## Document history

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# Appendix 5.4

## Wild Land Assessment

## Contents

## 5.4.1 Introduction

5.4.1.1 This appendix reports on the Wild Land Impact Assessment (WLIA) which assesses the effects of the proposed development (South Kyle II Wind Farm) on the Merrick Wild Land Area (WLA) and its associated Wild Land Qualities (WLQs).

5.4.1.2 The proposed development is not located within the WLA. Consequently, there would be no direct effects on the Merrick WLA and its physical attributes.

5.4.1.3 NPF4 Policy 4 g) advises that "*effects of development outwith wild land areas will not be a significant consideration*".

5.4.1.4 The proposed development is located approximately 15.5 km distance from the edge of the WLA boundary and may therefore affect the views and perceptual WLQs experienced from within the WLA. The range of effects could include views of the turbines during the day and views of the aviation warning lights during the night. Either of these scenarios could also affect the 'perceptual responses' and WLQs, for example, the 'sense of awe' in response to the steep, rugged hills experienced within the Merrick WLA.

5.4.1.5 The WLIA has been divided into two parts, covering the day-time effects (resulting from the overall visibility of the proposed turbines) and the night-time effects (resulting from the visibility of the associated turbines aviation warning lights).

5.4.1.6 The structure of the WLIA has been set out as follows:

- Section 1: Daytime WLIA:
  - WLIA Methodology; and
  - Day-time WLIA for the Merrick WLA.
- Section 2: Night-time WLIA:
  - WLIA Methodology; and
  - Night-time WLIA for the Merrick WLA.

5.4.1.7 Each of the WLIAs are supported by a range of ZTV maps and illustrated viewpoints from agreed WLA viewpoint locations.

## 5.4.2 Consultation

5.4.2.1 The EIA scoping exercise and consultation on wild land has principally engaged with NatureScot (NS). NS has advised in their scoping response dated the 3rd of May 2022 that a WLA assessment would be required for the Merrick WLA, assessing the effect of turbines on the WLQs of the WLA.

5.4.2.2 NS also advised that a night-time WLA assessment should be undertaken. As part of their scoping response (dated 03/05/2022) they stated that

*"There is a complex scenario emerging around the Merrick WLA with proposals for very tall turbines currently in the planning system. Accordingly, for turbines of this heigh and at this distance (15 km) we would expect to see a Wild Land Impact Assessment included within the EIAR. This WLIA should also include effects of turbine lighting on the SQs[1] of the WLA."*

5.4.2.3 One assessment viewpoint within the Merrick WLA (Viewpoint 18) was agreed with NS. Viewpoint 18 represents the daytime views from the Merrick hill summit (refer to Figure 5.31)

[1] SQ- Special Qualities

[2] NatureScot, (August 2023). Technical Guidance: *Assessing Impacts on Wild Land Areas*.

## 5.4.3 Section 1: Day-time Wild Land Impact Assessment

### Methodology

5.4.3.1 The WLA assessment accords with NS's Technical Guidance: *Assessing Impacts on Wild Land Areas*[2]. The method and general approach to the wild land assessment is succinctly described in paragraphs 3-4 and 12 of that guidance as follows:

*"This guidance sets out a methodology and general principles for assessing the impact of development and other proposals on WLAs, as they are experienced from within the WLA, not from outwith."*

*"The method described employs the general approach and principles set out within the Guidelines for Landscape and Visual Impact Assessment (GLVIA)[3]. The assessment of effects of a proposal on a WLA is an exercise distinct from landscape and visual impact assessment (LVIA) that can draw on but should not duplicate its information. The assessment should consider effects on the physical attributes and perceptual responses that contribute to the WLA qualities identified in the WLA descriptions."*

*"Each of the WLA descriptions set out their particular wild land qualities, with the physical attributes and perceptual responses contributing to it identified. These descriptions should form the starting point for an assessment of impacts on a WLA."*

5.4.3.2 Table 1 of the Technical Guidance provides a summary of the WLIA Assessment approach, this approach is as follows:

- "*Step 1 - Define the study area and scope of the assessment:*

  *Identify a study area appropriate to the scale of the proposal and extent of likely significant effects on the WLA.*
- *Step 2 – Verify the WLA baseline:*

  *Confirm the wild land qualities (set out in the WLA description) relevant to the study area, describing any major changes that have occurred since the description was prepared and the nature of their contribution to the WLA.*
- *Step 3 – Assess the sensitivity of the qualities:*

  *Through detailed field assessment within the study area, assess the sensitivity of the wild land qualities scoped in (including their physical attributes and perceptual responses), to the type and scale of change proposed.*
- *Step 4 – Assess the magnitude of the effects:*

  *Assess the effects on individual and / or combinations of qualities, drawing out which physical attributes and perceptual responses will be affected, how and to what degree. This should reflect the size or scale of change, its extent and duration.*
- *Step 5 – Judge the significance of the effects:*

  *Conclude on the overall significance (taking into account any mitigation), in terms of the study area and where relevant the wider WLA."*

5.4.3.3 In line with the GLVIA 3 and the LVIA methodology set out in EIAR Volume 3, **Appendix 5.1**, the general approach entails assessment of the sensitivity of the landscape or visual receptor (in this case the WLQ) to the proposed development (Step 3). This in turn is considered against the magnitude of change (Step 4) likely to result from the proposed development in order to identify a level of effect (Step 5) and subsequently whether this is significant.

[3] Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Landscape Institute and IEMA (May 2013).

### Fieldwork

5.4.3.4 Fieldwork supporting this assessment was undertaken in summer 2024, with Landscape Architects travelling on foot to the assessment viewpoint and other areas within the WLA such as Shalloch on Minnoch[4].

### Sensitivity

5.4.3.5 The receptor sensitivity is determined by considering the value (which in the case of WLAs is assessed as high, reflecting its national level importance) and the susceptibility of the WLQ to change likely to result from the proposed development. Judgements on value and susceptibility are combined to provide an assessment on the sensitivity of the WLA and associated WLQs to the proposed development. This is evaluated in terms of High, Medium and Low as explained Chapter 5: LVIA.

5.4.3.6 Both the daytime and night-time assessments are supported by field work examining the WLQs and their associated perceptual responses. The night-time field work is supported by baseline observation of the existing night-time environment or 'darkness survey' of other lights and lit structures that may be perceived from the WLA.

### Magnitude of Change

5.4.3.7 The magnitude of change (evaluated in terms of High, Medium, Low, and Very Low with intermediate levels) considers the scale and geographical extent of the likely effects in a similar manner to Chapter 5: LVIA although the wild land assessment is focused on the WLQ and their perceptual responses.

5.4.3.8 The duration of the effect is separated from the assessment of magnitude and level of effect and used to describe the nature of the effect (e.g. temporary or permanent). In the case of this development the duration is described as long-term and reversible.

### Cumulative Effects

5.4.3.9 A list of other wind farm development included within the assessment is provided in Table 5.4, Chapter 5: LVIA.

5.4.3.10 The cumulative effects are assessed in the same manner as the 'stand-alone' effects of the proposed development and follow the same assessment methodology combining sensitivity and magnitude to determine a level of effect, guided by Table 5.5.1, below.

5.4.3.11 The cumulative effects of the proposed development are assessed in terms of the 'additional' and the 'combined' cumulative effects taking account of other existing/under construction, consented and submitted wind farm planning applications. The Two cumulative scenarios are considered as follows:

- Scenarios 1: Existing, consented and the Proposed Development:
  - The additional and combined cumulative effects of the proposed development existing and consented wind energy developments and the proposed development are assessed.
- Scenario 2: Existing, consented, applications and the Proposed Development:
  - As above, with the inclusion of other, applications (including those at the planning appeal stage).

### Evaluation of Significance

5.4.3.12 In accordance with the relevant EIA Regulations, it is important to determine whether the effects, assessed as a result of the proposed development, are likely to be significant. That assessment has been guided by a matrix illustrated in Table 5.5.1. Significant landscape and visual effects will be highlighted in bold in the text and in most cases, relate to all those effects that result in a '**Substantial**', '**Substantial to Major**' '**Major**' or '**Major to Moderate**'. 'Moderate' levels of effect can also be assessed as significant, subject to the assessor's opinion, which should be clearly explained as part of the assessment. Un-shaded boxes in Table 5.4.1 indicate a non-significant effect.

5.4.3.13 In those instances where there would be no effect, the magnitude has been recorded as 'Zero' and the level of effect as 'None'. The type or nature of effect is also described as either direct or indirect; temporary or permanent (reversible); cumulative; and beneficial, neutral or adverse. Project decommissioning ensures that the effects of wind farm development on WLAs would also be reversible.

Table 5.4.1: Evaluation of Landscape and Visual Effects

| Magnitude of Change | Landscape and Visual Sensitivity | | | |
|---|---|---|---|---|
| | High | Medium | Low | Very Low |
| **High** | **Substantial** | **Major** | Moderate | Not used |
| **High - Medium** | **Substantial to Major** | **Major to Moderate** | Moderate to Minor | |
| **Medium** | **Major** | Moderate | Minor | |
| **Medium - Low** | **Major to Moderate** | Moderate to Minor | Minor | |
| **Low** | Moderate | Minor | Negligible | |
| **Low – Very Low** | Moderate to Minor | Negligible | Negligible | |
| **Very Low** | Minor | Negligible | Negligible | |
| **Zero** | None | | | |

## 5.4.4 Day-time Assessment – WLA 01: Merrick

### Methodology

5.4.4.1 NS's WLA description of WLA 01: Merrick[5] describes the WLQ and perceptual responses, providing an overview of the WLA as follows:

"*The Merrick WLA is the most southerly of only three WLAs to the south of the Highland Boundary Fault, all of which are relatively isolated and small in extent (Merrick is 82 km$^2$). It includes the central part of Forestry Commission Scotland's (FCS) Galloway Forest Park, and consists of a range of steep hills, including Merrick (a Corbett) which at 843 metres is the highest mainland hill in the south of Scotland. Together with several other hills over 600 metres in height, it forms a ridge with spurs between the tops of Shalloch on Minnoch (another Corbett) and Benyellary, collectively known as 'The Awful Hand'. To the east of this, the rocky Dungeon Hills form a slightly lower ridge to the south of the more rounded hill of Mullwharchar. The hills are predominantly open, rolling moorland, but contain some exposed and craggy peaks.*

*These ridges enclose a central swathe of lower-lying, undulating ground containing several natural lochs, forming a corridor that rises over 400 m from Loch Trool to Loch Enoch and providing some rugged and sometimes boggy walking. The entire WLA lies within Forestry Commission Scotland (FCS) ownership and is surrounded on all sides by extensive forestry plantation, predominantly of Sitka spruce."*

[4] Shalloch on Minnoch is a hill in the Range of the Awful Hand, a sub-range of the Galloway Hills range, part of the Southern Uplands of Scotland

[5] Scottish Natural Heritage (2017), WLA Description of the Merrick WLA 1.

5.4.4.2 The Awful Hand Ridge is clearly visible in the underlying OS base mapping shown in Figure 5.1, and the views from the ridgeline and associated summits are experienced as expansive 360° panoramas, viewing across the Galloway Forest to areas outwith the Merrick WLA.

5.4.4.3 In particular the WLA description notes:

*"From the tops, the extent of the WLA is generally evident by the transition from the moorland to the surrounding forestry plantations. Hills to the north and east beyond the WLA have a rugged character and, despite the intervening forestry, the extent is less well defined in this direction. From the central swathe of lower-lying moorland and lochs, outward views are restricted by the adjacent hills and the limits of the WLA are much less obvious."*

5.4.4.4 In respect of the hills to the north and east, it should also be noted that more distant views of hills to the north and east beyond Loch Doon are characterised by multiple wind farm development including South Kyle I. The Merrick WLA overlaps with the core area of Galloway and Southern Ayrshire UNESCO Biosphere and the core area of the Galloway Forest Dark Sky Park. The whole of the Merrick WLA is also overlapped by local landscape designations. The southern part is overlapped by the Galloway Hills Regional Scenic Area (RSA) in Dumfries & Galloway, whilst the northern part is overlapped by the Loch Doon Valley Local Landscape Area (LLA) within East Ayrshire and the High Carrick Hills LLA within South Ayrshire.

## 5.4.5 Step 1 – Study Area and Scope of the Assessment

5.4.5.1 The WLA Study Area includes the whole of the Merrick WLA, and in particular those areas overlapped by the blade tip ZTV as illustrated in Figure 5.2a.

5.4.5.2 The ZTVs have been calculated using ReSoft © WindFarm computer software to produce an area of theoretical visibility of any part of the proposed turbines, calculated to turbine blade-tip and hub height and based on a digital terrain model. The ZTV does not therefore take account of intervening features such as forestry and can in those circumstances provide an over-estimate of the potential visibility of the proposed turbines.

5.4.5.3 The ZTV coverage within the Merrick WLA includes most of the northeastern facing hill slopes and summits on, and to the east of Awful Hand Ridge, this includes Shalloch on Minnoch (768 m AOD), Tarfessock (697 m AOD), Kirrieeoch Hill (786 m AOD) and the Merrick (AOD 843 m). The proposed development would be theoretical visible from these more elevated locations, viewing across 17 km – 22 km of the northeastern part of the WLA and beyond as extensive and panoramic views, which extend well across the WLA and the enclosing Galloway Forest and beyond Loch Doon to the north.

5.4.5.4 The blade tip ZTV (Figure 5.6) indicates fragmented ZTV coverage of the WLA.

### Scope of Cumulative Assessment

5.4.5.5 In terms of cumulative ZTV coverage (refer to Figures 5.10 – 5.13) almost all the Awful Hand Ridge, within the WLA boundary is overlapped by the ZTV pattern for existing, consented and other wind farm applications, which are visible to the northeast. The main ones within 20 km distance of the WLA and visible from Viewpoint 18: Merrick Summit (Figure 5.31a – f) are listed as follows:

- Existing Wind Farms: South Kyle I, Benbrack, Enoch Hill, North Kyle, Dersalloch, and Windy Standard I / II.
- Consented Wind Farms: Windy Standard III and Over Hill; and
- Other wind farm planning applications: Scienteuch, Knockkippen and Windy Standard I Repowering.

5.4.5.6 There is no ZTV coverage from large sections of the western part of the Awful Hand Ridge (as shown in Figure 5.2a) although other existing and consented wind farms and wind farm planning applications are visible.

## 5.4.6 Step 2 – Wild Land Qualities included in the Assessment

5.4.6.1 Step 2 of the WLIA methodology requires confirmation of the WLQs (set out in the WLA description) which are relevant to the study area and included in the WLIA. A description is provided of the nature of their contribution to the WLA and any major changes that may have occurred since the date of the WLA Description.

5.4.6.2 The assessment reasoning is also provided for any WLQs excluded from the WLIA.

5.4.6.3 The Merrick WLA has four WLQs defined in the WLA Description as follows:

- WLQ1: *"A relatively small wild land area but with a strong perception of naturalness, few human artefacts and little contemporary land use"*

  WLA description notes that

  *"There is a strong sense of naturalness across much of this WLA, especially within the interior, where the influence of the surrounding forest plantations is smaller. The uplands contain extensive tracts of grass and heather moorland with areas of exposed rock and montane vegetation evident on the tops. Lower areas are generally poorly drained, with clumps of distinctive white moor grass and large areas of blanket bog, including Silver Flowe. The contrast between the rocky uplands and the horizontal expanse of the lower-lying areas highlights the naturalness and awe-inspiring qualities of these hills".*

  The WLA description refers further to physical features within the WLA such as lochs and watercourses, deer and wild goats and the absence or lack of human artefacts or contemporary land use within the WLA which all contribute to the sense of naturalness and arresting qualities.

  The proposed development would not affect any of these physical features within the WLA and those areas of the greatest naturalness, including the Silver Flowe area, to the east of the Awful Hand Ridge sit wholly outwith the ZTV. It is considered that the proposed development would not significantly affect this WLQ, and it has therefore been excluded from further assessment.

- WLQ2: *"A wild land area that contrasts with the adjacent Forest Park, especially in terms of human activity"*

  The WLA description explains that

  *"There is a noticeable difference in terms of human activity between the WLA and the surrounding parts of the Forest Park. Whereas the Forest Park is popular as a recreational destination and contains numerous visitor facilities, the WLA is much more lightly used, with little obvious recreational provision, providing a relatively strong sense of remoteness and solitude."*

  The proposed development is located beyond the Galloway Forest Park and would not affect the levels of recreational uses, or the visual contrast between the forest and moorland of the WLA. However, if anything, it would reinforce the contrast between the lack of human land use within the WLA and that landuse outwith the WLA.

  The WLA description also notes that

  *"The high level of recreational use within the Forest Park is generally screened from within the WLA and consequently has less effect on the sense of remoteness, sanctuary and solitude."*

  The proposed development would not be screened, but in common with the forestry land use and other wind farm development, it reinforces the contrast between the WLA and development beyond the WLA boundary and in this case, beyond the Galloway Forest, thus preserving and maintaining a strong sense of remoteness and solitude.

  For the reasons outline above, this WLQ has been excluded from further assessment.

- WLQ3: *"Human elements are widely visible from the tops and outermost slopes, but lower-lying areas have a much stronger sense of remoteness."*

This WLA description considers that the surrounding Galloway Forest of non-native Stika spruce and associated forestry activities, which are clearly visible from the upper elevation and outward facing slopes, contrast with the moorland hills and diminish the sense of remoteness, sanctuary, and overall naturalness experienced from this part of the WLA. Aligning with other wind farm development, the proposed development would be visible from beyond the Galloway Forest area, albeit it partially screened by the intervening topography.

In reference to wind energy development, the WLA description considers some developments are

*"too distant to impose noticeably upon the wild land qualities, they appear as obvious human artefacts and some to the west are sufficiently close or extensive to be clearly visible, so reducing the sense of sanctuary."*

The WLA description, considers the WLQ and associated perceptual responses (sense of sanctuary and remoteness) experienced from the Awful Hand Ridge and the northeastern facing slopes to have a weaker baseline, due to the overall influence of other wind farm developments and forestry plantation activities beyond the WLA boundary. Therefore, the wild land assessment should assess whether the proposed development is "sufficiently close or extensive" so as to significantly affect the WLQ and perceptual responses ('sense of sanctuary' and 'remoteness'). The lower lying areas within the WLA referred to in this WLA description, to the east and south of the Awful Hand Ridge would not be affected by the proposed development due to the intervening topography (refer to Figure 5.2a).

- WLQ4: *"A rugged landscape that provides a surprisingly high degree of physical challenge."*

  The proposed development would not affect the physical challenge presented by the opportunities for climbing and scrambling within the WLA. The perceptual responses to this landscape, referred to within the WLA description, as the *"awe inspiring*" topography *("more akin to a Highland landscape, but within a lowland context")* and the strong "*sense of remoteness and sanctuary*" in response to the physical challenge required to reach parts of the WLA. These perceptual qualities and responses would remain strong and unaffected by the Proposed Development.

  The rugged areas of lochans and Silver Flowe raised bog are also referenced within this WLQ, however, all this area is outwith the ZTV (due to intervening topography) and therefore would be unaffected by the proposed development.

  Based on the preceding analysis, this WLQ has been excluded from further assessment.

5.4.6.4 As a result, the WLIA will assess the effects of the proposed development on WLQ3, excluding WLQs 1, 2 and 4.

## 5.4.7 Step 3 – Sensitivity

5.4.7.1 WLQ3: *"Human elements are widely visible from the tops and outermost slopes, but lower-lying areas have a much stronger sense of remoteness"*

5.4.7.2 WLQ3 is linked to preserving the *"sense of remoteness"* and "sanctuary". The definition of the word "sanctuary" in this context is described by NS as

*"The perception of separation from the 'modern world', isolation or distance from disturbance, that engender feelings of respite or tranquillity, that enables a focus on the natural / semi-natural setting."*

5.4.7.3 The NS Technical Guidance: *Assessing Impacts on Wild Land Areas* advises that WLAs are of national importance and consequently a value of 'high' is accorded in this assessment.

5.4.7.4 WLQ3 confirms that the perceptual qualities of *"sanctuary"* and *"remoteness"* have been slightly reduced/diminished by the surrounding Galloway Forest and by some wind energy developments. Field reconnaissance confirms that these perceptual qualities still remain strong, as illustrated in Viewpoint 18, because of the scale, distance and 360-degree views in addition to the change in elevation that places the WLA 'above' all other surrounding human land uses and has a strong emphasises on the sense of separation or *"sanctuary"* and *"remoteness"* from the wind farm developments which are located in the distance beyond the Galloway and South Ayrshire UNESCO Biosphere, the Galloway Forest Park and Loch Doonwhich provide a buffer or area of gradual transition from moorland to forestry and other land use (wind farms) beyond the WLA boundary.

5.4.7.5 Although the strength of these perceptual responses is strong and resilient they are considered to be highly susceptible to wind energy development that would appear too close and/or extensive than that of the existing baseline context. A high susceptibility is therefore assessed. This combined with the high value indicates a *High* sensitivity.

## 5.4.8 Steps 4-5 – Assessment of Effects

5.4.8.1 Having assessed the sensitivity of the relevant wild land qualities, the assessment now considers the magnitude of change that would affect WLQ3 as a result of the proposed development and the consequential level of this effect. This assessment is then followed by an assessment of the cumulative effects.

5.4.8.2 The proposed development is located beyond the Galloway Forest Park and Loch Doon which is clearly visible in Viewpoint 18. The blade tip ZTV overlaps with areas of theoretical visibility for other existing and under construction wind fam developments which form part of the baseline landscape and views beyond the WLA. The proposed development overlaps with a section of the horizon and views that is already occupied by existing wind farm development, notably North Kyle, South Kyle I, Benbrack, Enoch Hill, Dersalloch, and Windy Standard I / II. As such the proposed development integrates with the existing baseline. It does not extent it horizontally or vertically or appear 'closer' than other existing development. The proposed development is also visible from the WLA at distances of between approximately 15 km and 23 km. Although the proposed development would increase the density of turbines viewed in this direction the effect would be very marginal. It is therefore considered that the magnitude of change brought by the proposed development on WLQ3 and the perceptual qualities of *"sanctuary"* and *"remoteness"* would be Very Low. This combined with High sensitivity would lead to a Minor level of effect that would not be significant.

5.4.8.3 The geographical extent would be experienced from within the Merrick WLA, along the Awful Hand Ridge and from those northeastern facing slopes and summits. The nature of this effect would be long term (reversible), direct, cumulative and neutral.

### Cumulative Effects: Scenario 1 – Existing and Consented Wind Farms

5.4.8.4 Cumulatively, the additional effect of adding the proposed development to the baseline of the existing and consented wind development would be **Minor** and not significant as the consented schemes would not particularly alter the primary assessment above.

5.4.8.5 The combined cumulative effect of the proposed development and the baseline of the existing and consented wind farm development would slightly increase due to the increase in the collective extent of development visible from within the Merrick WLA and along the Awful Hand Ridge. The consented development would also however, reinforce the pattern of development, overlapping with existing development and not otherwise intruding further towards the WLA. The level of effect therefore would remain as **Minor** and not significant.

### Cumulative Effects: Scenario 2 – Existing and Consented Wind Farms and Applications

5.4.8.6 The additional effect of the proposed development to the baseline of existing and consented wind energy development, and other wind energy applications would remain *Very Low* taking into consideration Bankend Rig III, which would slightly overlap with the proposed development in views from those more elevated areas within the Merrick WLA. Combined with the overall distance the level of effect would remain Minor and not significant.

5.4.8.7 The combined cumulative effect of the Proposed Development and the baseline of existing and consented wind farm development, and other wind farm applications, would increase with Knockkippen extending horizontally into an area that is not overlapped by other wind farm development and Windy Standard I Repowering increasing the vertical extent of development visible from within the WLA. Other applications such as Quantans are located closer to the WLA. However, collectively these developments preserve the sense of separation that exists due to the Galloway Forest Park and Loch Doon, with all developments appearing beyond this area and 'remote' from the WLA boundary. The WLQ3 statement that ""*Human elements are widely visible from the tops and outermost slopes, but lower-lying areas have a much stronger sense of remoteness*" would remain true and whilst wind farm development be clearly visible in some cases, the overall sense of sanctuary and remoteness would remain strong. The magnitude of change would increase to Low-Very Low and the level of effect would be **Moderate to Minor and not** significant. The contribution of the proposed development would be Minor and not significant.

5.4.8.8 To conclude, the proposed development would blend within the existing and consented pattern of wind energy development and would not significantly affect any of the WLQs, including WLQ3 and its associated perceptual responses of *"sanctuary"* and *"remoteness"*.

5.4.8.9 A summary of the assessment is provided in Table 5.4.2, below. This assessment is distinct from the LVIA, and the detailed viewpoint assessment which is reported in Chapter 5 and Technical Appendix 5.2, Viewpoint Analysis.

**Table 5.4.2: Summary of Merrick Wild Land Area Assessment for WLQ3**

| Wild Land Area/ Quality | Sensitivity | Magnitude | Level of Effect | Significance |
|---|---|---|---|---|
| **WLQ3:** *"Human elements are widely visible form the tops of outermost slopes but lower-lying areas have a much stronger sense of remoteness"* | High | Very Low | Minor | Not significant |

| Cumulative Effects | Additional Magnitude | Additional Level of Effect | Combined Magnitude | Combined Level of Effect |
|---|---|---|---|---|
| Cumulative Effect: Scenario 1 (Existing + Consented Wind Farms and the proposed development) | Very Low | Minor | Very Low | Minor |
| Cumulative Effect: Scenario 2 (Existing + Consented Wind Farms + Applications and the proposed development) | Very Low | Minor | Very Low-Low | Moderate to Minor (due to multiple wind farms) |

## 5.4.9 Section 2: Night-time Wild Land Assessment

5.4.9.1 NS agreed that a night-time wild land assessment should be undertaken as part of the planning application. In their scoping response (dated 03/05/2022) they stated that

*"There is a complex scenario emerging around the Merrick WLA with proposals for very tall turbines currently in the planning system. Accordingly, for turbines of this heigh and at this distance (15 km) we would expect to see a Wild Land Impact Assessment included within the EIAR. This WLIA should also include effects of turbine lighting on the SQs of the WLA."*

5.4.9.2 As established earlier in the day-time assessment the proposed development is located wholly outwith the wild land area and would have no effect on the 'physical' wild land attributes. The proposed development may affect the 'perceptual responses' experienced from within the WLA. The degree to which these could be affected and whether they are significant requires to be established through a night-time wild land assessment.

### Methodology

5.4.9.3 The WLA night-time assessment methodology follows NS's *Technical Guidance: Assessing Impacts on Wild Land Areas* (September 2020) which has been adapted to apply to night-time conditions in combination with their most recent *Guidance on Aviation Lighting Impact Assessment* (November 2024) as set out in Technical Appendix 5.5.

5.4.9.4 A night-time landscape and visual assessment to accompany the LVIA is also contained in Technical Appendix 5.4. That assessment has considered the effects of the proposed development on the Galloway Forest Dark Sky Park, including its core zone and buffer area which lie within its boundary. Notably the core zone closely overlaps with the Merrick WLA and that assessment has focused on the perception of 'dark skies' and the visibility of the proposed lights as they would be experienced by people as part of the LVIA. In contrast the WLA night-time assessment has considered the effects of the proposed, visible aviation warning lights on the WLQs within the Merrick WLA.

5.4.9.5 The WLA night-time assessment is not a technical lighting impact assessment based on quantitative measurement of light levels, rather the assessment relies on professional judgement of what the human eye can reasonably perceive. The assessment has been supported by other night-time viewpoints (outwith the WLA) and access to ZTVs and wirelines from the Awful Hand Ridge and the Merrick summit. As with the night-time landscape and visual assessment (Technical Appendix 5.5), the sensitivity of the receptor to the proposed development (aviation warning lights) and the magnitude of change are combined to determine the level of effect likely to result from the aviation warning lights.

### Summary of Proposed Aviation Lighting Strategy

5.4.9.6 The following has been extracted from Technical Appendix 5.5 and sets out the proposed Lighting Strategy which has been approved by the CAA under the provisions of the Air Navigation Order (ANO) Article 222 section 6 as follows:

- "*Medium intensity, steady red (2000) lights fitted to the nacelles of five turbines (T1, T4, T5, T9, and T10);*
- *a second 2000 candela light on the nacelles of the above turbines to act as alternate in the event of a failure of the main light (note that both lights should not be lit at the same time);*
- *lights capable of being dimmed to 10% of peak intensity when the lowest visibility (as measured at suitable points around the wind farm by visibility measuring devices) exceeds 5 km*".

5.4.9.7 The CAA confirms that mid-tower lights are not required. Notably the CAA approval does not refer to angle intensity mitigation which is a matter for the developer and the planning authority as set out in Technical Appendix 5.4.

## 5.4.10 Step 1 – Study Area and Scope of the Assessment

5.4.10.1 The WLA night-time assessment study area includes the northern part of the Merrick WLA, including the Awful Hand Ridge and the Merrick summit within 20 km of the proposed development.

### Night-time ZTV Analysis

5.4.10.2 The WLA night-time assessment is supported by ZTV plots that illustrate the areas from where in theory, the aviation warning lights would be visible as follows:

- **Figure 5.4.c:** Aviation Lighting (Hub Height) ZTV with Viewpoints

  Provides a hub height ZTV of the five lit turbines within 20km. The hub height ZTV coverage in the Merrick WLA includes northeast facing hill slopes and summits on, and to the east of the Awful Hand Ridge, including Shalloch on Minnoch and Merrick. The hub height ZTV (Figure 5.4c) indicates fragmented ZTV coverage of the WLA.

- **Figure 5.4.d** (**Pages 1-2**): ZTV of Aviation Lighting Angle Intensity Mitigation

  Provides a light intensity ZTV for both the 2000 cd and 200 cd scenarios across the study area, illustrated at 15 km and 20 km radius. It indicates where the lit turbines would be theoretically visible (subject to the screening of landform, buildings and vegetation) and the light intensity. The areas of lowest light intensity correspond with the low-lying areas along the Doon Valley to the west and areas along the B741 to the north of the proposed development. These areas coincide with the majority of the receptors within settlements / residential properties and on roads. Conversely hill summits (the closest being to the south and east) would experience the greatest light intensity.

- **Figure 5.4.e** (**Pages 1-3**): Cumulative night-time ZTV with Viewpoints

  Provides a cumulative ZTV for other lit turbines associated with consented wind farms and other wind farm applications within 15 km of the proposed development as follows:

- **Figures 5.4e** (**Page 1**): illustrates the cumulative ZTVs including the following consented schemes:
  - Windy Standard Phase III to the south (12No. turbines lit);
  - Sanquhar II to the southeast (19No. turbines lit); and
  - Overhill to the north (7No. turbines lit).
  - None of the existing wind farms within 15km have visible aviation warning lights.
- **Figures 5.4e.2** (**Page 2**): illustrates the cumulative ZTVs including the following application schemes:
  - Windy Standard Repower to the south (5No. turbines lit);
  - Quantans to the south (5No. turbines lit);
  - Knockkippen to the northwest (7No. turbines lit); and
  - Scienteuch to the northwest (8No. turbines lit).
- **Figures 5.4e** (**Page 3**): **illustrates** the cumulative ZTV including the following application schemes:
  - Euchanhead to the southeast (all 21No. turbines lit);
  - Lorg Variation to the southeast (5No. turbines lit);
  - Carrick to the north (all 13No. turbines lit); and
  - Knockcronal to the north (6No. turbines lit).

5.4.10.3 The ZTVs do not take account of the screening effects of buildings, localised landform, and vegetation. As a result, there may be roads, tracks, and footpaths within the study area which, although shown as falling within the ZTV, are screened or filtered by built form and vegetation. It is also important to note that the light intensity ZTVs do not take account of distance or other factors such as atmospheric conditions, cloud obscuration or partial vegetation screening.

## 5.4.11 Step 2 – Baseline

5.4.11.1 The WLA Description of the Merrick WLA makes no mention of any wild land qualities at night, although the description does note that the WLA lies within the Galloway Forest Park Dark Sky Park and overlaps with the core zone (assessed in Technical Appendix 5.5). The proposed development itself is located beyond the buffer zone and boundary of the Galloway Forest Dark Sky Park. There are currently no existing wind farms with aviation warning lights within the study area. As noted above there are however three consented wind farms and applications for eight other wind farms with visible aviation warning lights proposed within the study area, all outwith the WLA and beyond the boundary of the Galloway Forest Dark Sky Park (including the core zone and buffer area).

### Wild Land Qualities

5.4.11.2 The proposed development is located outwith the WLA boundary, the scope of the wild land assessment is limited to the visibility of up to 5No. aviation warning lights associated with the proposed development and the consequential effect on the WLQs which are experienced from within the WLA as 'perceptual responses'.

5.4.11.3 The WLA sets out four WLQs. Each of these WLQs have been considered further to determine which are likely to be affected and consequently included within the WLA assessment:

- WLQ1: *"A relatively small wild land area but with a strong perception of naturalness, few human artefacts and little contemporary land use"*

  The WLA description refers to a number of physical features within the WLA which would not be visible or distinguishable at night and those areas of greatest naturalness, including the Silver Flowe are east of the Awful Hand Ridge are outwith the ZTV. Equally however, there are few lights discernible beyond the WLA boundary and because there are no obvious signs of human development (the Galloway Forest is not discernible for example) the sense of 'naturalness' at night, appears to extend beyond the WLA boundary to an extent, although distant lights from settlements are visible from the night-time assessment. The proposed development would not therefore affect the sense of naturalness within the WLA and consequently this WLQ has been excluded from further assessment.

- WLQ2: *"A wild land area that contrasts with the adjacent Forest Park, especially in terms of human activity"*

  The WLA states *"There is a noticeable difference in terms of human activity between the WLA and the surrounding parts of the Forest Park"*. At night, levels of recreational use within the Galloway Forest are likely to be very low reducing this contrast. Lights associated with the proposed development could be interpreted as a 'contrast' between the WLA and land use beyond the Galloway Forest, which in turn could extend the perceived 'reach' or influence of the WLA at night, beyond that which may be experienced during the day when the forestry is clearly visible. Therefore, the overall perception of this WLQ at night would be difficult to discern and it has been excluded from further assessment.

- WLQ3: *"Human elements are widely visible from the tops and outermost slopes, but lower-lying areas have a much stronger sense of remoteness."*

5.4.11.4 The WLA Description considers some wind farms, viewed during the daytime are

"*too distant to impose noticeably upon the wild land qualities, they appear as obvious human artefacts and some to the west are sufficiently close or extensive to be clearly visible, so reducing the sense of sanctuary."*

In a similar regard it may be considered that visible aviation warning lights would also be seen from the upper slopes and summits within the WLA at night.

5.4.11.5 Therefore, the WLIA should assess whether the aviation warning lights associated with the proposed development would be *"sufficiently close or extensive"* as to significantly affect the WLQ and perceptual responses (sense of *"sanctuary"* and *"remoteness"*). The lower-lying areas within the WLA referred to in the WLA description are located to the west and south of the Awful Hand Ridge and therefore would be unaffected by the proposed development (due to intervening topography).

- WLQ4: *"A rugged landscape that provides a surprisingly high degree of physical challenge."*

  Activity associated with 'physical challenge' would not occur during the night and the perceptual responses to this landscape, referred to in the WLA Description as the "*awe inspiring"* topography ("*more akin to a Highland landscape, but within a lowland context"*) and the strong *"sense of remoteness and sanctuary"* in response to the physical challenge required to reach parts of the WLA would be unaffected by the proposed development at night. For the reasons outlines above, this WLQ has been excluded from further assessment.

5.4.11.6 Based on the preceding analysis, the wild land assessment has assessed the effects of the proposed development on WLQ3, excluding WLQ1, 2 and 4.

## 5.4.12 Step 3 – Sensitivity

5.4.12.1 WLQ3: *"Human elements are widely visible from the tops and outermost slopes, but lower-lying areas have a much stronger sense of remoteness"*

5.4.12.2 The NatureScot *Technical Guidance: Assessing Impacts on Wild Land Areas* (September 2020) advises that WLAs are of national importance and a high value is accorded in this assessment.

5.4.12.3 WLQ3 confirms that the perceptual qualities of "*sanctuary"* and *"remoteness"* have been reduced or diminished during the day time by the surrounding Galloway Forest and some wind farm developments. Although there is visibility of other distant lights from roads and settlements the perceptual qualities of "*sanctuary"* and *"remoteness"* however are not diminished at night, and it can be assumed that they would remain strong as indicated by site visits. The susceptibility is therefore assessed as high.

5.4.12.4 Therefore a *High* sensitivity has been assessed for WLQ3.

## 5.4.13 Steps 4 and 5 – Assessment of Effects

5.4.13.1 Although the Galloway Forest, indicates the edge of the WLA boundary is not discernible at night, and up to three of the proposed 200 cd aviation warning lights would be visible in the distance, far beyond the immediate area of the WLA. Viewing from the Awful Hand Ridge and the Merrick summit these lights would appear in the context of lights from settlement at Bellsbank and potentially Dalmellington to the north of Loch Doon. The visible aviation warning lights would appear at between approximately 15-22km distance as small points of light close to the horizon. The scale of these lights would not relate to the scale of the proposed development seen during the day, appearing much smaller. The sense of "*sanctuary"* and *"remoteness"* would remain strong, and the magnitude is assessed as Very Low.

5.4.13.2 To conclude, the level of effect on WLQ 3 and the sense of "*sanctuary"* and *"remoteness"* as experienced from within the Merrick WLA would be Minor and not significant. The nature of this effect would be long term (reversable) direct, cumulative and neutral.

### Cumulative Effects: Scenario 1 – Existing and Consented Wind Farms

5.4.13.3 Cumulatively, the additional effect of adding the proposed development to the baseline of the existing and consented wind development would be **Minor** and not significant.

5.4.13.4 The combined cumulative effect of the proposed development and the baseline of the consented Windy Standard Phase III, Sanquhar II and Overhill would increase the total number of lights to 41No (including the three which would be visible from the proposed development). However, these lights would be spread across a wide area and seen well beyond 15km distance such that they would preserve the sense of "*sanctuary"* and *"remoteness"* experienced from within the WLA (Very Low magnitude). The level of effect therefore would remain as Minor and not significant.

### Cumulative Effects: Scenario 2 – Existing and Consented Wind Farms and Applications

5.4.13.5 Cumulatively, the additional effect of adding the proposed development to the baseline consented wind farm development would remain **Minor** and not significant.

5.4.13.6 Further aviation warning lights could be theoretically visible from the Awful Hand Ridge and the Merrick summit as a result of the following wind farm applications:

- Windy Standard Repower to the south (5No. turbines lit);
- Knockkippen to the northwest (7No. turbines lit); and
- Scienteuch to the northwest (8No. turbines lit).
- Carrick to the north (all 13No. turbines lit); and
- Knockcronal to the north (6No. turbines lit).

5.4.13.7 The combined cumulative effect of the Proposed Development and the baseline of existing and consented wind farm development, and other wind farm applications, would increase with some of the other applications introducing lights into areas that are currently dark and do not align with other existing light sources. Others would bring light sources closer to the boundary of the WLA and may consequently affect the sense of separation sanctuary and remoteness. The magnitude of change, however, would increase to Low and the level of effect would be **Moderate** and has been assumed as significant on a precautionary basis. The contribution of the proposed development, however, would remain Minor and not significant.

5.4.13.8 The wind farm developments of Quantans, Euchanhead and Lorg Variation are likely to have limited (non-significant) contribution to the cumulative effects due to more limited ZTV coverage and/or greater intervening distance. A summary of the assessment is provided in Table 5.4.3, below.

Table 5.4.3: Summary of Night-time Merrick Wild Land Area Assessment

| Wild Land Area/ Quality | Sensitivity | Magnitude | Level of Effect | Significance |
|---|---|---|---|---|
| **WLQ3:** *"Human elements are widely visible form the tops of outermost slopes but lower-lying areas have a much stronger sense of remoteness"* | | | | |
| **200 cd Intensity** | High | Very Low | Minor | Not significant |
| **Cumulative Effects (200 cd)** | **Additional Magnitude** | **Additional Level of Effect** | **Combined Magnitude** | **Combined Level of Effect** |
| Cumulative Effect: Scenario 1 (Existing + Consented Wind Farms and the proposed development) | Very Low | Minor | Very Low | Minor |
| Cumulative Effect: Scenario 2 (Existing + Consented Wind Farms + Applications and the proposed development) | Very Low | Minor | Low | **Moderate** (due to multiple wind farms) |