the closest edge) and users of immediately surrounding roads, paths and public spaces within the Girvan Valley, extending up to approximately 1.5 km from the settlement. The ZTVs indicate relatively widespread visibility across this area although the extensive vegetation cover breaks this up and would mean views would be fairly intermittent.
- 6.150 Within the settlement, views would generally be limited to the south eastern edge, as illustrated by viewpoint 3, extending along Eldinton Terrace and Hazelwood Avenue and within the open space and streets with open aspects focussed around The Loaning and the cemetery south of here. There would also be some views of the Proposed Development at the eastern corner of the settlement, from the B741/Main Street. These areas would have views of the closest turbines at distances of between 4.3 – 4.5 km with many of the turbine towers and some of the hubs screened by intervening vegetation. Set back from these edges however, the landform of the settlement drops down towards the river and the combination of this and the density of buildings would screen views from the majority of public areas.
- 6.151 Outside of Dailly itself, there would be views from the B741 north of the settlement, at distances of over 5 km, and east of the settlement, at distances of around 4.3 km. There would also be views from the road extending to the south west, at 4.7 km or more, although all of these have some degree of roadside hedgerow or trees which would provide some intermittent screening of views.
- 6.152 Core Path SA43 follows the B741 north of Dailly and runs parallel to it to the east, albeit more distant, and would have similar views. Core Path SA42 extends up the valley sides to the southeast of the village and would have similar views to the village edge but at closer proximity, extending to approximately 3 km from the turbines. Rising ground on the valley side,

undulations in topography and woodland along some sections of the route would mean views are intermittent and often less open than from the more distant parts of this group. Some parts of Brunston Castle golf course would also have fairly open views (see Additional Wireline D) but again the undulating landform of the course and extensive tree planting between fairways would break these up and they would be at distances of around 5 km or more.

- 6.153 Permanent effects on this group would be Large scale over an Intermediate extent. This would result in a Substantial/Moderate magnitude of change and Major/Moderate effects which would be Significant.
- 6.154 **Barr Trails** (3.6 km south) – this group of woodland walks is located within forestry to the east of Barr. It comprises Core Paths SA52 and SA54 along with other trails that link to these; there are also a number of locally marked viewpoints. Views of the Proposed Development from this group would be largely screened by the landform of local hills and the forestry here. Some views towards the Site are possible towards the eastern end, between Larg Hill and Balloch Hill, although these are limited to brief glimpses where recent felling has opened gaps between trees. Here the turbines would be in open view across the Stinchar Valley, at a similar elevation, and some of the site tracks and keyholing around turbines is likely to be visible. More open views looking west, away from the Site, are possible from the western end of the group, particularly from Core Path SA52, where existing turbines are openly visible at Hadyard Hill and Assel Valley.
- 6.155 In areas to the east of this group where open views are possible, Permanent effects would be Large scale although these would occur over a very Limited extent. This would result in a Moderate/Slight magnitude of change and Moderate effects which would be Not Significant.
- 6.156 **Girvan Valley (northeast of Dailly)** (4.3 km northwest) – this group extends northeast from the Dailly receptor group, encompassing settlement and users of roads, paths and public spaces within the Girvan Valley as far as Kirkmichael. The ZTVs indicate that visibility would be very intermittent and often limited to blade tips only within the valley bottom, as illustrated by viewpoint 4, and southern valley sides. This area includes the B741, various minor roads, Core Paths and fairly widespread dispersed rural settlement. Further north, in areas surrounding Crosshill and Kirkmichael, visibility would be more widespread and the proposed turbines would be more openly visible although would appear relatively distant, as illustrated by viewpoint 6 (also see Additional Wireline H). However, within the two settlements themselves views would be relatively limited due to some localised topographic containment and buildings and vegetation within the villages combining to prevent outward views except from peripheral areas.
- 6.157 Permanent effects would be no greater than Medium scale over an Intermediate extent of this group, resulting in a Moderate magnitude of change and Moderate effects which would be Not Significant.
- 6.158 **Girvan Valley (southwest of Dailly)** (4.6 km northwest) – this group extends southeast from the Dailly receptor group, encompassing settlement, and users of roads, paths and public spaces within the lower Girvan Valley to the outskirts of Girvan. The ZTVs indicate very limited visibility from the southern valley sides in this group, including the B734 and minor roads between Old Dailly and Dailly. Theoretical visibility is more widespread from the northern side of the valley

along the B741 corridor, including Core Path SA45, where there are existing views of turbines at Tralorg, Assel Valley and Hadyard Hill. In reality, visibility would be less than illustrated by the ZTVs due to the extent of localised vegetation in this area.

- 6.159 Southwest of the Bargany Estate, where extensive woodland would largely screen views, occasional open views of the proposed turbines would be possible from the B741, and dispersed settlement along it, and Core Path SA45 although extensive roadside and field boundary vegetation would provide a considerable degree of screening from these areas. Where views are possible the turbines would be seen along relatively distant hilltops to the east, on the far side of the valley, and would generally be seen directly behind or extending to the side of the existing Hadyard Hill turbines. In the closest, most open areas, such as from the northern part of the Core Path or the B741 at Burnhead, these views would be similar to illustrated at viewpoint 8 although at a lower elevation and more contained by the valley. In more distant areas to the west of the group, views would be more similar to that illustrated at viewpoint 13 although the proposed turbines would tend to be less screened by intervening landform.
- 6.160 Permanent effects would be no greater than Medium/Small scale over a Limited extent of this group, resulting in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.161 **Stinchar Valley (southwest of Barr)** (5.4 km southwest) – this group encompasses the Stinchar Valley between Barr and the A714, including users of the B734 and dispersed settlement along it. The ZTVs indicate that visibility would be very intermittent within this group and often limited to blade tips only due to the narrow landform of the valley and extent of woodland within it. This also means that existing wind turbine development to the north at Hadyard Hill and Assel Valley is rarely seen from this area.
- 6.162 Where there are more open views towards the Site these are channelled along the valley where the turbines would be seen appearing over distant hilltops. Views would tend to feature only a small number of turbines or blade tips due to the screening of intervening landform, such as that illustrated at viewpoint 10. Permanent effects on this group would be no greater than Small scale over a Localised extent, resulting in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.163 **Straiton** (6.9 km northeast) – this groups encompasses the settlement, and users of roads, paths and public spaces in the surrounding areas of the upper Girvan Valley. The ZTVs indicate that potential visibility in the vicinity of Straiton would largely be limited to elevated hillsides and summits surrounding the village to the north and east. There would be virtually no visibility from the main part of the village, the B741 extending to the west or Newton Stewart Road extending to the south. There would be some limited blade tip visibility from the B741 on the northern edge of the village, increasing as it rises over hills to the east, and there would also be views from a short section of Core Path D6 in this area, albeit intermittently screened by vegetation running alongside, before it moves into forestry further north. The most notable views within this receptor group would occur from Core Path SA48 as it passes the Col. Hunter Blair monument, as illustrated by viewpoint 7. Here, the Proposed Development would be seen appearing over relatively distant hills as part of a broad panoramic view.

- 6.164 Permanent effects on this group would be no greater than Medium scale, as at the viewpoint, over a very Limited extent, resulting in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.165 **Maybole** (9.5 km north) – this group encompasses the settlement, and users of roads, paths and public spaces in the immediate vicinity and extending southeast towards Crosshill and the Girvan Valley (northeast of Dailly) receptor group. The ZTVs indicate widespread potential visibility from the periphery of the settlement, becoming more intermittent along the B-roads and minor roads (and Core Paths that follow them) radiating out from it. Viewpoint 11 illustrates the most open and elevated views from this area where effects would be Small scale. Similar views would be possible from elsewhere on the southern side of Maybole and from some of the roads south that are aligned towards the Site although these would be from a lower elevation and less open, they would also be intermittently screened by intervening vegetation and undulating topography.
- 6.166 Open views would also be possible from some routes on the northern side of Maybole due the greater elevation although these would be more distant and the Proposed Development would be less prominent. Other existing development would also be more openly visible from these areas. Permanent effects on this group would be no greater than Small scale over an Intermediate extent, resulting in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.

Key Routes

Roads and Rail

- 6.167 **Glasgow – Stranraer Railway** (4.9 km northwest) – this rail route extends southwest from Ayr to Maybole where it turns south before joining the Girvan Valley and continuing along the northern valley sides to Girvan. From here, it turns south and follows the A714 to the edge of the detailed study area and beyond. Users of this route would have a Medium susceptibility to changes in views, which are considered to be of Community value, they are judged to be of Medium sensitivity to the Proposed Development.
- 6.168 In the northern part of the study area, from Ayr to south of Maybole, the line runs through extensive sections of cutting and there is extensive lineside vegetation which would make views of the Proposed Development unlikely. The most notable views would occur as the route passes along the Girvan Valley and would be similar to those previously described for the visual receptor groups in this area. As with other visual receptors here, views would be very intermittent due to the extent of vegetation adjacent to the route and more broadly within the valley. Passing through Girvan and south along the A714 corridor the ZTV indicates virtually no potential visibility.
- 6.169 Permanent effects on the route would be no greater than Medium scale and would occur over a very Limited extent, resulting in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.170 **A77** (9.6 km northwest) – this main road route extends southwest from Ayr, passing through Maybole, to Turnberry where it turns south and follows the coast to Girvan and beyond, out of the study area. Users of this route would have a Medium susceptibility to changes in views,

which are considered to be of Community value, they are judged to be of Medium sensitivity to the Proposed Development.

- 6.171 The ZTV indicates the only notable areas of potential visibility would be to the northeast of Maybole and a short section of the route just north of Girvan. To the northwest of Maybole, the Proposed Development would be seen as a very distant feature extending along distant hilltops and views would be very intermittent due to the extent of intervening vegetation. North of the Girvan, the Proposed Development would be seen behind and to the side of Hadyard Hill, as illustrated by viewpoint 13. Permanent effects on the route would be Negligible scale over a very Limited extent, resulting in a Negligible magnitude of change and Minor/Negligible effects which would be Not Significant.

Recreational Routes

- 6.172 **NCN Route 7** (0.1 km east) – this is a long distance cycle route that extends from Sunderland to Inverness. Within the detailed study area it follows a north-south route, largely following minor roads, from Ayr to Glentworth and passing along the eastern edge of the Site. Recreational users of this route would have a High/Medium susceptibility to changes in views, which, given it passes through several LLAs within the study area, are considered to be of Regional value; they are judged to be of High/Medium sensitivity to the Proposed Development.
- 6.173 The most notable effects on the route would occur as it passes over Doughty Hill on the eastern side of the Site where open views of turbines at close proximity would occur over an approximately 3 km section of the route (see Additional Wireline A). Permanent effects on this section of the route would be Large scale over a Wide extent (of this section), resulting in a Substantial magnitude of change and Major effects which would be Significant.
- 6.174 North of the Site, the route passes into forestry then drops down into the Girvan Valley where the ZTVs indicate there would be very limited potential visibility until it reaches the B741 just south of Crosshill. Between here and Maybole, visibility would be more widespread but intermittently screened by roadside vegetation, other intervening woodland and vegetation and undulating terrain. Views this section of the route would be similar to those described for the Girvan Valley (northeast of Dailly) and Maybole receptor groups (also see viewpoints 6 and 11), primarily affecting southbound users. Permanent effects on this section of the route would generally be no greater than Medium/Small scale, although this may tend towards Medium in the closest section, and would occur over an Intermediate extent. This would result in a Moderate magnitude of change and Moderate effects which would be Not Significant.
- 6.175 North of Maybole, the route passes up over the Brown Carrick Hills where there would be intermittent views of the Proposed Development seen as a very distant feature on a distant skyline and effects here would be Negligible.
- 6.176 South of the Site the route drops into the upper Stinchar Valley, passing through South Balloch (see viewpoint 1) before rising up into the uplands of the Carrick Forest. The only area of visibility beyond the Stinchar Valley would be a roughly 2 km section of the route along Nick of the Balloch, northeast of Glengap Hill, where there would be open views of the Proposed Development from an elevated location. These would be similar to those described for the Barr Trails receptor group although slightly more distant and would primarily affect

northbound users. Permanent effects on this section of the route, south of the Site, would be Large/Medium scale over a Limited extent. This would result in a Moderate magnitude of change and Moderate effects which would be Not Significant.

Specific Viewpoints

6.177 No specific viewpoints have been identified as requiring detailed assessment.

Summary of Landscape and Visual Effects

6.178 Effects on the receptors assessed are summarised in the table below. Significant effects are underlined.

Table 6.9: Summary of Landscape and Visual Effects

Receptor	Description	Sensitivity	Magnitude	Significance	Beneficial / Neutral / Adverse
Landscape Character					
SA17c: Foothills with Forest and Wind Farm	Within 1-1.5 km of the turbines	Medium/Low	<u>Substantial</u>	<u>Major/Moderate (Significant)</u>	<u>Adverse</u>
	Elsewhere within the LCT		Moderate/Slight	Moderate/Minor (Not Significant)	Adverse
SA13: Intimate Pastoral Valleys	Within 3.5 km of the turbines, east of Milton	High/Medium	<u>Substantial/Moderate</u>	<u>Major/Moderate (Significant)</u>	<u>Adverse</u>
	Elsewhere within the larger southern unit of the LCT		Moderate/Slight	Moderate (Not Significant)	Adverse
	Smaller unit of the LCT, northwest of the Site		Slight	Moderate/Minor (Not Significant)	Adverse
SA12: Middle Dale	Within 4.5 km of the turbines	High/Medium	<u>Substantial/Moderate</u>	<u>Major/Moderate (Significant)</u>	<u>Adverse</u>
	Elsewhere within the LCT		Moderate	Moderate (Not Significant)	Adverse
SA21: Rugged Uplands, Lochs and Forests	Overall effects on the LCT	Medium	Moderate/Slight	Moderate (Not Significant)	Adverse
SA17d: Maybole Foothills	Overall effects on the LCT	Medium/Low	Slight	Moderate/Minor (Not Significant)	Adverse
Visual Receptor Groups					
Stincharr Valley (northeast of Barr)	Overall effects on the group	High/Medium	<u>Substantial/Moderate</u>	<u>Major/Moderate (Significant)</u>	<u>Adverse</u>

Receptor	Description	Sensitivity	Magnitude	Significance	Beneficial / Neutral / Adverse
Dailly	Overall effects on the group	High/Medium	<u>Substantial/Moderate</u>	<u>Major/Moderate (Significant)</u>	<u>Adverse</u>
Barr Trails	Overall effects on the group	High/Medium	Moderate/Slight	Moderate (Not Significant)	Adverse
Girvan Valley (northeast of Dailly)	Overall effects on the group	High/Medium	Moderate	Moderate (Not Significant)	Adverse
Girvan Valley (southwest of Dailly)	Overall effects on the group	High/Medium	Slight	Moderate/Minor (Not Significant)	Adverse
Stinchar Valley (southwest of Barr)	Overall effects on the group	High/Medium	Slight	Moderate/Minor (Not Significant)	Adverse
Straiton	Overall effects on the group	High/Medium	Slight	Moderate/Minor (Not Significant)	Adverse
Maybole	Overall effects on the group	High/Medium	Slight	Moderate/Minor (Not Significant)	Adverse
Key Routes					
Glasgow – Stranraer Railway	Overall effects on the route	Medium	Slight	Moderate/Minor (Not Significant)	Adverse
A77	Overall effects on the route	Medium	Negligible	Minor/Negligible (Not Significant)	Adverse
NCN Route 7	Passing along the eastern boundary of the Site	High/Medium	<u>Substantial</u>	<u>Major (Significant)</u>	<u>Adverse</u>
	Between Maybole and the B741, south of Crosshill		Moderate	Moderate (Not Significant)	Adverse
	North of Maybole		Negligible	Negligible (Not Significant)	Adverse
	South of the Site		Moderate	Moderate (Not Significant)	Adverse

Designated Areas

Local Landscape Areas

- 6.179 Based on the assessments of the scale of effects at viewpoints as set out at 6.100 – 6.101 above, some of the LLAs identified at 6.73 would experience negligible effects and do not require detailed assessment:

- **Brown Carrick Hills & Coast LLA** (11.6 km north) – effects on both character and views would be Negligible at this distance from the Proposed Development and there would be no notable impact on the identified special qualities of this LLA.

6.180 The 2018 South Ayrshire Local Landscape Designations Review identifies the boundaries of the various LLAs (illustrated on Figure 6.1) sets out the reasons for designation and provides a narrative description of “*character and special qualities*”. The LLAs largely correspond to the boundaries of the underlying LCTs and the narrative descriptions primarily focus on character, with occasional reference to specific recreational or visual interests. Effects on the underlying character and views are assessed in the preceding sections, taking account of the Regional value conveyed by the LLA designation, and are not repeated here. This section focusses on the reasons for designation, drawing on preceding sections as necessary.

Stinchar Valley LLA (0.3 km south)

6.181 This LLA corresponds with the larger unit of the SA13: Intimate Pastoral Valleys LCT. It widens beyond the LCT in the upper Stinchar Valley, encompassing some of the hilltops flanking the valley sides. On the southern side this includes Balloch Hill and the forest containing the Barr Trails, extending into the SA21: Rugged Uplands, Lochs & Forest LCT, while on the northern side it includes Milton Hill and Daljedburgh Hill, up to the southern boundary of the Site. To the southwest, the LLA is more constrained than the LCT in parts, narrowing along the Duisk Valley, but widening out near the coast to also encompass one unit of the SA14: Upland Glen LCT and part of the SA22: Glenapp Coastal Farmland & the Policies LCT. Viewpoints 1, 5 and 10 are located within this LLA.

6.182 The 2018 Designations Review identifies the following reasons for designation:

Reasons for designation

“The Sinchar [sic] Valley has a hidden, secretive quality being narrow, incised and undisturbed by major communications. Lush valley floor pastures contrast with more complex wooded slopes and a string of well-defined hills located on the northern edges of the valley, including the singular peak of Knockdolian, add to the rich scenic composition and harmony of this landscape. Both the Stinchar and the lower Duisk valleys are enhanced by many cultural heritage features including some notable 19th/early 20th century grand houses and historically interesting villages. Well-used walking routes are present throughout the valley and within Changue Forest”.

6.183 As set out at 6.112 – 6.121, localised Major/Moderate effects on character would occur in the valley within approximately 4 km of the Proposed Development and would be Significant. Outside of this area effects on character would be no greater than Moderate and Not Significant. Notable visual effects in the LLA would be confined to open areas northeast of Barr, in the valley itself these would be Major/Moderate and Significant and would include views of turbines seen above Daljedburgh Hill. Very limited views of the Proposed Development would also be possible from parts of the Changue Forest (Barr Trails), as set out at 6.154 – 6.155, and would result in Moderate effects that would be Not Significant. To the southwest of Barr (see 6.161 – 6.162), visual effects reduce notably and would be Not Significant. In the south western part of the LLA, beyond the A714 corridor/Duisk Valley, both landscape and visual effects would be Negligible.

6.184 The Proposed Development would introduce views of turbines into a limited extent of the LLA. Although prominent in this area they would not be an entirely new or uncharacteristic feature, with existing turbines at Hadyard Hill and Assel Valley/Tralorg also visible nearby and at various locations throughout the LLA (see Additional Wireline F) – turbines at Mark Hill and Arecleoch are also intermittently visible in the far southwestern parts of the LLA, as illustrated by Figure 6.8. In the closest parts of the LLA, the turbines would be seen on or above the well defined landform of Daljedburgh Hill (see viewpoint 1 and Additional Wireline B) although this is not singled out or noted as being of particular importance by either the 2018 Designations Review or the SALWCS. There would be no notable influence on any grand houses and effects on the nearby village of Barr would be Negligible (see 6.66). In summary, there would be significant effects on both character and views within the LLA to the east of Barr, but these localised effects arising from the Proposed Development would not fundamentally undermine the reasons for designation.

Water of Girvan Valley LLA (0.4 km northwest)

6.185 This LLA corresponds with the SA12: Middle Dale LCT, incorporating the north western half of the smaller unit of SA13: Intimate Pastoral Valleys at the far eastern end. Its northern and southern boundaries also extend slightly into the SA17c: Foothills with Forest and Wind Farm and SA17d: Maybole Foothills LCTs. Viewpoints 2, 3, 4, 6 and 7 are located within this LLA.

6.186 The 2018 Designations Review identifies the following reasons for designation:

Reasons for designation

“This LLA is an attractive settled valley, with an outstanding assemblage of historic houses, castles, designed grounds and policy landscapes. Moorland hills with distinctive profiles provide the backdrop to views across and along the valley. Prominent and accessible monuments (Kildoon, and the Hunter-Blair monument near Straiton) provide panoramic elevated views across the area. The Water of Girvan Valley is popular for walking, with local routes promoted and waymarked around Straiton and Daily [sic]”.

6.187 As set out at 6.104 – 6.111 and 6.122 – 6.130, the Proposed Development would result in Major/Moderate and Significant effects on landscape character within parts of this LLA within approximately 4.5 km of the Proposed Development. Outside of this area, effects on character would be no greater than Moderate and Not Significant. The Proposed Development would also result in Major/Moderate and Significant effects on views for people in the vicinity of Daily, within 5 – 6 km of the Site (see 6.149 – 6.153). Over the wider LLA however, visual effects would be Moderate or Moderate/Minor and Not Significant (see 6.156 – 6.160 and 6.163 – 6.166). It would be a notable new feature in the noted panoramic views at Kildoon Hill and the Colonel Hunter Blair monument (see viewpoint 7) but would occupy a relatively small part of the wide panoramic views and, at Kildoon Hill, would be seen immediately adjacent to existing turbines at Hadyard Hill. It would also not directly impinge on any of the more notable foci of these views such as Ailsa Craig, Arran or rugged hills in the Merrick WLA.

6.188 The Proposed Development would be seen intermittently across a fairly large part of this LLA although views of existing wind energy development to the south are already characteristic of the area and the Proposed Development would not generally add any entirely new areas

of visibility, as illustrated by Figure 6.8. The ZTVs indicate fairly limited visibility from within designated historic and designed landscapes within the LLA and beyond 5 – 6 km from the Site, effects on recreational interests would be Not Significant. In summary, the Proposed Development would be seen as a prominent new feature from a notable part of the LLA and would result in some significant effects on both character and views within the LLA in the vicinity of Dailly, but these localised effects arising from the Proposed Development would not fundamentally undermine the reasons for designation.

High Carrick Hills LLA (4.6 km southeast)

- 6.189 This LLA corresponds with the SA21: Rugged Uplands, Lochs & Forest LCT, encompassing some very limited sections of the SA13: Intimate Pastoral Valleys and SA17c: Foothills with Forest and Wind Farm at their eastern extremities. Viewpoints 9 and 12 are located within this LLA.
- 6.190 The 2018 Designations Review identifies the following reasons for designation:

Reasons for designation

"The High Carrick Hills are important in that they comprise a little modified upland area comprising the highest and most rugged hills in South Ayrshire. This landscape is unusual in having a Highland character in a Lowland context due to the craggy landform, the presence of peaty lochs and the qualities of wildness that can be experienced in the area. It borders the Galloway Hills Regional Scenic Area and a locally important Sensitive Landscape Character Area in East Ayrshire. Part of this area is covered by the Merrick Wild Land Area and it also lies wholly within the Galloway Dark Sky Park which validates its remote character."

- 6.191 As set out at 6.131 – 6.136, the Proposed Development would result in Moderate effects on the underlying LCT which would be Not Significant. Given the remote nature of the area there are few visual receptors and the ZTVs illustrate very limited potential visibility within the LLA. The only visual receptor within the LLA likely to experience notable effects would be NCN Route 7 where there would be some quite open and relatively close proximity views of the Proposed Development over the short section along Nick of the Balloch. However, as set out at 6.176, overall effects on users of this route within the LLA would be Moderate and Not Significant. No other day-time visual receptor groups have been identified within the LLA which would have the potential for significant effects, including the Carrick Forest Drive or forest trails within lower lying areas, and effects on night-time receptors within the DSP, as set out at 6.311 – 6.316, would be Minor/Negligible and Not Significant. The LLA description notes that it is partly within the Merrick WLA, wildness qualities of which are considered in detail in Technical Appendix 6.5 (also see 6.193 below).
- 6.192 There would be limited potential visibility of the Proposed Development within this LLA, largely confined to open hilltops where views of existing wind energy development are widespread and characteristic, and the short section of road along Nick of the Balloch. The Proposed Development would be seen as a relatively prominent new feature from limited parts of the LLA, generally where other existing wind farms are also visible. There would be no significant landscape or visual effects within the LLA and the Proposed Development would not be entirely uncharacteristic and it would not fundamentally undermine any of the reasons for designation.

Wild Land

- 6.193 A Wild Land Assessment is provided in Technical Appendix 6.5 for the Merrick WLA. It identifies that effects on the Merrick WLA would be of Moderate/Minor and Adverse due to the slightly increased presence of manmade structures seen from elevated locations within the north western part of the WLA. There would be no 'material change in the experience of any of the wild land qualities' and these effects would be Not Significant.

Cumulative Effects

Introduction

- 6.194 In line with GLVIA3 (paragraph 7.5) and SNH guidance on Assessing the Cumulative Impact of Onshore Wind Energy Developments (paragraph 33), the assessment of cumulative effects should focus on whether there are any likely significant cumulative impacts which are reasonably foreseeable and which are likely to influence the decision making of the Proposed Development, rather than an assessment of every potential cumulative effect. As recommended by the SNH cumulative guidance, this assessment considers the 'additional cumulative change which would be brought about by the proposed development' (paragraph 70), assuming other schemes in scenario are already present.
- 6.195 In this section, the Proposed Development is referred to as Craiginmoddie in order to prevent confusion and differentiate it from other proposed developments that are being considered.

Assessment Scenarios

- 6.196 The assessment of cumulative effects focusses on receptors within the 20 km detailed study area, as for the main LVIA, where there is the greatest potential for significant cumulative effects to occur. NatureScot have requested that selected wind farms beyond this study area, as set out in Table 6.1, are also included within the assessment and illustrated on relevant visualisations in order to illustrate the potential cumulative effects of aviation lighting. Table 6.10 below sets out those schemes considered within the cumulative assessment, as illustrated on Figure 6.7.

Table 6.10: Cumulative Wind Farm Developments

Development	Status	Distance/ Direction	Number of Turbines	Tip Height
Operational and Consented				
Hadyard Hill	Operational	0.7 km W	52	100 m (43) +110 m (9)
Tralorg	Operational	8.3 km W	8	100m
Dersalloch	Operational	8.3 km NE	23	115 m (7) + 125 m (16)
North Threave	Operational	8.7 km NW	1	53.7 m
Assel Valley	Operational	9.4 km W	10	110 m
Downhill Farm	Operational	10.6 km NW	1	77 m
Girvan Hospital	Operational	11.4 km W	1	56 m

Development	Status	Distance/ Direction	Number of Turbines	Tip Height
Maclachriestone Farm	Operational	11.9 km SW	1	54 m
Mark Hill	Operational	12.4 km SW	28	110 m
Kilgallioch	Operational	22.9 km SE	99	146.5 m
Kirk Hill	Consented	7.3 km NW	8	115.5 m
Knockshinnoch	Consented	17.2 km NE	2	126.5 m
Benbrack (2019)	Consented	20.2 km E	18	132 m (1) + 135 m (1) + 149.9 m (16)
South Kyle	Consented	20.6 km E	50	149.5 m
Overhill	Consented	21.8 km NE	10	149.9 m
Chirmorie	Consented	22.7 km SE	23	146.5 m
Planning				
Clauchrie	Planning	7.9 km S	18	200 m
North Kyle	Planning	18.8 km NE	54	149.9 m
Arcleloch Extension	Planning	19.8 km SE	13	200 m
Overhill (2020)	Planning	21.8 km NE	10	180 m
Stranoch 2	Planning	27.6 km SE	20	140 m (2) + 149.9 m (8) + 170 m (10)
Kilgallioch Extension	Planning	26.5 km S	11	180 m
Scoping				
Carrick	Scoping	0.6 km E	17	200 m
Knockodhar	Scoping	8.6 km SE	32	200 m
Polquhairn (2020)	Scoping	20.1 km NE	9	125 m

- 6.197 It is important to differentiate between the assessment of cumulative effects arising from Craiginmoddie with projects that are operational or under construction and have been included as part of the baseline; and those which are consented and can be considered as part of a scenario with some certainty; and those that are proposed and about which there can be little certainty.
- 6.198 The first scenario of the cumulative assessment includes all operational and consented wind farms, considered to be the future baseline. The second scenario considers those schemes currently in planning or subject to undetermined appeals. Of the schemes in planning identified in Table 6.10, the majority are wholly or largely outside of the 20 km detailed study area. The only one that is of sufficient proximity and scale to result in potentially notable cumulative effects is Clauchrie.
- 6.199 Schemes in scoping are noted but are not usually included within assessment scenarios given the high degree of uncertainty surrounding them at this stage. There is no guarantee that they will come forward as planning submissions and the nature of the proposed schemes may be subject to change. In this case, consultees have requested that both Carrick and

Knockodhar are considered in respect of the potential cumulative impacts of aviation lighting (see Table 6.1) on night-time receptors and Wild Land and these have been included in the relevant parts of this chapter (see 6.193 and Technical Appendix 6.5, and 6.269 – 6.316). Carrick has also been included as the final scenario of the cumulative assessment due to being located immediately adjacent to the Site.

6.200 In summary, the following scenarios are considered within the assessment:

- Scenario 1 (current baseline): Craiginmoddie and operational wind farms – set out within the main assessment in the preceding sections of this chapter;
- Scenario 2 (future baseline): Craiginmoddie and operational and consented wind farms;
- Scenario 3: Craiginmoddie + Clauchrie and operational and consented wind farms; and
- Scenario 4: Craiginmoddie + Carrick and operational and consented wind farms.

Cumulative Effects on Landscape Character

SA17c: Foothills with Forest and Wind Farm

- 6.201 **Scenario 2** – no consented scheme are located within this LCT or in particularly close proximity, the closest is Kirk Hill which is located around 4.4 km to the northwest. Given the current influence of wind farms within the LCT and distance from Kirk Hill, cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.202 **Scenario 3** – Clauchrie is located over 5 km from this LCT at it's closest point. As above, given the current influence of wind farms within the LCT and distance from Clauchie, cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.203 **Scenario 4** – as illustrated by Figure 6.10, Carrick would be widely visible across the Criaginmoddie site and those areas to the north, south and east and would provide a strong characterising influence in this area. Assuming the prior presence of Carrick then the addition of Craiginmoddie would have a notably reduced influence. Medium scale effects would occur within the Site itself, rapidly reducing to Small or less beyond this. This would result in Permanent effects over a Wide extent of the site that would be Moderate magnitude and, considering the Medium/Low sensitivity, these would be Moderate and Not significant. In the wider LCT, the additional Permanent effects of Craiginmoddie would generally be no greater than Small scale over a Limited extent. This would result in a Slight/Negligible magnitude of change and Minor effects that would be Not Significant.

SA13: Intimate Pastoral Valleys

- 6.204 **Scenario 2** – the closest consented scheme to this LCT is Chirmorie, approximately 3 km southwest of the large southern unit. This scheme is over 20 km away from Craiginmoddie and there would be no potential for cumulative effects on the LCT. Kirk Hill would be visible from some limited parts of the smaller north eastern unit of this LCT but at over 10 km away it would have no characterising influence. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.205 **Scenario 3** – Clauchrie is outside of this LCT but would be quite widely visible within the large southern unit, as illustrated by Figure 6.9. The main areas where Clauchrie would have a

notable characterising influence would be to the southwest of Barr. Clauchrie would also be visible in areas closer to Craiginmoddie, from Barr extending northeast across to Milton Hill. Areas in the immediate vicinity of Barr would be a similar distance from both schemes although Craiginmoddie would be more openly visible, as illustrated by viewpoint 5, and would have a greater characterising influence. This would increasingly be the case moving to the northeast as proximity to Craiginmoddie increases. Assuming the prior presence of Clauchrie, the addition of Craiginmoddie would not result in any effects on this LCT that would be notably different to those of Craiginmoddie alone.

- 6.206 **Scenario 4** – as illustrated by Figure 6.10, Craiginmoddie and Carrick would have very similar patterns of visibility in the upper Stinchar Valley, within the larger southern unit of this LCT. Carrick would be more widely visible in the area immediately south of Daljedburgh Hill while Craiginmoddie would be more so in the area directly east of Milton. Assuming the prior presence of Carrick, the addition of Craiginmoddie would result in a westward extension of large scale turbines along the northern side of this LCT unit, increasing the prevalence of turbines on hills surrounding the upper Stinchar Valley. There would be some localised differences in the nature of effects compared to those of Craiginmoddie alone although the overall magnitude and significance of these would not be notably different.
- 6.207 Carrick sits between Craiginmoddie and the smaller unit of this LCT to the northeast and, as illustrated by Figure 6.10, would be widely visible in the valley bottom and western valley sides between Straiton and Tairlaw where Craiginmoddie would have little influence. Both would be visible from elevated areas on the eastern side of the valley although Carrick would be much closer and more prominent and Craiginmoddie would appear to extend away behind it. Assuming the prior presence of Carrick, Permanent effects arising from the addition of Craiginmoddie would be Small/Negligible scale over a Localised extent of the unit. This would result in a Negligible magnitude of change and, considering the High/Medium sensitivity of the LCT, would result in Minor/Negligible effects which would be Not Significant.

SA12: Middle Dale

- 6.208 **Scenario 2** – the only consented scheme close enough to this LCT to potentially have any influence on character is Kirk Hill. It will be relatively well screened by topography from much of the LCT although will be partially visible from areas in the vicinity of Dailly, in the valley bottom and particularly the elevated valley sides to the southeast of the village. Valley bottom areas would be a similar distance from both schemes although Craiginmoddie would be more openly visible and would have a greater characterising influence. Assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would not result in any effects on this LCT that would be notably different to those of Craiginmoddie alone.
- 6.209 **Scenario 3** – Clauchrie is located over 10 km from this LCT and, as illustrated by Figure 6.9, would largely not be visible within it. It would have no influence on the character of this LCT and cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.210 **Scenario 4** – in parts of this LCT within 5 km of the two schemes, Carrick would either not be visible or seen directly beyond Craiginmoddie, as illustrated by viewpoint 3, which would be the primary cause of character effects. In more distant areas the two schemes would have a very similar pattern of visibility, as illustrated by Figure 6.10, would generally be seen side by

side and would have very similar effects to one another. Craiginmoddie would appear to extend Carrick along the skyline to the west, as illustrated by viewpoint 6, although in these more distant areas the characterising influence of the turbines would be markedly reduced. Assuming the prior presence of Carrick, the scale of change resulting from the introduction of Craiginmoddie would be slightly reduced, given the existing influence of Carrick, but overall effects are unlikely to be markedly different from those of Craiginmoddie alone.

SA21: Rugged Uplands, Lochs and Forests

- 6.211 **Scenario 2** – the closest consented scheme to this LCT is Benbrack which is over 8 km to the east and over 20 km from Craiginmoddie. There would be no potential for cumulative effects with this or any of the more distant consented schemes and cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.212 **Scenario 3** – Figure 6.9 illustrates relatively little combined visibility of Clauchrie and Craiginmoddie within this LCT. These areas would be confined to open hilltops immediately north of Clauchrie, where Clauchrie would be the primary characterising influence, and the more elevated hilltops within the Merrick WLA to the east. Clauchrie would be in notably closer proximity to this LCT than Craiginmoddie, it would be much more widely visible, more prominent (see viewpoint 12) and generally be the primary cause of effects in this scenario. Assuming the prior presence of Clauchrie, the addition of Craiginmoddie would result in Permanent effects of Negligible scale over an Intermediate extent. This would lead to a Negligible magnitude of change and, considering the Medium sensitivity of the LCT, would result in Minor/Negligible effects which would be Not Significant.
- 6.213 **Scenario 4** – Figure 6.10 illustrates that Carrick and Craiginmoddie would have similar patterns of visibility across this LCT although views of Carrick would be more widespread due to its closer proximity. Craiginmoddie would appear to extend Carrick away from this LCT, as illustrated by viewpoints 9 and 12, and would not have any notable characterising influence beyond that of Carrick. Assuming the prior presence of Carrick, the addition of Craiginmoddie would result in Permanent effects of Negligible scale over an Intermediate extent. This would lead to a Negligible magnitude of change and, considering the Medium sensitivity of the LCT, would result in Minor/Negligible effects which would be Not Significant.

SA17d: Maybole Foothills

- 6.214 **Scenario 2** – Kirk Hill will be situated in the south western part of this LCT, the closest area to Craiginmoddie, and will exert a notable characterising influence here, reducing the scale of change that would arise from the addition of Craiginmoddie. This characterising influence will extend northeast towards Maybole although given the relatively small size of the turbines this will decrease fairly quickly. Assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would result no greater than Small scale Permanent effects, although more widely these would be Small/Negligible to Negligible, over a Localised extent of the LCT. This would result in a Slight/Negligible magnitude of change and, considering the Medium/Low sensitivity of the LCT, would result in Minor/Negligible effects which would be Not Significant.
- 6.215 **Scenario 3** – Clauchrie is over 14 km from this LCT, where visible it would be a distant feature seen directly beyond existing wind turbines and would have no characterising influence. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.216 **Scenario 4** – Carrick is at a similar distance and direction as Craiginmoddie from this LCT. As illustrated by the Figure 6.10 it would have a very similar pattern of visibility and, as illustrated by viewpoint 11, would appear very similar. Assuming the prior presence of Carrick, the addition of Craiginmoddie would appear to extend an existing group of turbines of the same size and would be less of a notable change on the distant skyline than Craiginmoddie alone. Permanent effects would be Negligible scale over an Intermediate extent of the LCT. These would result in a Negligible magnitude of change and Minor/Negligible effects which would be Not Significant.

Cumulative Visual Effects

6.217 This assessment considers two types of cumulative visual effect:

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

Visual Receptor Groups

Stinchar Valley (northeast of Barr)

6.218 **Scenario 2** – no consented schemes are visible from this area and cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.219 **Scenario 3** – Figure 6.9 illustrates that there would be very limited views of Clauchrie in this area, largely confined to open areas of agricultural land, away from the minor road in the valley bottom and most of the dispersed settlement here. There would be some combined views from dispersed settlement in vicinity of Milton and the minor road north of here. Craiginmoddie would be by far the closest and most openly visible of the two schemes and the primary cause of visual effects. Assuming the prior presence of Clauchrie, cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.220 **Scenario 4** – as illustrated by Figure 6.10, there would be some combined views of Carrick and Craiginmoddie from the valley bottom and dispersed settlement around Milton. However, as illustrated by viewpoints 1 and 5, Carrick would only be partially visible within intervening topography providing notable screening of the majority of the turbines. Craiginmoddie would be primary cause of effects in this area and, assuming the prior presence of Carrick, cumulative effects in this scenario would not be notably different to those of Craiginmoddie alone.

Dailly

6.221 **Scenario 2** – the only consented scheme that would be visible from this group is Kirk Hill. It will be seen in some views to the north, looking in the opposite direction to Craiginmoddie, and will generally be quite well screened by intervening topography with only a small number of turbines appearing over the skyline. These views are most likely from roads and paths outside

of the village itself where there would be combined and sequential views with Craiginmoddie. Within the settlement itself, screening by vegetation and buildings is likely prevent any notable views of Kirk Hill. In this scenario, Craiginmoddie would always be seen as the most openly visible and larger of the schemes and would generally also be the closest. Craiginmoddie would be the primary cause of visual effects on this group and, assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.

6.222 **Scenario 3** – as illustrated by Figure 6.9, there would be no visibility of Clauchrie in this area. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.223 **Scenario 4** – Figure 6.10 illustrates that Craiginmoddie would be more widely visible in this group than Carrick and that there would be no areas with views of Carrick but not Craiginmoddie. Where there are combined views, Carrick would be seen directly behind Craiginmoddie, as illustrated by viewpoint 3. Craiginmoddie would be the primary cause of visual effects on this group and, assuming the prior presence of Carrick, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.

Barr Trails

6.224 **Scenario 2** – there will not be any notable views of consented schemes from this receptor group. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.225 **Scenario 3** – Clauchrie is located around 2.3 km south of this receptor group and would be visible in open views in this direction, generally affecting users on the southern and western sections of routes within the group. There would be no combined views with Craiginmoddie but there would be sequential views for those users following circular routes. Assuming the prior presence of Clauchrie, the addition of Craiginmoddie would result in an increased frequency of turbines seen at close proximity from different sections of these routes, primarily affecting users on northern and eastern sections that would be unaffected by Clauchrie. Assuming the prior presence of Clauchrie, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.

6.226 **Scenario 4** – Carrick and Craiginmoddie would generally be seen in combination from the same limited sections of routes within the north eastern part of this group. They would be seen at a similar distance with Craiginmoddie appearing as a westward extension of Carrick in views already influenced by large turbines at close proximity. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would not result in such a fundamental change to views. Permanent effects in this scenario would be Large/Medium scale over a Limited extent of the group. This would result in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.

Girvan Valley (northeast of Dailly)

6.227 **Scenario 2** – the only consented scheme likely to be notably visible from this area is Kirk Hill. Similar to Craiginmoddie, there will be fairly widespread intermittent views of Kirk Hill which

would tend to be limited by intervening topography to the southwest but more open to the northeast. There would be some combined and sequential views of the two schemes although they would tend to both be relatively distant features or largely screened by intervening topography, as illustrated by viewpoints 4 and 6. Craiginmoddie would tend to be the more openly visible of the two schemes and the larger cause of visual effects on this group. Assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.

- 6.228 **Scenario 3** – as illustrated by Figure 6.9, Clauchrie would not generally be visible from this area. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.229 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility within this group would be very similar for Craiginmoddie and Carrick, with Craiginmoddie slightly more widely visible towards the southwest. Views of the two schemes would be combined and they would generally be seen side by side. Craiginmoddie would appear to extend Carrick along the skyline to the west, as illustrated by viewpoint 6 (also see Additional Wireline H), and slightly less screened by intervening landform. Assuming the prior presence of Carrick, the scale of change resulting from the introduction of Craiginmoddie would be slightly reduced, given the existing presence of Carrick in views from this area, but overall effects are unlikely to be markedly different from those of Craiginmoddie alone.

Girvan Valley (southwest of Dailly)

- 6.230 **Scenario 2** – the only consented scheme likely to be notably visible from this area is Kirk Hill. There are likely to be combined views from more open, elevated sections of Core Path SA45 and possibly some sequential views from the B741 although these would be very limited given the extent of woodland cover and roadside vegetation within this area. Assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.
- 6.231 **Scenario 3** – as illustrated by Figure 6.9, Clauchrie would not generally be visible from this area. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.
- 6.232 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility within this group would be very similar for Craiginmoddie and Carrick, with Craiginmoddie slightly more widely visible – particularly towards the southwest. Craiginmoddie would be seen directly in front of Carrick in combined views from this area and would be the greater contributor to visual effects. However, if Carrick were already present then the introduction of Craiginmoddie would be less of a notable change to the distant skyline which would already feature a number of the Carrick turbines. Assuming the prior presence of Carrick, the Permanent effects arising from the addition of Craiginmoddie would be no greater than Small scale over a Limited extent of the group. This would result in a Slight/Negligible magnitude of change and Minor effects which would be Not Significant.

Stinchar Valley (southwest of Barr)

- 6.233 **Scenario 2** – no consented developments are likely to be notably visible from this area. Cumulative effects in this scenario would be no different to those of Craiginmoddie alone.

6.234 **Scenario 3** – Figure 6.9 illustrates there would be few areas of combined visibility with Clauchrie in this area although sequential views would be possible. The two schemes would be seen in quite different contexts with views of Craiginmoddie channelled along the valley and Clauchrie seen appearing over hills that contain it. Neither scheme would be openly visible in this area with the valley landform and extensive vegetation frequently screening large parts of each scheme. Assuming the prior presence of Clauchrie, the introduction of Craiginmoddie would not result in cumulative effects notably different to those of Craiginmoddie alone.

6.235 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility within this group would be very similar for Craiginmoddie and Carrick. Craiginmoddie would be seen to one side of Carrick in combined views from this area. It would appear as a tighter cluster with the Carrick turbines more spread out, extending as a line across the skyline in views channelled along the valley. If Carrick were already present then the introduction of Craiginmoddie would be less of a notable change to the distant skyline which would already feature Carrick. Assuming the prior presence of Carrick, the Permanent effects arising from the addition of Craiginmoddie would be no greater than Small/Negligible scale over a Localised extent of the group. This would result in a Slight/Negligible magnitude of change and Minor effects which would be Not Significant.

Straiton

6.236 **Scenario 2** – given the topography in the area, the only areas where consented development may be visible are those elevated hilltops, such as that illustrated by viewpoint 7, where wide panoramic views are possible. Kirk Hill would be visible as a relatively distant feature to the west while other consented development would also be seen to the west beyond the nearby Dersalloch. Assuming the prior presence of consented development in this scenario, the introduction of Craiginmoddie would not result in cumulative effects notably different to those of Craiginmoddie alone.

6.237 **Scenario 3** – Clauchrie is over 15 km from this group. As illustrated by Figure 6.9, it would only be visible from hilltops in the vicinity of viewpoint 7 where just a few turbine blades would be seen as a distant feature beyond Craiginmoddie. Assuming the prior presence of Clauchrie, the introduction of Craiginmoddie would not result in cumulative effects different to those of Craiginmoddie alone.

6.238 **Scenario 4** – Carrick is located between Craiginmoddie and this group and is more widely visible, as illustrated by Figure 6.10. Combined views would be possible from elevated areas to the western side of the group where Craiginmoddie would appear as a relatively modest extension to the much more extensive Carrick array. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would result in Permanent effects of no greater than Small scale over a Limited extent of the group. This would result in a Negligible magnitude of change and Minor/Negligible effects which would be Not Significant.

Maybole

6.239 **Scenario 2** – the only consented scheme likely to be notably visible from this group is Kirk Hill. As illustrated by viewpoint 11, this would be partially visible over intervening landform and would not be particularly prominent in this area. Assuming the prior presence of Kirk Hill, the

introduction of Craiginmoddie in this scenario would not result in cumulative effects notably different to those of Craiginmoddie alone.

- 6.240 **Scenario 3** – as illustrated by viewpoint Figure 6.9, Clauchrie would be visible from the northern part of this group in the elevated areas north of Maybole. It would be over 20 km away and a very distant feature. Craiginmoddie would appear directly in front of it and, assuming the prior presence of Clauchrie, the introduction of Craiginmoddie would not result in cumulative effects different to those of Craiginmoddie alone.
- 6.241 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility within this group would be very similar for Craiginmoddie and Carrick. Craiginmoddie would be seen to one side of Carrick in combined views from this area, appearing as a westward extension to Carrick, as illustrated by viewpoint 11. If Carrick were already present then the introduction of Craiginmoddie would be less of a notable change to the distant skyline which would already feature Carrick. Assuming the prior presence of Carrick, the Permanent effects arising from the addition of Craiginmoddie would be no greater than Small/Negligible scale over a Localised extent of the group. This would result in a Slight/Negligible magnitude of change and Minor effects which would be Not Significant.

Key Routes

Glasgow – Stranraer Railway

- 6.242 **Scenario 2** – the only consented scheme likely to be notably visible from this route, within the detailed study area, is Kirk Hill. There would be some combined and sequential views south of Maybole and as it passes through the Girvan Valley although these would be very intermittent due to the extent of cutting, intervening topography and the extent of vegetation adjacent to the route. Assuming the prior presence of Kirk Hill, the introduction of Craiginmoddie in this scenario would not result in cumulative effects notably different to those of Craiginmoddie alone.
- 6.243 **Scenario 3** – Figure 6.9 illustrates there would potentially be some intermittent combined views of Clauchrie with Craiginmoddie in the northern part of the study area and some intermittent visibility of Clauchrie to the south of Girvan that would result in sequential views. In combined views from the north, Clauchrie would be very distant and barely perceptible feature. South of Girvan, Figure 6.8 illustrates that other operational and consented development is already frequently visible, with nearby schemes at Assel Valley, Tralorg and Mark Hill being fairly prominent, and the introduction of Craiginmoddie would have little influence on sequential views of turbines from this route. Assuming the prior presence of Clauchrie, the introduction of Craiginmoddie would not result in cumulative effects different to those of Craiginmoddie alone.
- 6.244 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility from this route would be very similar for Craiginmoddie and Carrick. Craiginmoddie would be seen to one side of Carrick in combined views, appearing as a westward extension to Carrick, similar to views described for the Girvan Valley and Maybole receptor groups. If Carrick were already present then the introduction of Craiginmoddie would be less of a notable change to the distant skyline which would already feature Carrick. Assuming the prior presence of Carrick, the scale of change resulting from the introduction of Craiginmoddie would be slightly reduced, given the existing

presence of Carrick in views from the route, but overall effects are unlikely to be markedly different from those of Craiginmoddie alone.

A77

- 6.245 **Scenarios 2, 3 and 4** – Craiginmoddie would have Negligible effects on this route. Any effects on the route in other scenarios would result entirely as a result of other schemes and cumulative effects arising from the addition of Craiginmoddie would be no different to those of Craiginmoddie alone.

NCN Route 7

- 6.246 **Scenario 2** – Kirk Hill is the only consented scheme which may be notably visible from this route. It will contribute to some combined and sequential views in the sections north of the site, through the Girvan Valley to Maybole and beyond, similar to those described in the corresponding receptor groups above. Craiginmoddie would tend to be the more openly visible of the two schemes and the larger contributor of visual effects on this route. Assuming the prior presence of Kirk Hill, the addition of Craiginmoddie would not result in any effects on this receptor group that would be notably different to those of Craiginmoddie alone.
- 6.247 **Scenario 3** – Figure 6.9 illustrates that the only part of the route where Clauchrie would be notably visible would be the section running immediately along the eastern side of Craiginmoddie which would be primary cause of visual effects here. Assuming the prior presence of Clauchrie, the introduction of Craiginmoddie would not result in cumulative effects different to those of Craiginmoddie alone.
- 6.248 **Scenario 4** – Figure 6.10 illustrates that the pattern of visibility from this route would be very similar for Craiginmoddie and Carrick. The most notable cumulative effects would occur over the short, open section that passes directly between the two wind farms. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would change the experience of users from one of passing alongside a wind farm to one of passing through a wind farm. However, the relative contribution of Craiginmoddie to effects would reduce given the existing influence of Carrick on views here. Assuming the prior presence of Carrick, the Permanent effects arising from the addition of Craiginmoddie would be Medium scale over a Wide extent of this section of the route. This would result in a Moderate magnitude of change and, considering the High/Medium sensitivity of route users, Moderate effects which would be Significant.
- 6.249 Over the wider route, notable cumulative effects would largely be confined to sections north of the Craiginmoddie. Views of the two schemes would be combined and they would generally be seen side by side. Craiginmoddie would appear to extend Carrick along the skyline to the west, similar to that illustrated by viewpoint 6, and slightly less screened by intervening landform. Assuming the prior presence of Carrick, the scale of change resulting from the introduction of Craiginmoddie would be slightly reduced, given the existing presence of Carrick in views from this area, but overall effects are unlikely to be markedly different from those of Craiginmoddie alone.

Cumulative Effects on Designated Areas

Local Landscape Areas

Stinchar Valley LLA

- 6.250 As set out at 6.204 – 6.207, cumulative effects on character within the underlying LCT would be no different to those of Craiginmoddie alone in all scenarios. The only visual receptors where there would be cumulative effects that are notably different than for Craiginmoddie alone would be the Stinchar Valley southwest of Barr (6.233 – 6.235) where the addition of Craiginmoddie would result in Minor effects as a result of the existing views of Carrick. The additional cumulative effects on the overall designated area would be little different from those of Craiginmoddie alone.

Water of Girvan Valley LLA

- 6.251 As set out at 6.204 – 6.210, cumulative effects on character within the underlying LCTs would largely be no different to those of Craiginmoddie alone in all scenarios. The only exception to this is in Scenario 4 where, in the north western part of the LLA, as set out at 6.207, the addition of Craiginmoddie would result in Negligible effects given the existing influence of Carrick. Similarly, cumulative visual effects within the LLA would be largely unchanged from those of Craiginmoddie, as set out at 6.221 – 6.223 and 6.227 – 6.232. The additional cumulative effects on the overall designated area would be little different from those of Craiginmoddie alone.

High Carrick Hills LLA

- 6.252 In Scenario 2 and Scenario 3, Clauchrie and Carrick would be situated closer to this LLA and would have more notable characterising effects than Craiginmoddie. As set out at 6.211 – 6.213, in either of these scenarios, the addition of Craiginmoddie would result in a slight reduction in effects on character within the LLA compared to Craiginmoddie alone. There would be no notable cumulative effects on visual receptors within the LLA and the additional cumulative effects on the overall designated area would be little different from those of Craiginmoddie alone.

Wild Land

- 6.254 Cumulative effects on the Merrick WLA are considered in Technical Appendix 6.5.

Night-time Effects

Summary of Visible Aviation Lighting Requirements and Mitigation

- 6.255 The Proposed Development will require visible aviation lighting. The current CAA policy statement (July 2017) requires that the lights will comprise a single 2000 candela steady red light mounted on the nacelle and a 32 candela steady red light mounted around the tower (three are required so as to be visible in all directions) at half the hub height. The lights must be on "by night", which is defined in UK air legislation as 30 minutes after sunset until 30 minutes before sunrise.

- 6.256 Unlike many of the unmitigated aviation lights which currently exist in Scotland, such as on existing wind turbines, bridges and large TV and radio masts, the proposed lights would include some mitigation. This includes automatic dimming of the lights (controlled by sensors installed on the turbines) to a nominal intensity of 200 candela, a 90% reduction in intensity, during periods of good visibility (meteorological visibility in excess of 5 km). The lights would still be visible, but they would not be as bright.
- 6.257 The switching of the lights on and off would be controlled by a timer, set as defined above, and not by photocells or similar that respond to particular light levels, thereby not giving rise to effects in the daytime.
- 6.258 The hub lights would also be fitted with directional intensity mitigation shielding to focus the hub lighting in the horizontal plane (+ or – a few degrees) which noticeably reduces the light from above and below. Whilst this would not eliminate visibility of the hub lights, it would have the effect of reducing the brightness of the light. In this case, some areas up to approximately 10 km from the Proposed Development, as detailed at section 6.276 – 6.279, would be located in areas where the intensity would appear notably reduced; this includes the closest settlements, residential properties and vast majority of the dispersed rural settlement in the area.

Approach and Scope of Assessment

- 6.259 The methodology used in this assessment is consistent with GLVIA3 and that set out in Technical Appendix 6.1.
- 6.260 There is a distinction between light pollution or nuisance and the effect of lighting on the character and amenity of the landscape at night. This is not a technical lighting assessment but focusses on the night-time effects as a result of the introduction of new artificial lighting within the landscape, with consequent effects on the night character and visual amenity of the area.
- 6.261 In this context, effects on landscape character are almost exclusively concerned with perceptions of darkness and the absence of development as the key characteristic constituent elements of landscapes are generally obscured after dark. Figure 6.11 illustrates the existing light environment with landscape character overlaid.
- 6.262 The ZTV on Figure 6.12 illustrates the potential visibility of the proposed visible turbine lighting across the study area. The areas on the ground where the brightness of the hub lights would be reduced in intensity due to the previously described inbuilt mitigation of the lights (directional reduced intensity less than -2 degrees below the hub light) is also presented on this ZTV. All wirelines for representative viewpoints (1-14) have included the potential visibility of visible turbine lighting.
- 6.263 Visualisations at dawn/dusk have been prepared for viewpoints 3, 9, and 10 and illustrate the proposed lighting unmitigated (at 2000 cd brightness) in order to illustrate a 'worst case'. These viewpoints have been selected as representative of potential landscape and visual receptors which are most likely to be affected at night from a range of directions and elevations.

Potential Effects

- 6.264 The aviation lights would be visible as points of light, especially where there would be a high degree of contrast at the viewpoint (i.e. the lights were seen against a dark sky / dark landmass or where there would be little or no existing artificial light sources present).
- 6.265 During periods of greater ambient light, (e.g. twilight, dusk, dawn) there would be a reduced effect as the contrast of the aviation lighting against the background would be less. The hours of twilight and darkness vary considerably in South Ayrshire. At Dailly, daylight is at its longest on June 20, where daylight hours would be approximately 04:37 – 22:03 and full darkness (times outside of Civil Twilight) would last approximately 4.5 hours⁵. Daylight is shortest on 21 Dec, where daylight hours would be approximately 08:43 – 15:50 and full darkness would last approximately 15.5 hours⁶. This variation means that in summer, experience of the lighting whilst people are typically more active and likely to be outside is considerably reduced. In winter, however, the lighting would be in use for greater periods of time and potentially active during peak activity times, i.e. morning and evening rush hours.
- 6.266 Due to the location of the lighting on the turbines relative to the rotating blades, this can result in a flashing or flickering effect caused by the screening effect of blades as they travel past the lights. These effects are dependent upon the rotation speed of the blades, direction of wind and the location of the receptor. Where a number of lit turbines are present in the view, such flashing is likely to be uncoordinated.

Sensitivity of Receptors

- 6.267 For landscape character areas, susceptibility is judged based on the degree to which they are currently characterised by darkness. Value is judged based on the same factors as for the daytime assessment unless particular factors suggest otherwise. For example, identification of a Dark Sky Park which would increase value; or where factors that contribute to value in daytime are irrelevant at night – which may reduce value at night.
- 6.268 For visual receptors, the value attached to night-time views are considered to be low unless there is a particular feature that can be best appreciated in the hours of darkness. This may include views of stars and the night sky that are only possible in particularly dark areas or views of well-known landmarks that are lit up at night. The susceptibility of visual receptors also differs at night reflecting the different activities people undertake in the hours of darkness. For example, drivers using roads at night tend to be more focused on the road and the area illuminated by their headlights than during the day and may have oncoming headlights, cats eyes or other reflective signage drawing their attention, resulting in lower susceptibility. This is particularly the case on unlit rural roads that may be narrow and winding. On the other hand, people taking part in activities requiring darkness, such as stargazing, would be of higher susceptibility.

⁵ <https://www.timeanddate.com/sun/@2641657?month=6&year=2020>

⁶ <https://www.timeanddate.com/sun/@2641657?month=12&year=2020>

Night-time Cumulative Impacts

- 6.269 As set out in Table 6.1, it has been requested by consultees that night-time cumulative impacts be considered. Of the cumulative developments within the detailed cumulative assessment those which have, or are over 150 m where obstacle lighting would be required include:
- Clauchrie (7.9 km south)
 - Arecleoch Extension (19.8 km southeast)
 - Stranoch 2 (27.6 km southeast)
 - Kilgallioch Extension (26.5 km south)
 - Carrick (0.6 km east)
 - Knockodhar (8.6 km southeast)
- 6.270 All of these schemes are currently in planning or at a pre-planning stage. In order to consider a worst case scenario it is assumed that all turbines over 150 m in each wind farm would be lit by night with standard 2000 cd nacelle lights and 32 cd tower lights. It is assumed that the only mitigation included within each scheme would be the 'standard' CAA approved automatic dimming of the lights to a nominal intensity of 200 cd during periods of good visibility.

Assessment of Night-time Effects

Existing night-time environment of the Study Area

- 6.271 Figure 6.11 gives a broad impression of the level of existing lighting within the study area based on satellite observations of light pollution. It illustrates that the existing night-time environment in the study area is typically very dark although is punctuated by lighting associated with settlements. Generally, the larger the settlement the more intense the light levels are and the more these extend to affect the surrounding landscape.
- 6.272 This pattern is largely supported by on site observations. Street lighting within nearby settlements, including Barr, Dailly and Crosshill, typically comprises modern, directional LED luminaires which have very little light spill and there is very little notable sky glow in these areas as a result of street lighting. This type of lighting does, however, result in very bright, intense lighting within the areas it is utilised and from dark surrounding areas the settlements are notable as a bright point source of light.
- 6.273 Further from the Site there is more notable lighting and resultant sky glow associated with larger settlement in coastal areas including; Girvan and the Grangestone industrial area and distillery to the north, Turnberry and also Ayr at the outer extent of the detailed study area. Maybole and Dalrymple are larger villages further inland that also have more evident lighting associated with them. More widely across the northern half of the study area the night-time landscape is dotted with intermittent light sources associated with extensive dispersed settlement and agricultural buildings.
- 6.274 Roads across the study area, outside of settlements, are largely unlit and have relatively little traffic at night, particularly across inland areas. Occasional traffic is evident as headlights

seen moving through areas that are otherwise dark, frequently flicking in and out of view as a result of the undulating topography of the area, woodland cover and roadside hedgerows.

- 6.275 The south eastern quadrant of the study area is largely encompassed within the Galloway Forest DSP, as illustrated on Figure 6.12.

Zone of Theoretical Visibility

- 6.276 Figure 6.12 illustrates the ZTV for the hub height of turbines within the Proposed Development and illustrates the maximum extent that the 2000 cd nacelle lights would potentially be visible from. It illustrates that visibility of the proposed aviation lighting would be quite intermittent and even within 5 km there would be large areas where lights are not visible. Close to the site, views of lights would generally be confined to the elevated plateau between the Girvan and Stinchar Valleys and the upper valley sides. Visibility within the valley bottoms, encompassing the main roads through them and associated dispersed settlement, would be more limited although there would be more widespread visibility around the periphery of Barr and Dailly.
- 6.277 Further afield, visibility is generally limited to elevated hilltops in the southern half of the study area. To the north, there would be fairly widespread potential visibility within the middle Girvan Valley, centred around Crosshill, and extending north onto more elevated areas towards Maybole and beyond.
- 6.278 Figure 6.12 also illustrates those areas which would benefit from the directional intensity mitigation where there would be a notable reduction in the brightness of the lights. This includes virtually all areas of potential visibility within 5 km of the Proposed Development and also the majority of areas within the Girvan Valley to the southwest of Kirkmichael.
- 6.279 Effects on landscape or visual receptors outside the areas of visibility shown on the ZTV study would be Negligible and are not considered further.

Viewpoint Analysis

- 6.280 The night-time viewpoint analysis for all viewpoints is located within Technical Appendix 6.6. Receptors are different from the daytime analysis and the analysis includes cumulative.

Landscape Effects

- 6.281 In terms of the potential for landscape character effects at night, these are almost exclusively concerned with perceptions of darkness and an absence of development as the remaining key characteristic constituent elements of landscapes are generally obscured after dark. The following landscape character types were assessed either, as having Significant daytime effects or identified as being particularly susceptible to night-time impacts.

SA17c: Foothills with Forest and Wind Farm

- 6.282 The only mention of turbine lighting the SALWCS makes in relation to this LCT is to identify that aviation lights in this area could affect dark skies in other nearby LCTs and could affect visual amenity. Darkness and absence of development are not generally identified as a particular feature of the LCT and it is noted that the “*presence of extensive commercial forestry and wind farm development limits the sense of naturalness, although this landscape can feel*

secluded due to the absence of settlement and major roads". It further notes that a "sense of seclusion that can be experienced within the less accessible eastern part of these foothills" which increases susceptibility to changes that may result from aviation lighting. This LCT is considered to be of Medium susceptibility and Community value. Overall the LCT is judged to be of Medium/Low sensitivity to visible aviation lighting.

- 6.283 As illustrated by Figure 6.12, proposed aviation lighting would be visible in the immediate vicinity of the site and intermittently extending across the LCT to the southwest across areas where coastal settlement, and associated lighting, is frequently visible and reduces the sense of remoteness. There would be very little potential visibility in the more secluded areas to the east where extensive forestry would largely obscure views. Most of the areas of visibility in the LCT would also experience the nacelle lighting with the intensity notably reduced as a result of the proposed directional intensity mitigation.
- 6.284 Considering the influence of coastal settlement on the south western part of the LCT, Permanent effects would be Medium scale over a Localised to Intermediate extent of the area which would result in a Moderate magnitude of change. Considering the Medium/Low sensitivity of the LCT, this would result in Moderate effects on the LCT which would be Not Significant.
- 6.285 **Cumulative effects** – night-time cumulative effects would occur with Carrick which is also located within this LCT, within the more secluded eastern end. Carrick would introduce visible aviation lighting across the more secluded and sensitive eastern end of the LCT, the addition of Craiginmoddie would extend the presence and influence of visible aviation lights slightly south west, into a less sensitive part of the LCT, but would not introduce an entirely new feature into the night-time landscape here. If Clauchrie or Knockodhar were present they would introduce a notable presence of aviation lights just to the south of the LCT. The addition of Craiginmoddie in either case would introduce new, visible aviation lights within this LCT but would be in keeping with the pattern of aviation lighting within other upland landscapes close by to the south.
- 6.286 Assuming the prior presence of any of these schemes, the introduction of Craiginmoddie would lead to a Permanent, Small scale change over a Localised extent of the LCT. This would result in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.

SA13: Intimate Pastoral Valleys

- 6.287 The SALWCS does not mention aviation lighting or darkness qualities in respect of this LCT and, in relation to its perceptual qualities, notes that it "does not have any sense of wildness". However, as illustrated by Figure 6.11, it remains a relatively dark area with little existing light pollution. The eastern tip of the larger southern unit of the LCT and south eastern half of the smaller unit lie within the buffer zone of the DSP although the majority of the LCT is relatively remote from this. As such, this LCT is judged to be of Medium/Low susceptibility and Regional value, accounting for it being located within an LLA, leading to a Medium sensitivity to the proposed aviation lighting.
- 6.288 The Proposed Development would introduce intermittent views of visible aviation lighting into the upper Stinchar Valley, these would extend along the more elevated valley sides and

would be more intermittent in the valley bottom. Open areas around Barr would gain views of aviation lighting although these are already influenced by lights within the settlement. These areas all lie within the zone where the brightness of the nacelle lighting would be notably reduced due to the proposed directional intensity mitigation. Southwest of Barr there would be very little visibility of the proposed lighting and it would have little influence on the wider unit of the LCT. There would be some limited visibility of aviation lighting introduced into elevated locations in the smaller unit of this LCT to the northeast.

- 6.289 Considering settled nature of the LCT, Permanent effects would be no greater than Medium scale, and notably less in more distant areas, over a Limited extent of the area which would result in a Slight magnitude of change. Considering the Medium sensitivity of the LCT, this would result in Moderate/Minor effects on the LCT which would be Not Significant.
- 6.290 **Cumulative effects** – night-time cumulative effects would occur with Carrick, mainly in the upper Stinchar Valley, in the area closest to the site. Carrick would introduce visible aviation lighting across a similar part of larger southern unit of the LCT and more widely across the smaller north eastern unit. The addition of Craiginmoddie would extend the presence and influence of visible aviation lights slightly further south west than Carrick but would not introduce an entirely new feature into the night-time landscape here. Clauchrie and Arecleoch Extension would also introduce the influence of aviation lighting into the far southwestern parts of the LCT although Craiginmoddie would have little or no influence in these areas and cumulative effects would be Negligible. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would lead to a Permanent, Small scale change over a Limited extent of the LCT. This would result in a Slight/Negligible magnitude of change and Minor effects which would be Not Significant.

SA12: Middle Dale

- 6.291 The SALWCS does not mention aviation lighting or darkness qualities in respect of this LCT. It describes it as well settled with a dense network of roads and designed landscapes. There is no notable sense of remoteness anywhere within the LCT and, in relation to its perceptual qualities, the SALWCS notes that it “*does not have any sense of wildness*”. Figure 6.11 illustrates that it remains a relatively dark area although frequent villages, roads and dispersed rural settlement provide frequent points of light within the night-time landscape. The LCT is well outside the boundary of the DSP although remains in the wider 10 mile transition area. As such, this LCT is judged to be of Low susceptibility and Regional value, accounting for it being located within an LLA, leading to a Medium/Low sensitivity to the proposed aviation lighting.
- 6.292 The ZTV on Figure 6.12 illustrates that the proposed development would introduce visibility of aviation lights in the closes part of the LCT, in the vicinity of Dailly and the existing settlement lighting here. Visibility of the aviation lighting would extend north of Dailly, along the northern valley sides across to Kirkmichael. The proposed turbine lighting would generally be seen at distances beyond 5 km, looking across a well settled valley, and virtually all parts of this LCT with potential visibility lie within the zone where the brightness of the nacelle lighting would be notably reduced due to the proposed directional intensity mitigation.
- 6.293 Considering the well settled nature of the LCT, Permanent effects would be no greater than Small scale over an Intermediate to Localised extent of the area which would result in a Slight

magnitude of change. Considering the Medium/Low sensitivity of the LCT, this would result in Moderate/Minor effects on the LCT which would be Not Significant.

- 6.294 **Cumulative effects** – the only notable night-time cumulative effects on this LCT would occur with Carrick which would introduce visible aviation lighting across a similar extent of the LCT. The addition of Craiginmoddie would introduce further visible lighting at slightly closer proximity, extending the presence and influence of visible aviation lights slightly further south west than Carrick but would not introduce an entirely new feature into the night-time landscape. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would lead to a Permanent, Small/Negligible scale change over an Intermediate to Localised extent of the LCT. This would result in a Slight/Negligible magnitude of change and Minor effects which would be Not Significant.

SA21: Rugged Uplands, Lochs and Forests

- 6.295 The SALWCS does not mention aviation lighting or darkness qualities in relation to this LCT although it does identify that the *“very sparsely settled nature of this landscape and difficulty of access, particularly to the higher and more rugged hills extending north from Merrick, can give a strong sense of seclusion.”* It goes on to further note a *“distinct sense of wildness that can be experienced within the more difficult to access core hills, accentuated by the sparse settlement and naturalness of open rough ground and unmodified lochs (these qualities also contribute to the ‘Dark Skies’ designation).”* This LCT is almost entirely located within the boundary of the DSP and the central part of it is within the ‘core area’ which also largely corresponds with the Merrick WLA. As such, this LCT is judged to be of High susceptibility to the proposed aviation lighting and the night-time landscape is of National value. Overall this LCT would be of High sensitivity to proposed aviation lighting.
- 6.296 The ZTV on Figure 6.12 illustrates that there would be fairly widespread visibility of proposed aviation lighting from open, elevated locations in the central part of the LCT within 5 – 10 km of the Proposed Development but notably diminishing beyond that. These areas are remote but the elevation means distant views of the settled coastal areas, including extensive lighting associated with these, are possible is illustrated by the night-time visualisations at viewpoint 9 and baseline panoramas for viewpoint 12. In periods of good atmospheric visibility (over 5 km), the intensity of the proposed aviation lighting would be automatically reduced to 200 cd which would notably reduce the brightness of the lights during many periods when they are visible from this LCT. Outside of the open elevated areas in the central part of the LCT, there is widespread forestry around the periphery which would limit visibility and the influence of proposed aviation lighting. Permanent effects on this LCT would be Medium scale over a Limited extent of the area which would result in a Slight magnitude of change. Considering the High sensitivity of the LCT, this would result in Moderate effects on the LCT which would be Not Significant.
- 6.297 **Cumulative effects** – notable cumulative effects are most likely to arise with Clauchrie, partially within this LCT, and Carrick which is within 1 km to the north. These are both located notably closer to the LCT than Craiginmoddie, if either of these were present then the addition of Craiginmoddie would result in a lesser degree of change given the existing influence of aviation lighting at closer proximity. Knockodhar would be located west of Clauchrie, within 2 km of the LCT, and would have a similar influence. Assuming the prior presence of any of these schemes, the introduction of Craiginmoddie would result in notably reduced effects.

These would be Permanent, resulting in a Small/Negligible scale of change over a Limited extent of the LCT. This would result in a Negligible magnitude of change and Minor effects which would be Not Significant.

Visual Effects

- 6.298 The impact on visual receptors at night is different from the impact in the daytime presented in the main LVIA. The receptors potentially affected are different and their sensitivity may also be different.
- 6.299 People in settlements would remain of similar sensitivity. However, road users would have a low value to the view, as there is no amenity value from the roads at night in this area, which reduces their overall sensitivity. In terms of long distance paths, Core Paths, tourist routes and other outdoor recreational locations are generally unlikely to be used at night and would not have any amenity value, they are therefore not considered.
- 6.300 However, recreational users specifically gazing at the night sky would be sensitive to changes in the night sky. The site is adjacent to the Galloway Forest DSP and night-time visitors here have been included as the main recreational users.

Residents and Communities

- 6.301 Effects of aviation lighting on the residential amenity of the nearest, most affected properties is considered within Technical Appendix 6.7. Views of people at night more widely within the surrounding settlements are judged to be of High susceptibility and Community value, resulting in a High/Medium sensitivity to the proposed aviation lighting.
- 6.302 As illustrated by the ZTV on Figure 6.12, the main areas of settlement likely to have views of aviation lighting are the dispersed settlement in the upper Stinchar Valley, in the vicinity of Milton and extending to North and South Balloch, and on the south eastern edge of Dailly. There would also be views from areas of dispersed settlement and peripheral areas of villages in the Girvan Valley to the north and, to a lesser degree the lower Girvan Valley and mid Stinchar Valle to the west and southwest. All of these areas are located within the zone where the brightness of the nacelle lighting would be notably reduced due to the proposed directional intensity mitigation. Turbine lighting would be largely screened by intervening landform at Barr.
- 6.303 Most affected of these areas would be dispersed settlement within the valleys where there is no street lighting where the baseline night-time environment tends to be very dark. In these areas the Proposed Development would introduce visible aviation along a dark skyline. In closer areas, such as illustrated at viewpoint 1, intervening landform would generally screen a large proportion of the lights. This would also be the case in more distant views along the valleys to the south and west, as illustrated by viewpoints 10 and 13. In more distant areas to the north, views would become more open and more nacelle lights may be visible above the skyline, similar to the view illustrated at viewpoint 6. In periods of good atmospheric visibility the automatic dimming of the lights would further reduce the brightness beyond that resulting from the directional intensity mitigation alone. In these areas of dark, dispersed settlement the Permanent effects arising from the introduction of aviation lighting would be Medium scale, considering the degree of in-built mitigation, over an Intermediate extent. This

would result in a Moderate magnitude of change and Moderate effects which would be Significant.

- 6.304 Users of local roads in the valleys would experience the same views as people in the areas of dispersed settlement although given the Low susceptibility and Community value would have a Low sensitivity to the aviation lighting. As a result, the Moderate magnitude of change to their views would result in Moderate/Minor effects which would be Not Significant.
- 6.305 In Dailly and other villages in the Girvan Valley, including Kirkmichael and Crosshill, the existing settlement lighting is fairly pervasive. The Proposed Development would introduce red aviation lights along the skyline in views from peripheral areas of the settlements, as illustrated by viewpoints 3 and 6, which would be a notable new feature in night-time views although these would be considerably less bright than street lighting and would not notably impinge on the amenity of people within or moving around the settlements at night. In periods of good atmospheric visibility the automatic dimming of the lights would further reduce the brightness beyond that resulting from the directional intensity mitigation alone. In these settlements the Permanent effects arising from the introduction of aviation lighting would be Small scale, considering the degree of in-built mitigation, over a Localised extent. This would result in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.306 **Cumulative effects** – Carrick, Clauchrie and Knockodhar would all be visible to some degree from areas of dispersed settlement within the Stinchar Valley. Carrick would often be seen in combination with Craiginmoddie and would be a more notable feature in views northeast of Barr although would also be seen in long valley views from further afield, as illustrated by viewpoint 10. Clauchrie and Knockodhar would only be likely to be seen from areas in the immediate vicinity of Barr and to the southwest and are unlikely to be seen on conjunction with Craiginmoddie. Of these two, Knockodhar would be closer and likely to be more widely visible. Only Carrick is likely to be visible from areas of settlement in the Girvan Valley.
- 6.307 Assuming the prior presence of Carrick, the introduction of Craiginmoddie would introduce further lighting that would be visible from dispersed settlement in upper Stinchar Valley and be seen as an addition to an existing cluster of red aviation lights. Permanent effects arising from their introduction would be Small scale over an Intermediate extent. This would result in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.308 In settlements within the Girvan Valley the Permanent effects would be less, resulting in a Small/Negligible scale of change over a Localised extent. This would result in a Slight magnitude of change and Moderate/Minor effects which would be Not Significant.
- 6.309 Assuming the prior presence of Carrick, the addition of Craiginmoddie would introduce further visible lighting at slightly closer proximity, extending the presence and influence of visible aviation lights slightly further south west than Carrick but would not introduce an entirely new feature into the night-time landscape. Assuming the prior presence of Carrick, the introduction of Craiginmoddie would lead to a Permanent, Small/Negligible scale change over an Intermediate to Localised extent of the LCT. This would result in a Negligible magnitude of change and Minor/Negligible effects which would be Not Significant.
- 6.310 If Clauchrie or Knockodhar were already present then aviation lights would be an existing feature of some night-time views within the Stinchar Valley, southwest of Barr. The addition of

Craiginmoddie would lead to some limited sequential views but, assuming the prior presence of either or both of these schemes, effects on views in areas of dispersed settlement and for road users are unlikely to be notably different than those of Craiginmoddie alone.

Galloway Forest DSP

- 6.311 Visual receptors within the DSP would have a High susceptibility to the proposed aviation lighting in this area which is identified by the Dark Sky Lighting SG as being of National value for tourism. Overall sensitivity of these users to the proposed aviation lighting is judged to be High.
- 6.312 The closest part of the DSP that is specifically promoted as a location for stargazing or viewing the night sky is the areas south of Loch Bradan⁷, within the DSP 'buffer zone'. The ZTV on Figure 6.12 illustrates that there would be no visibility of the proposed aviation lighting from the Carrick Forest Drive or any of the parking areas or popular wild camping spots located around the loch. Views would be confined to nearby open hilltops, such as illustrated by the night-time visualisations at viewpoint 9, which are less likely to be visited at night and particularly by more casual visitors. From these open hilltops the proposed aviation lighting would be seen low on the horizon, just above the skyline, as illustrated at the viewpoint. None of the other areas specifically promoted for stargazing are located within the ZTV.
- 6.313 It would not result in any sky glow and would not be located in a position where it would interfere with observations of the night sky which, as a rule, involve looking upwards rather than in a horizontal plane. During periods of good visibility the automatic dimming of hub lights to 200 cd would significantly reduce the intensity of visible lights.
- 6.314 The ZTV indicates that the only parts of the 'core area' where the proposed lighting would be visible is from the open hilltops, largely located along the western side of this area, which are rarely visited at night given their remoteness and limited access. As illustrated by the baseline panoramas at viewpoints 12 and 15, the proposed aviation lights would be seen set against the ground in these areas and would not extend above the horizon or into the night sky and would have little or no influence on stargazing activities.
- 6.315 Permanent effects on night-time visitors to the DSP would be no greater than Small scale over a very Limited extent of the area which would result in a Negligible magnitude of change. Considering the High sensitivity of the DSP visitors, this would result in Minor effects which would be Not Significant.
- 6.316 **Cumulative effects** – Clauchrie and Carrick are both located within the 'buffer zone' of the DSP. Both would be more widely visible than Craiginmoddie and always likely to be seen in the same views. They would result in visible aviation lighting being seen at closer proximity and either in front or to the side of Craiginmoddie in views from the DSP, as illustrated by the night-time visualisations at viewpoint 9 and baseline panoramas at viewpoints 12 and 15. Knockodhar would be located immediately west of Clauchrie, just outside the DSP boundary, and would be similar feature in night-time views as Craiginmoddie although seen more to the west. Assuming the prior presence of any of these schemes, the Permanent effects arising from the introduction of Craiginmoddie would be Negligible scale over a Limited extent

⁷ https://forestryandland.gov.scot/images/pdf/rec_pdfs/DarkSkiesLeaflet.pdf

which would result in a Negligible magnitude of change and Minor/Negligible effects which would be Not Significant.

Designated Areas

- 6.317 The only LLA that specifically notes darkness within its reasons for designations or is particularly concerned with perceptual qualities of wildness or remoteness is the High Carrick Hills LLA. As set out at 6.295 – 6.297, effects of proposed aviation lighting on the underlying character of this LLA would be Moderate and Not Significant and would be less than this in scenarios where Craiginmoddie was added assuming the prior presence of Clauchrie or Carrick. Night-time visual effects on the LLA would almost exclusively relate to visitors to the DSP where, as set out at 6.311 – 6.315, effects would be Minor/Negligible and Not Significant with a slight reduction in the scale of effects in cumulative scenarios including either Clauchrie or Carrick, as set out at 6.316. Overall, the effects of proposed aviation lighting on the LLA would be very limited and would not fundamentally undermine the reasons for designation.

Wild Land

- 6.318 Night-time effects on the Merrick WLA are considered in Technical Appendix 6.5.

Summary

- 6.319 The Proposed Development would introduce a new, commercial scale wind energy development into foothills forming a plateau between the Girvan and Stinchar Valleys where commercial wind farms are an existing characteristic feature. It would extend this form of development further inland and would comprise turbines of larger scale, representing an evolution in wind turbine technology from the currently operational wind farms in the area which have been present in the landscape for a number of years.

Construction/Decommissioning Stage Effects

- 6.320 Construction and decommissioning stage effects would be substantively the same. They would involve short-term activities and effects which would be Not Significant.
- 6.321 The greatest effects during the construction phase would arise from the standing turbines, and large cranes used to erect these, during the final stages of construction – by which point the effects would be the same as for those during operation.

Operational Stage Effects

Effects on Landscape Character

- 6.322 Significant effects on landscape character would be localised and confined to areas within no more than 4.5 km from the Proposed Development and, in most cases, less than this. These would comprise: Major/Moderate effects on the SA17c: Foothills with Forest and Wind Farm LCT, which would be Adverse, within 1.5 km of the turbines; Major/Moderate on the SA13: Intimate Pastoral Valleys LCT, which would be Adverse, within 3.5 km of the turbines; and, Major/Moderate on the SA12: Middle Dale LCT, which would be Adverse, within 4.5 km of the

turbines. Elsewhere, effects on landscape character would be Moderate or less and Not Significant.

Visual Effects

- 6.323 Significant visual effects would be limited, confined to receptors in relatively close proximity to the Proposed Development where there would be open views. These would be Major/Moderate and Adverse within the Stinchar Valley (northeast of Barr) receptor group and Major/Moderate and Adverse within the Dailly receptor group. Major and Adverse effects would also occur on the short 3 km section of NCN Route 7 as it passes along the eastern Site boundary although, more widely, effects on this route would be no more than Moderate and Not significant.
- 6.324 All other visual receptors within the study area would experience Moderate effects or less which would be Not Significant.

Designated Areas

- 6.325 The detailed study area is extensively covered by Local Landscape Areas. These broadly correspond with underlying LCTs and the reasons for their designation, and descriptions of special qualities, are closely linked to landscape character. There would be some areas of locally Significant effects on landscape character and views within the Stinchar Valley LLA, the Water of Girvan Valley LLA and the High Carrick Hills LLA although these would not fundamentally undermine any of the reasons for designation of any of these areas.
- 6.326 A Wild Land Assessment has been undertaken for the Merrick WLA and is provided in Technical Appendix 6.5. It includes consideration of cumulative wind energy development, including cumulative aviation lighting and it identifies that effects on the Merrick WLA would be of Moderate/Minor and Adverse. There would be no 'material change in the experience of any of the wild land qualities' and these effects would be Not Significant.

Cumulative Effects

- 6.327 The cumulative assessment considers the additional effects that would arise from the introduction of Craiginmoddie given the prior presence of other wind farms included in each scenario. All existing wind energy development is considered as part of the baseline (Scenario 1) assessed in the main assessment while additional consented developments are considered as the future baseline (Scenario 2) in the cumulative assessment; further cumulative scenarios consider proposed future development. The only currently proposed wind farm, subject of a valid application, with the potential for notable cumulative effects is Clauchrie, considered in Scenario 3.
- 6.328 Schemes in scoping are noted but are not usually included within assessment scenarios given the high degree of uncertainty surrounding them at this stage. There is no guarantee that they will come forward as planning submissions and the nature of the proposed schemes may be subject to change. However, given its close proximity, potential cumulative effects with the neighbouring Carrick wind farm are considered as Scenario 4.
- 6.329 Cumulative effects on all landscape and visual receptors in all scenarios would either be the same as for Craiginmoddie alone or would be slightly reduced due to the existing presence

of other wind farms. There would however be some localised differences in the scale, extent or nature of effects for a range of receptors – as detailed in the cumulative effects section of this chapter.

Night-time Effects

- 6.330 The Proposed Development comprises turbines of over 150 m in height and, as such, are required by air traffic safety policy to include visible aviation lighting. This would give rise to Moderate, Adverse effects within the host SA17c: Foothills with Forest and Wind Farm LCT which would be Not Significant. Effects on visual receptors in areas of dispersed settlement within the upper Stinchar Valley would also experience Moderate and Adverse effects which would be Significant.
- 6.331 All other landscape and visual receptors, including visitors to the Galloway Dark Sky Park, within the study area would experience Moderate/Minor effects or less as a result of the visible aviation lighting, which would be Not Significant.