Design and Access Statement

Scoop Hill Community Wind Farm

ADDITIONAL INFORMATION

JUNE 2023

open
optimised environments
PART OF SLR

Contents

community windpower

Figures

Note: All plan and visualisation graphics shown within this report are included for illustrative purposes only. Refer to full scale versions accompanying this submission.

1. Introduction

Baseline Photography: Viewpoint 8: Southern Upland Way near Beattock Hill

Community Windpower Limited (CWL), on behalf of the applicant CWL Energy Limited, has applied to the Scottish Government for consent to build and operate the Scoop Hill Community Wind Farm in Dumfries and Galloway. The proposed wind farm is situated approximately 5 kilometres south east of the town of Moffat and will have an operational life of up to 40 years. The original Environmental Impact Assessment Report for the proposed development was submitted to the Energy Consents Unit (ECU) in November 2020.

The Application sought consent for 75 wind turbines and associated infrastructure including turbine foundations, crane hardstands, access tracks (new and existing), energy storage facilities, substation compounds, underground cabling, temporary construction compounds, and temporary borrow pits.

Since 2020, CWL has engaged with a range of consultees, interest groups and members of the public to understand their response to the proposals and, in addressing the feedback it has heard, CWL has modified the wind farm layout in an attempt to balance environmental and energy generation considerations. As a consequence, a number of turbines have been removed from the original layout. The reasons behind the turbine removal relate principally to the following considerations:

- **Landscape and visual effects;**
- **Cultural heritage considerations;**
- **Effects on residential visual amenity;**
- **Aviation lighting considerations;**
- **Ornithology findings.**

The proposed development layout now comprises 60 wind turbines, with a blade tip height ranging from 180m to 250m, as shown in the Site Layout Plan. Turbines have been removed from the west and southern sides of the wind farm, resulting in tangible mitigation across a range of receptors. The redesign of the layout has been subject to discussion over several months with officers from Dumfries & Galloway Council, to strike the right balance between the need for renewable energy generation and mitigation of the environmental effects that will inevitably arise from the operation of a large scale wind farm.

The purpose of this Design and Access Statement ('DAS') is to outline the process of design review that has been undertaken by CWL over recent months, in tandem with ongoing evaluation and consultation that has been carried out by its environmental consultants. It should be read in conjunction with the layout and design information presented in the updated Section 2 submitted as part of this Additional Information (AI). Section 3 of this AI submission also contains information in relation to the design evolution of the proposed development for pre-scoping.

This DAS outlines the issues, constraints and decision-making processes that have led to the design of the proposed development in its current form. The DAS is a supporting document to the EIAR and accompanies the submission of Additional Information which updates the EIAR findings, following the layout changes.

The DAS describes the iterative design process of the proposed development, including the design objectives that were formulated at the start of the design process and the alternative turbine layouts that have been considered throughout the process in response to environmental and commercial considerations. The DAS has an important role, not only in setting out the design principles on which the proposed development is based but also in describing and illustrating the appropriateness of the proposed development within the Dumfries & Galloway landscape.

2. Planning Policy Context

National Planning Framework 4

Scottish Government
Riaghaltas na h-Alba

Since the original Planning Statement was submitted in November 2020 the planning policy framework has changed significantly, in particular with National Planning Framework 4 (NPF4) which was formally adopted in February 2023, the publication of the new Onshore Wind Policy Statement (December 2022) (OWPS) and the Draft Energy Strategy and Just Transition Plan (January 2023).

The Planning Statement Update, submitted alongside this AI, builds upon the appraisal as set out in the original Planning Statement, addresses these new policy documents and provides an assessment of the proposed development in terms of the changes made, against relevant new policy provisions.

The policy set out in NPF4 and the OWPS requires a rebalancing of the consenting of onshore wind developments in response to the challenges of tackling the climate and nature crises. Having regard to the weight to be ascribed to the nationally important benefits of the development it is considered that the benefits of the proposal clearly outweigh its adverse effects.

The proposed development, having an installed capacity of onshore wind of a minimum of 432 MW (and with 200 MW of BESS), substantially exceeds the minimum threshold set in NPF4 for a National Development and would therefore have national development status. The proposed development is therefore of national importance for the delivery of the national Spatial Strategy set out in NPF4.

For the consideration of wind energy development, Policy 11 'Energy' (page 53) is the lead policy. Policy 11's intent is set out as:

> ***"To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low carbon and zero emission technologies including hydrogen and carbon capture utilisation and storage."***

In terms of NPF4 Policy 11, it is expressly clear in that considering any identified impacts of developments, significant weight must be placed on its nationally important contribution to renewable energy generation and greenhouse gas emissions reduction targets.

The OWPS Foreword states that onshore wind has the ability to be deployed quickly, is good value for consumers and is also widely supported by the public. The document sets out an ambition to reach 20 gigawatts of installed onshore wind capacity in Scotland by 2030. This means that the Scottish Government's ambition is to increase the installed capacity of onshore wind in Scotland by a minimum amount equivalent to approximately 130% of the entire installed capacity of all current operational onshore wind farms in Scotland in a period of around eight years. At 4% of the capacity required to meet the 2030 target, the proposed development and its contribution must be considered in a strategic context against the sheer scale and urgency of the stated Scottish Government's position.

The up-to-date policy set out in NPF4 and the OWPS and the draft Energy Strategy being consulted upon provide strong and increased support for the grant of consent for the proposed development. With a grid connection in place for August 2025, the proposed development is eminently deliverable and would provide renewable generation in the near term and would make a valuable contribution to help Scotland and the UK attain net zero. In particular the proposed development would contribute substantially to the interim 2030 targets and that is a very important consideration for which substantial weight should be given.

3. Locational Considerations

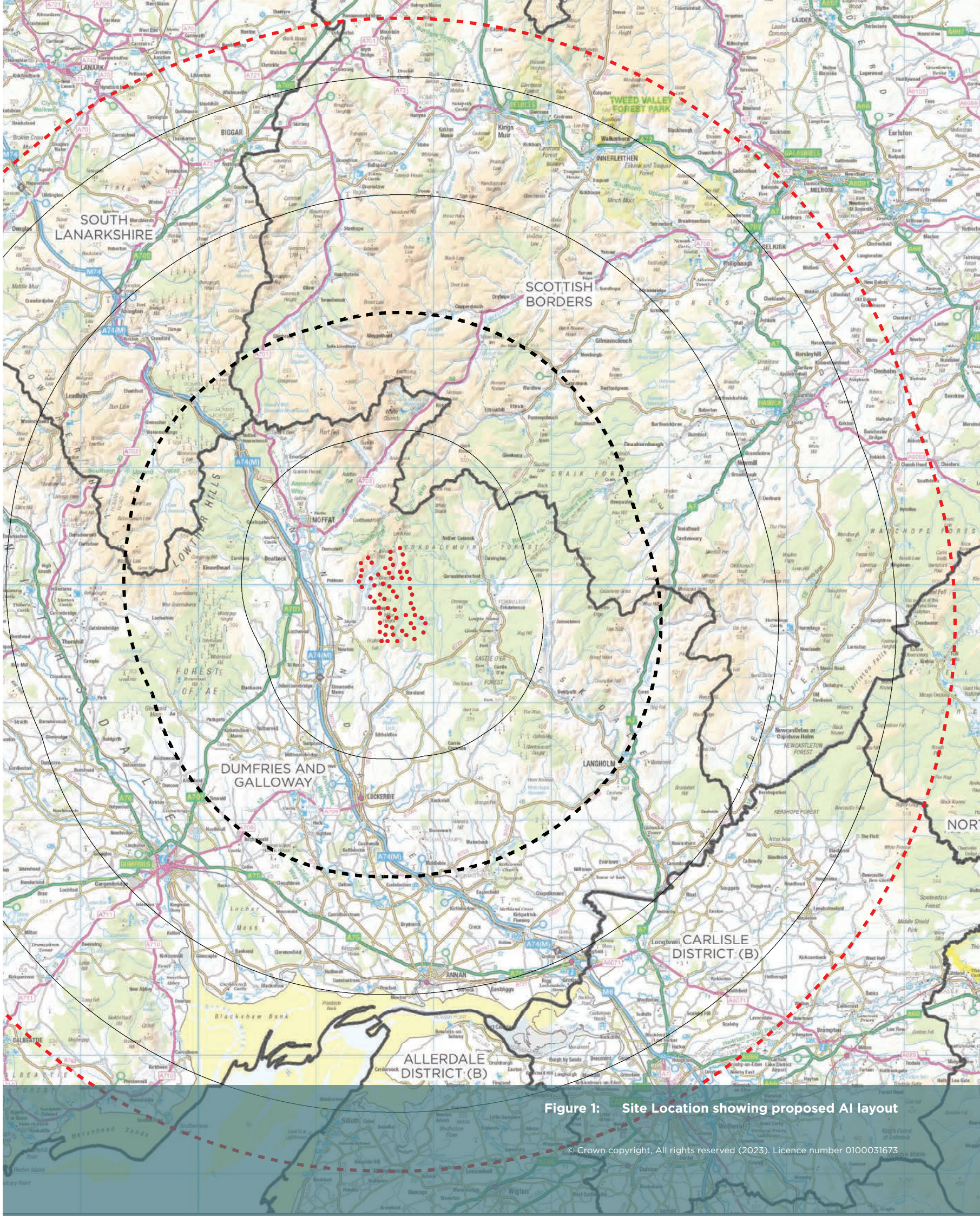


Figure 1: Site Location showing proposed AI layout

CWL was attracted to the Scoop Hill site for a number of reasons. The physical characteristics of the site demonstrate an inherent capability to accommodate the scale of wind turbine envisaged. If Scotland's objective to hit Net Zero by 2045 is to be achieved, then sites with the ability to accommodate the largest modern turbines will be needed. Using turbines of up to 250m in height will optimise the efficiency and output of the wind farm, while safeguarding technological advancement during the planning and procurement stages.

Scoop Hill sits within a part of the Southern Uplands which is large in scale and which is currently managed for intensive commercial forestry production.

The landscape character unit in which the wind turbine footprint is now substantially contained is the Southern Uplands with Forest – Eskdalemuir (LCT 19a (i)). To the south, a small number of turbines are positioned at the interface with the Dryfe Valley, and the Annandale Foothills, but these turbines occupy areas which display characteristics that are consistent with the adjoining uplands (refer to 'Landscape Character Types' Plan on following pages).

Dumfries & Galloway Council's Landscape Capacity Study (Supplementary Guidance – February 2020) (the Capacity Study) identifies the Southern Uplands with Forest – Eskdalemuir unit as having some of the best capacity in Dumfries & Galloway for turbines of the scale proposed. Section 3 of the Capacity Study sets out the Key Study Findings and Recommendations.

In terms of the scope for 'very large turbines' in the >150m tall category, the Capacity Study finds that:

"Following a review of visualisations from key viewpoints in the field and additional sensitivity assessment of a Very Large typology (turbines >150m), it is concluded that turbines towards 200m high to blade tip would be too large to accommodate as new developments in landscape and visual terms anywhere in Dumfries and Galloway apart from the Eskdalemuir unit of the Southern Uplands with Forest (19a). This is either because the receiving landscape is insufficiently extensive to minimise effects on adjacent smaller scale and/or more sensitive landscapes or because more extensive and large scale landscapes already accommodate many wind farms of varied heights and designs and cumulative effects would be a major constraint. The Eskdalemuir area of the Southern Uplands with Forest does not accommodate any existing wind energy development. It also extends into adjacent Scottish Borders in the Craik Forest area (an area with similar character and sensitivity) thus increasing the extensiveness of this landscape and the distance from more sensitive landscape and visual receptors."

Under the section titled 'Guidance for development', the Capacity Study concludes that *"There is some scope for the Very Large typology (turbines150m+) to be accommodated in this character type but only in the Eskdalemuir unit which is undeveloped, very extensive in scale and distant from more settled areas."*

Baseline Photography: Viewpoint 20: Queensbury, view toward Southern Uplands

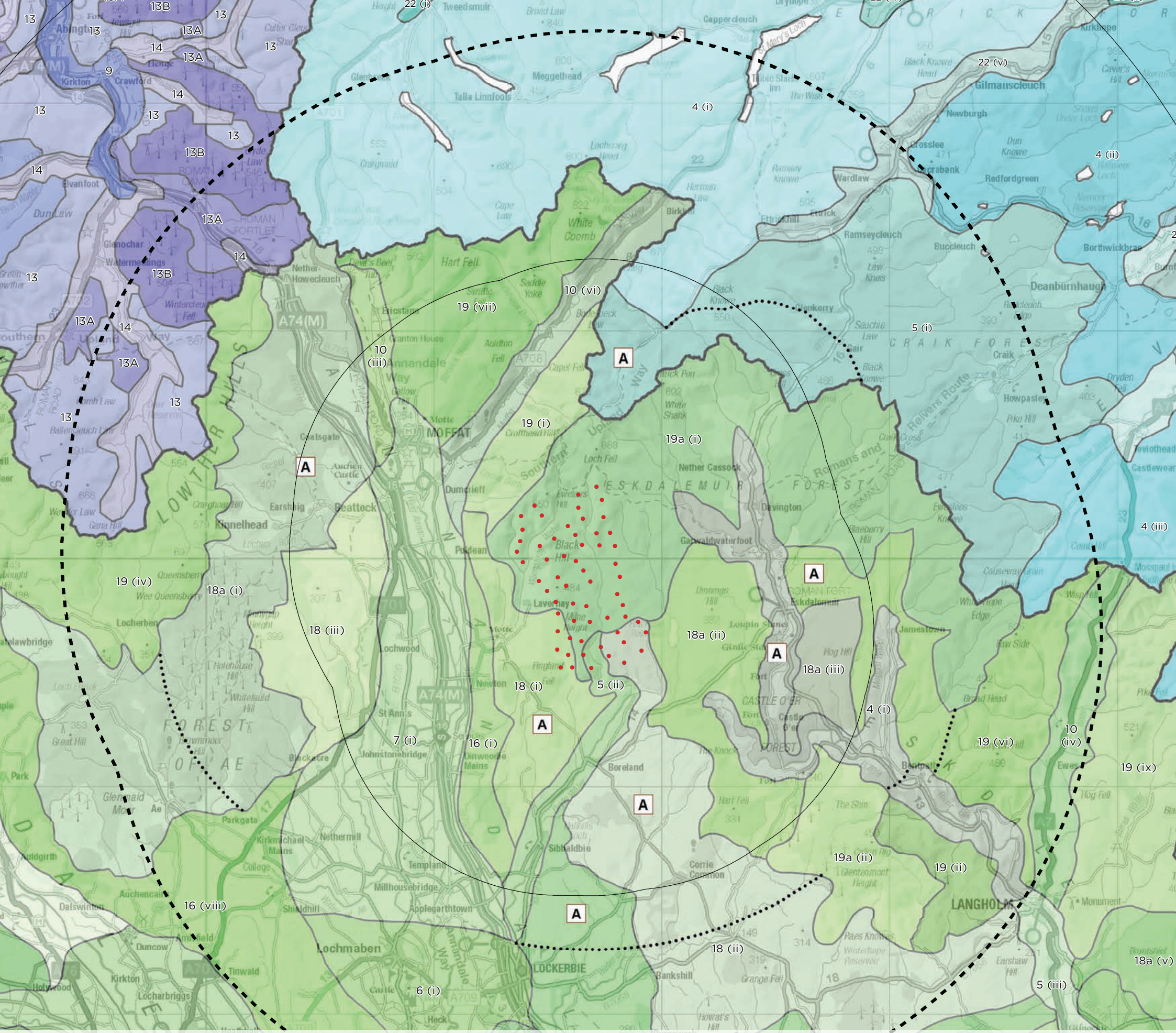


Figure 2: Landscape Character Types

Legend

Dumfries & Galloway Landscape Character

Source: Dumfries & Galloway Wind Farm Landscape Capacity Study (2017)

- 2 - Coastal Flats - Nith Solway Fringe & Inner Solway
- 4 (i) - Narrow Wooded River Valleys - Eskdale
- 4 (ii) - Narrow Wooded River Valleys - Kirtle Water
- 4 (iii) - Narrow Wooded River Valleys - Liddel Water
- 4 (iv) - Narrow Wooded River Valleys - Urr Water
- 5 (i) - Intimate Pastoral Valley - Cairn & Old Water
- 5 (ii) - Intimate Pastoral Valley - Dryfe
- 5 (iii) - Intimate Pastoral Valley - Pastoral Eskdale
- 6 (i) - Lower Dale (Valley) - Lower Annandale
- 6 (ii) - Lower Dale (Valley) - Lower Nithsdale
- 7 (i) - Middle Dale (Valley) - Mid Annandale
- 7 (ii) - Middle Dale (Valley) - Mid Eskdale
- 7 (iii) - Middle Dale (Valley) - Mid Nithsdale
- 7a - Middle Dale with Hills - Middle Dale with Hills
- 9 - Upper Dale (Valley) - Upper Nithsdale
- 10 (i) - Upland Glens - Castlefairn & Dalwhat
- 10 (ii) - Upland Glens - Dalveen
- 10 (iii) - Upland Glens - Evan
- 10 (iv) - Upland Glens - Ewes
- 10 (v) - Upland Glens - Mennock
- 10 (vi) - Upland Glens - Moffat
- 10 (vii) - Upland Glens - Scar
- 10 (viii) - Upland Glens - Shinnel
- 13 (i) - Drumlin Pastures - Deeside
- 13 (ii) - Drumlin Pastures - Milton
- 14 - Coastal Plateau - Coastal Plateau
- 15 - Flow Plateau - Annandale Flow Plateau
- 16 (i) - Upland Fringe - Annandale Fringe
- 16 (ii) - Upland Fringe - Annandale Fringe
- 16 (iii) - Upland Fringe - Cairn Fringe
- 16 (iv) - Upland Fringe - Corsock Fringe
- 16 (v) - Upland Fringe - Dunscore
- 16 (vi) - Upland Fringe - Liddesdale Fringe
- 16 (vii) - Upland Fringe - Terregles
- 16 (viii) - Upland Fringe - Torthorwald Fringe & Ae Fringe
- 16 (ix) - Upland Fringe - Wardlaw Ridge
- 18 (i) - Foothills - Annandale
- 18 (ii) - Foothills - Annandale
- 18 (iii) - Foothills - Beattock
- 18 (iv) - Foothills - Dalmacallan
- 18 (v) - Foothills - Keir
- 18 (vi) - Foothills - Nithsdale
- 18 (vii) - Foothills - Tynron
- 18a (i) - Foothills with Forest - Ae
- 18a (ii) - Foothills with Forest - Castle Oer
- 18a (iii) - Foothills with Forest - Eskdale
- 18a (iv) - Foothills with Forest - Stroan
- 18a (v) - Foothills with Forest - Tinnisburn
- 19 (i) - Southern Uplands - East Moffat
- 19 (ii) - Southern Uplands - Ewe Hill
- 19 (iii) - Southern Uplands - Lowthers
- 19 (iv) - Southern Uplands - Lowthers
- 19 (v) - Southern Uplands - Nithsdale
- 19 (vi) - Southern Uplands - North Langholm
- 19 (vii) - Southern Uplands - North Moffat
- 19 (viii) - Southern Uplands - North West Lowthers
- 19 (ix) - Southern Uplands - Tarras
- 19a (i) - Southern Uplands with Forest - Eskdalemuir
- 19a (ii) - Southern Uplands with Forest - Ewe Hill
- 19a (iii) - Southern Uplands with Forest - Ken
- 20 - Coastal Granite Uplands - Dalbeattie Coastal Granite

[A] Letter A denotes parts of LCT subject to detailed assessment in the LVIA

Scottish Borders Landscape Character

Source: Scottish Borders Updated Wind Energy Capacity Study (2016)

- 1 (ii) - Dissected Plateau Moorland - Moorfoot Plateau
- 3 (i) - Plateau Outliers - Eddleston / Lyne Interfluve
- 3 (ii) - Plateau Outliers - Broughton Heights
- 4 (i) - Southern Uplands with Scattered Forest - Broadlaw Group
- 4 (ii) - Southern Uplands with Scattered Forest - Dun Knowe Group
- 4 (iii) - Southern Uplands with Scattered Forest - Cauldcleuch Head Group
- 5 (i) - Southern Uplands Forest Covered - Craik
- 5 (ii) - Southern Uplands Forest Covered - Wauchope / Newcastleton
- 8 (iii) - Rolling Farmland - Minto Hills
- 8 (v) - Rolling Farmland - West Linton Synclinal Belt
- 10 (i) - Grassland with Rock Outcrops - Whitehaugh
- 10 (ii) - Grassland with Rock Outcrops - Midgard
- 10 (iii) - Grassland with Rock Outcrops - Allan Water
- 10 (iv) - Grassland with Rock Outcrops - Chisholme
- 11 (i) - Grassland with Hills - Bonchester / Dunion
- 11 (ii) - Grassland with Hills - Rubers Law
- 11 (iii) - Grassland with Hills - Eildon Hills
- 11 (v) - Grassland with Hills - Skirling
- 12 (ii) - Undulating Grassland - West Gala
- 22 (i) - Upland Valley with Pastoral Floor - Upper Tweed / Biggar Water
- 22 (ii) - Upland Valley with Pastoral Floor - Lyne Water
- 22 (iii) - Upland Valley with Pastoral Floor - Manor Water
- 22 (iv) - Upland Valley with Pastoral Floor - Upper Yarrow
- 22 (v) - Upland Valley with Pastoral Floor - Upper Ettrick
- 22 (vi) - Upland Valley with Pastoral Floor - Liddel Water
- 23 (ii) - Pastoral Upland Valley - Eddleston Water
- 25 (i) - Upland Valley with Woodland - Middle Tweed
- 25 (ii) - Upland Valley with Woodland - Lower Ettrick / Yarrow
- 26 (v) - Pastoral Upland Fringe Valley - Upper Teviot / Bothwick Water
- 27 - Upland Fringe Valley with Settlements - Tweed / Gala / Ettrick Confluence
- 28 (ii) - Wooded Upland Fringe Valley - Ale Water
- 28 (iv) - Wooded Upland Fringe Valley - Rule Water
- 28 (v) - Wooded Upland Fringe Valley - Slitrig Water
- 29 (ii) - Lowland Valley with Farmland - Lower Teviot

South Lanarkshire Landscape Character

Source: South Lanarkshire Landscape Capacity Study for Wind Energy (2016)

- 4 - Rolling Farmland
- 5 - Plateau Farmland
- 5A - Plateau Farmland Forestry
- 5B - Plateau Farmland Opencast Mining
- 6 - Plateau Moorland
- 6D - Plateau Moorland Opencast Mining
- 7 - Rolling Moorland Foothills
- 7A - Rolling Moorland Forestry
- 7B - Rolling Morrland Windfarm
- 8 - Upland River Valley
- 8A - Upland River Valley Incised
- 8B - Upland River Valley Opencast Mining
- 9 - Broad Valley Upland
- 10 - Foothills
- 10A - Foothills Forestry
- 11 - Prominent Isolated Hills
- 13 - Southern Uplands
- 13A - Southern Upland Forestry
- 13B - Southern Uplands Windfarm
- 13C - Southern Uplands Leadhills
- 14 - Upland Glen

In strategic siting terms, the Scoop Hill site is identified as the only location within Dumfries & Galloway where turbines of the height proposed are considered by the Council to be capable of being accommodated. This fundamentally underpins the suitability of the site in landscape and visual terms.

The site location has some sensitivities though and, as with most areas of upland in Scotland, the landscape and visual challenges arise towards the edges, where the large scale uplands meet the often smaller scale and, in some cases, more settled foothills and valley landscapes that lie around the fringes. This interface presents challenges for siting very large wind turbines, as they have the potential to result in greater levels of visual intrusion within the surrounding landscapes, alongside landscape character and scale conflicts, where juxtaposed with these more susceptible fringes. This has been a factor in the re-design of the Scoop Hill Community Wind Farm layout and is described in more detail in the following sections.

As part of the site identification process for this site a myriad of different considerations were taken into account by the Applicant. Further information regarding site selection criteria for this site can be found in Section 3 of the Additional Information.

4. Consultation Feedback

Moffat High Street

A wide range of consultees have been consulted by the ECU, and CWL, since the application was submitted, including, for example the following organisations:

- National Air Traffic Services (NATS)
- Glasgow, Prestwick and Edinburgh Airports
- Transport Scotland
- SEPA
- Scottish Rights of Way and Access Society
- Local Community Councils
- RSPB
- British Horse Society
- Scottish Forestry
- VisitScotland

In addition to the interests expressed by these and other organisations, CWL has actively engaged with officers from various departments of Dumfries & Galloway Council, along with statutory consultees including NatureScot and Historic Environment Scotland ('HES'). CWL has also undertaken community consultation and has engaged with various non-statutory groups on matters such as effects on dark skies.

The feedback and information received from these and other bodies has played an important role in the ongoing evaluation of the wind farm, and has increased awareness and expertise around its potential effects. In some cases, consultees have objected to the proposed development and CWL's iterative design process has sought to respond positively to valid concerns raised.

NatureScot responded to the application in July 2021, in respect of the 75 turbine proposal, and did not object to the Proposed Development. Its 'advice only' consultation response states that in relation to effects on the Talla-Hart Fell Wild Land Area, *"we do not consider the proposal raises natural heritage issues of national interest that would merit a formal objection from NatureScot."* NatureScot expressed some concern around the likely effects on landscape character including the fringe LCTs around the plateau in which the wind farm is located. It also flagged some concern around visual effects within 20km of the proposal.

NatureScot also advised that "We consider the scale of development is too large for the site, this leads to, in some views, intense overlapping of turbines, an overly dense complex appearance, and due to the developments horizontal spread would appear to overwhelm the skyline, particularly as appreciated from the south, south west, west and north west. The location of turbines in differing landscape character types additionally creates differing associations with the underlying landscape. The high levels of visibility across Annandale also illustrate the large scale, prominent nature of the development."

Whilst not amounting to an objection, CWL has undertaken the current design review process with these concerns in mind. The mitigation proposed (removal of 17 no. turbines) makes a significant change to the relationship between the wind turbines and the underlying landscape character around the fringe of the uplands. The overall footprint of the wind farm reduces discernibly too, and this helps to recede the turbines deeper into the uplands when viewed from Annandale and other surrounding areas to the "south, south west, west and north west".

CWL has listened to all of the feedback and, along with its specialist advisors, the design and assessment team has adjusted the proposed development to mitigate the potential for adverse environmental effects.

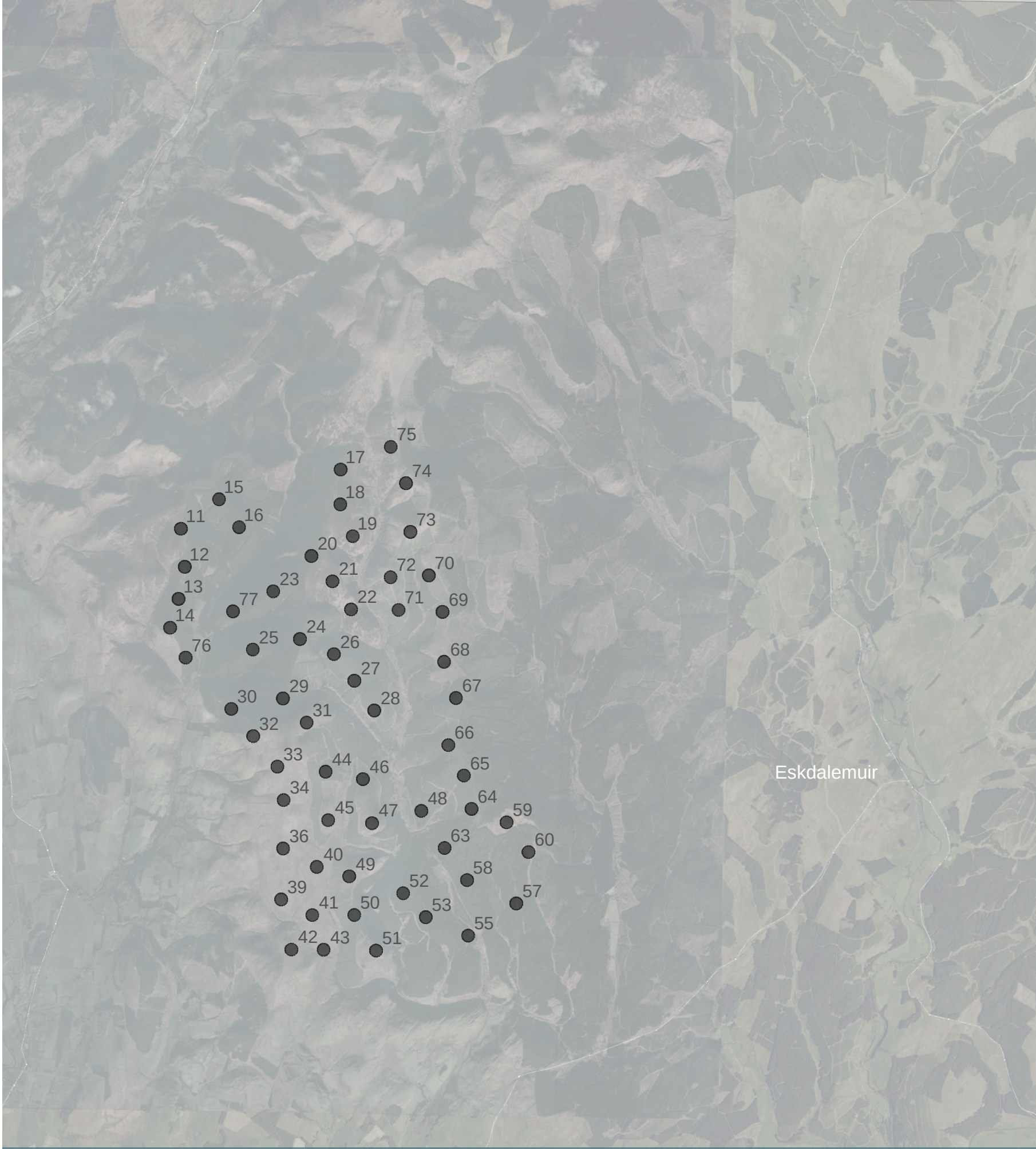
The main topics that have been raised through this process are listed below. This DAS explains how the wind farm layout design has been changed, to address comments from a number of consultees and organisations.

Key topics raised in consultation:

- landscape and visual effects
- effects on the setting of cultural heritage assets
- visual effects on residential amenity
- visual effects from aviation lighting mounted on the turbines
- ornithological impacts

The consultation undertaken with DGC has been a major driver behind the layout changes and has directly informed the Design Review process, which is explained in greater detail on page 15.

5. Layout Design Review



Final ‘Additional Information’ (AI) Layout

Layout design principles

The layout design review process was started by CWL in 2022, in response to feedback from a range of consultees concerning a variety of environmental impacts from the proposed development, as described in the previous section of this DAS. It has followed an iterative process considering how changes to the scheme might produce different environmental outcomes. Specialist advice has been sought by CWL in relation to landscape and visual, cultural heritage and ornithological effects, in addition to further advice on aviation lighting and planning considerations.

Section 3 of the Scoop Hill Community Wind Farm AI describes the approach taken in selecting the site and designing the original footprint and layout of the wind farm. Within the document there is a summary of the evolution of the wind farm design and this highlights a reduction in turbine numbers from 90 at the Pre-Scoping Stage, to 75 at the point of EIAR application, through to the reduction to 60 turbines following extensive consultation.

Section 6 of the 2020 EIAR sets out the LVIA for the Proposed Development and notes under the heading 'Mitigation':

The layout design of the proposed development is an important part of the EIA process and is a stage where a notable contribution can be made to the mitigation of potential landscape and visual effects, creating a wind farm which is appropriate for the landscape and visual environment of an area. The LVIA has been carried out in conjunction with the design iteration of the proposed development and has informed the final layout and design. Landscape and visual mitigation measures have been incorporated through the iterative design process in order to reduce potential adverse landscape and visual effects caused by the proposed development. This has included the removal of turbines and variation to turbine heights. The design process is described in Section 3: Site Selection, Design and Evolution of the EIAR.

Wind farm design engages expertise across all environmental disciplines and has to balance both commercial and environmental considerations. No one single discipline takes precedence, although CWL gives substantial consideration to the landscape and visual inputs, to try and achieve a viable development that is also designed well to fit within its site and wider context. Landscape and Visual is an inherently subjective topic, where reasoned professional opinion is applied, but which frequently results in different opinions between qualified assessors around individual impacts and their nature.

Following the submission of the EIAR, CWL have received clear advice from consultees on what they believe are the likely effects of the Proposed Development. Based on these comments CWL have been able to devise a set of principles, or drivers, to guide the AI design review process over the last 12 months. These are described below.

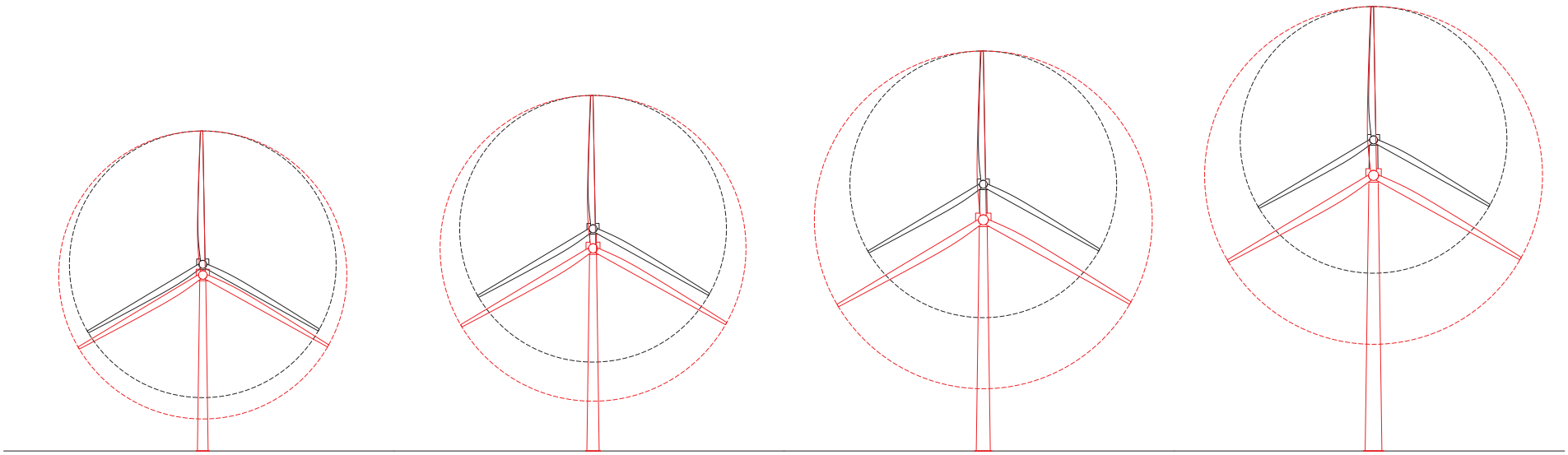
Layout Design Review Principles

- **To ensure that the design and layout of the turbines expresses the function of the proposed development as a wind farm as clearly as possible, by avoiding complexity and visual confusion (particularly from key viewpoints);**
- **To take account of relevant national, regional and local policy and guidance;**
- **To respond to the landscape and visual issues identified by statutory consultees through the process of consultation;**
- **To respond to the various other environmental and technical constraints identified through consultation, both within and around the site, including ornithology and cultural heritage matters;**
- **To maintain a close association between the proposed wind turbines and the upland characteristics present in the Southern Uplands with Forest – Eskdalemuir LCT;**
- **To avoid turbine outliers to maintain a compact turbine footprint which seeks to affect as narrow a field of view as possible;**
- **To avoid siting turbines where they would introduce undesirable scale comparisons with features in the smaller scale foothills and valley LCTs surrounding the uplands;**
- **To site turbines to minimise significant adverse visual effects on sensitive receptors, viewpoints and especially residential properties;**
- **To minimise the number and intensity of adverse visual impacts from visible aviation lighting attached to the turbines, through a compact design and with specialist aviation input.**

Consultation

CWL has undertaken consultation with Dumfries & Galloway Council throughout the layout design review process and has also separately consulted NatureScot on ornithological matters. Several design workshop meetings were held on Teams during the spring and summer of 2022 with planning and landscape officers of the Council (and attended by the Energy Consents Unit). Layout information and wirelines were shared in advance and constructive discussion examined the evolving mitigation proposals. D&GC undertook further site visits to consider proposed changes and provided feedback on landscape and visual matters which was incorporated into the design evolution process.

CWL has had meetings with NatureScot regarding their EIAR consultation and they have been made aware of the design changes to the Proposed Development. NatureScot has indicated that they were pleased to see that a design mitigation hierarchy had been applied and NatureScot will be reconsulted formally as part of the AI process. In the context of the design process, the purpose of the consultation process was to seek views on the potential turbine layout to help establish a preferred design solution which addresses the Council's concerns, particularly in relation to landscape and visual, residential (visual) amenity and cultural heritage considerations.



Turbine Type 1

Layout	Tip Height	Hub Height	Rotor Diameter
AI	180m	99m	162m
EIA	180m	105m	150m

Turbine Type 2

Layout	Tip Height	Hub Height	Rotor Diameter
AI	200m	114m	172m
EIA	200m	125m	150m

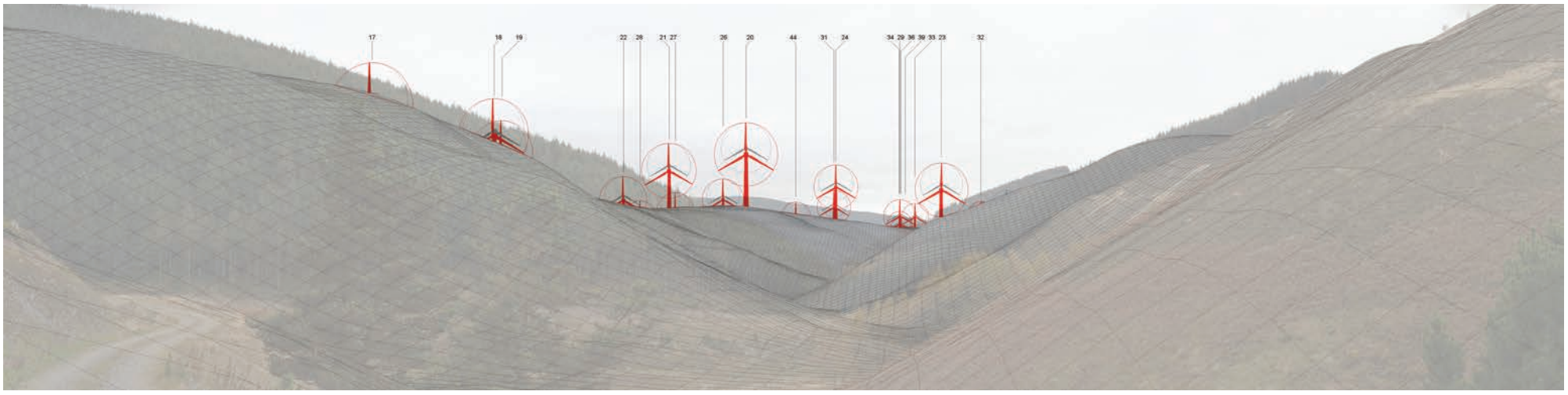
Turbine Type 3

Layout	Tip Height	Hub Height	Rotor Diameter
AI	225m	130m	190m
EIA	225m	150m	150m

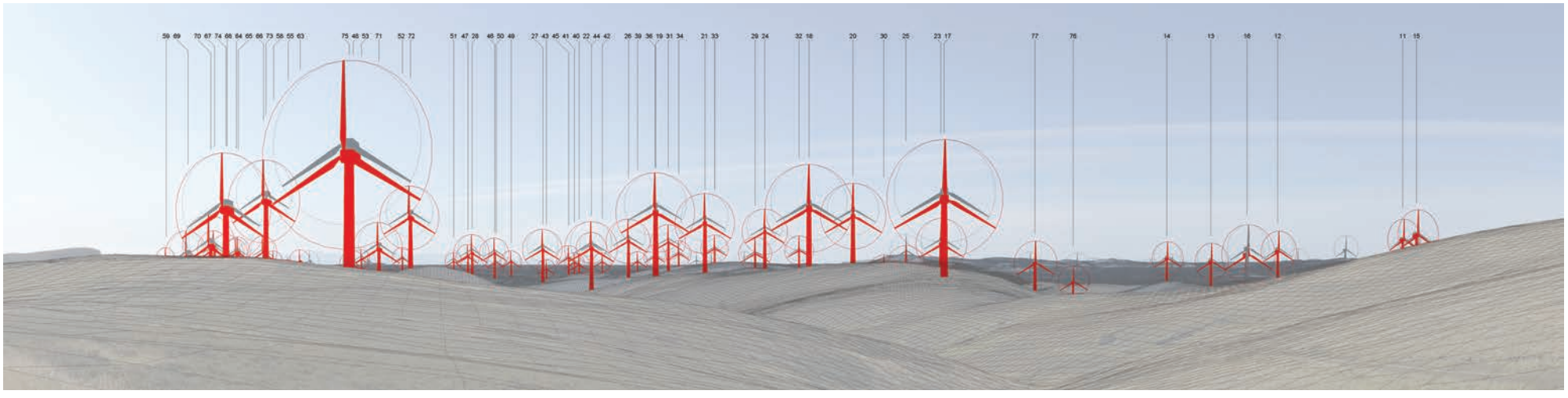
Turbine Type 4

Layout	Tip Height	Hub Height	Rotor Diameter
AI	250m	155m	190m
EIA	250m	175m	150m

Turbine Sizes



Viewpoint 1 Photowire illustrating turbine proportions: AI turbines in red, EIA turbines in grey.



Viewpoint 2 Photowire illustrating turbine proportions: AI turbines in red, EIA turbines in grey.

Figure 3: Turbine Types

Table 1: Indicative Turbine Proportions

Turbine Type	Layout	Tip Height	Hub Height	Rotor Diameter
1	AI	180m	99m	162m
	EIA	180m	105m	150m
2	AI	200m	114m	172m
	EIA	200m	125m	150m
3	AI	225m	130m	190m
	EIA	225m	150m	150m
4	AI	250m	155m	190m
	EIA	250m	175m	150m

Final Additional Information Design

The consultation and design review process has enabled CWL to evaluate commercial viability considerations alongside the layout refinement. Following the removal of seventeen turbines; the addition of 2 turbines and the adjustment to the tip heights of four other turbines, CWL is satisfied that the current proposal comprising 60 wind turbines achieves a good balance between environmental effects and commercial viability, whilst still providing significant benefits in relation to renewable energy generation targets and greenhouse gas emissions reduction targets, as well as also maximising the net economic benefits of the development. The revised layout is assessed through an AI submission which, amongst other elements, contains the following information:

- **Landscape and Visual Update, including Aviation Lighting and Cumulative Update**
- **Residential Visual Amenity Assessment**
- **Design and Access Statement**

DEVELOPMENT EXTENT

EIA Layout Extent

AI Layout Extent

Proposed Turbines

Turbines Removed

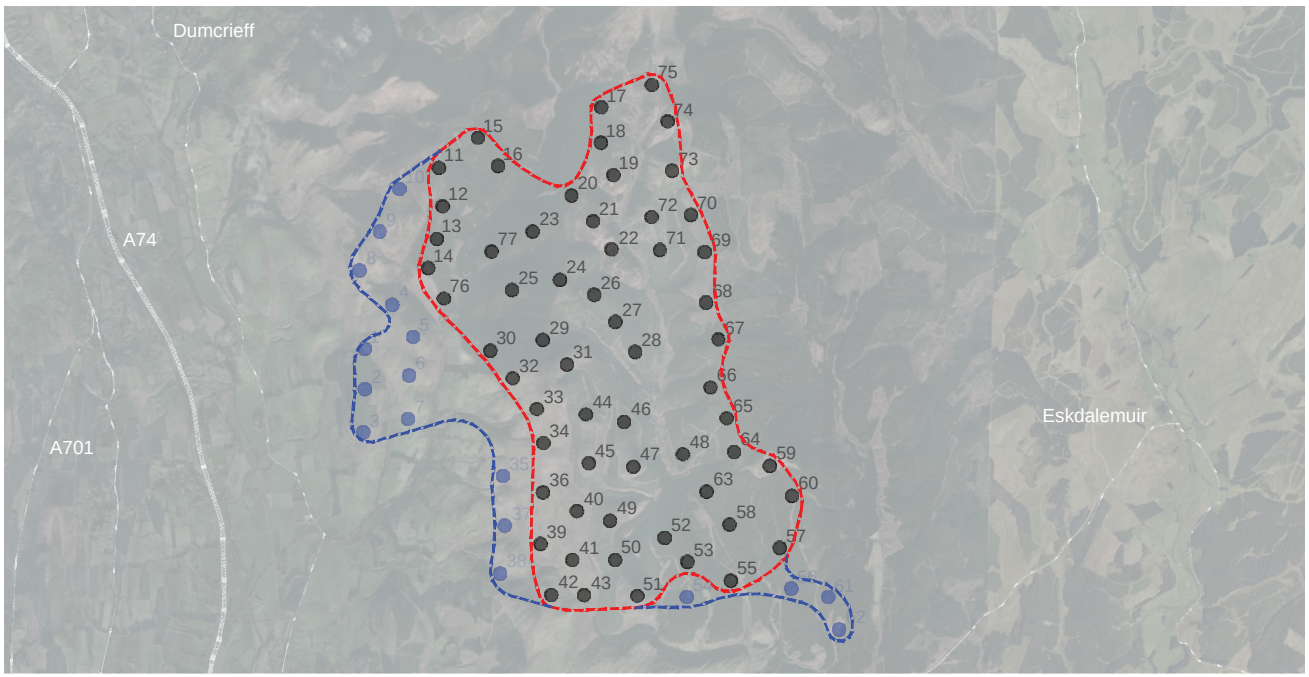


Figure 4: Layout Extent

TIMELINE: DESIGN EVOLUTION

NOVEMBER 2020

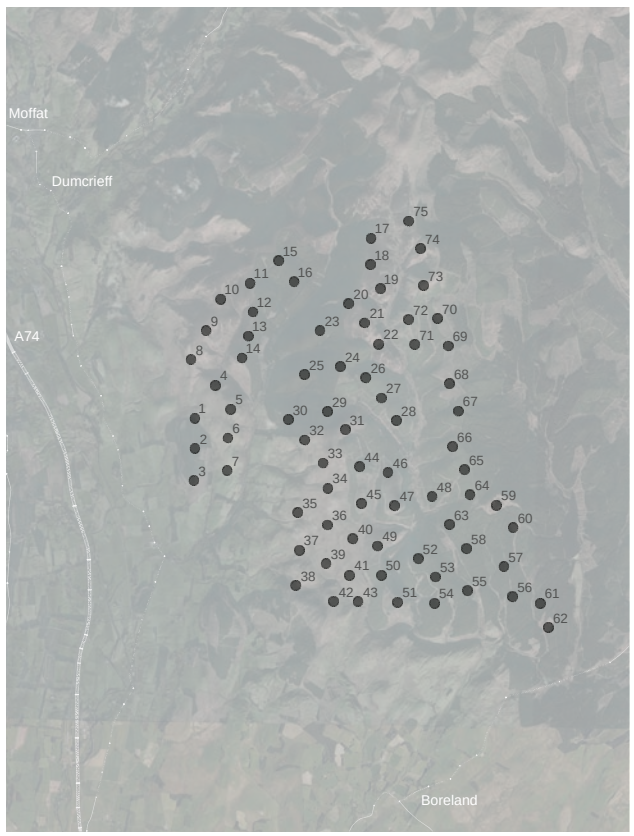
EIA Submission

Draft Layout Iteration

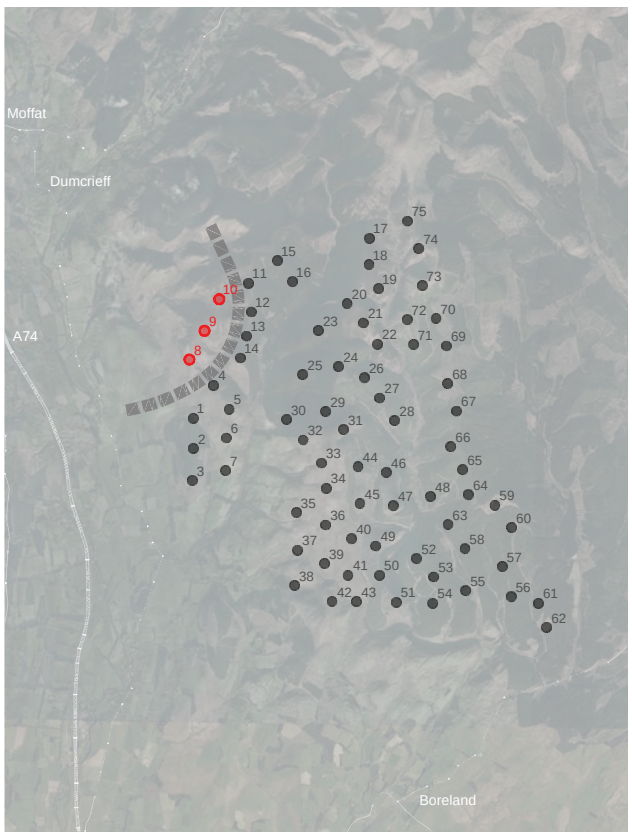
Turbines 8, 9, 10 removed from north western edge.

Draft Layout Iteration

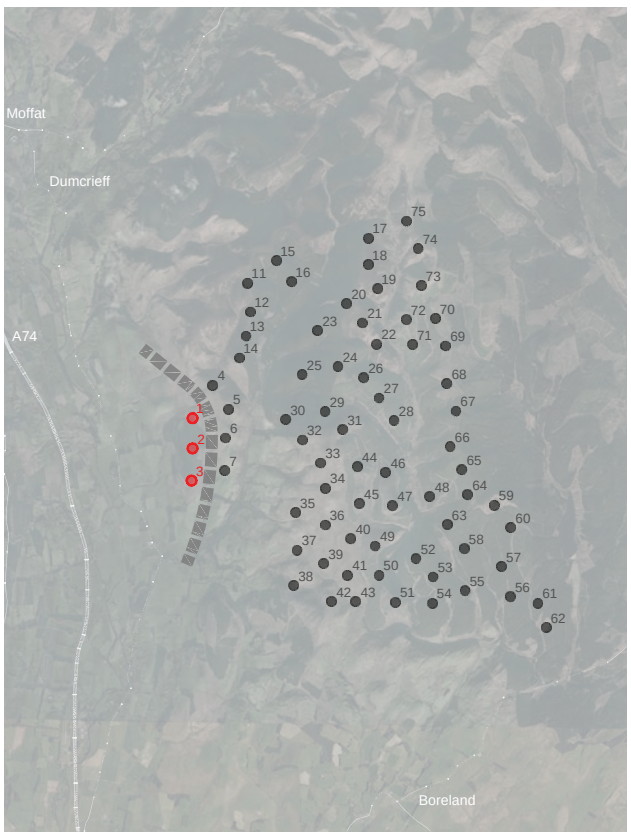
Turbines 1, 2, 3 removed from western edge.



75 Turbine Layout



72 Turbine Layout



69 Turbine Layout

Figure 5: Layout Evolution

JUNE 2022

Design Review 2 Submission

Turbines 4, 5, 6, 7 removed from western edge, turbines 76 and 77 added into internal area of forestry.

JUNE 2022

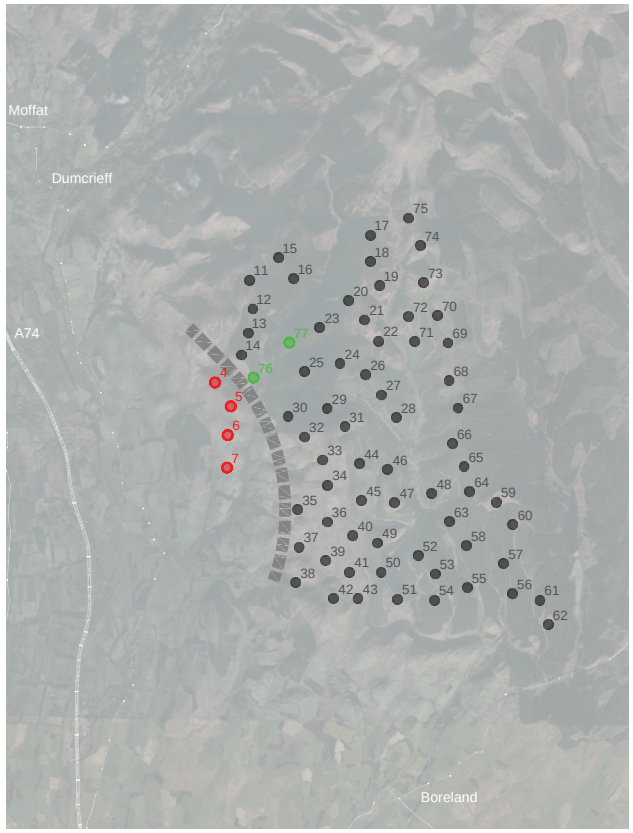
Draft layout iteration

Turbines 54, 56, 61, 62 removed from southern edge and tip height reduced to 180m for turbines 51, 53, 55, 57.

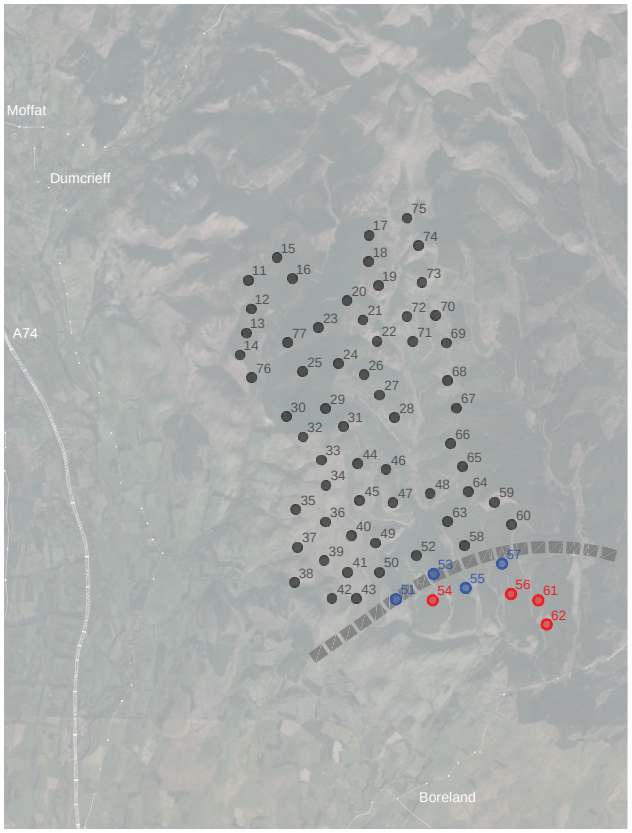
DECEMBER 2022

Additional Information Submission

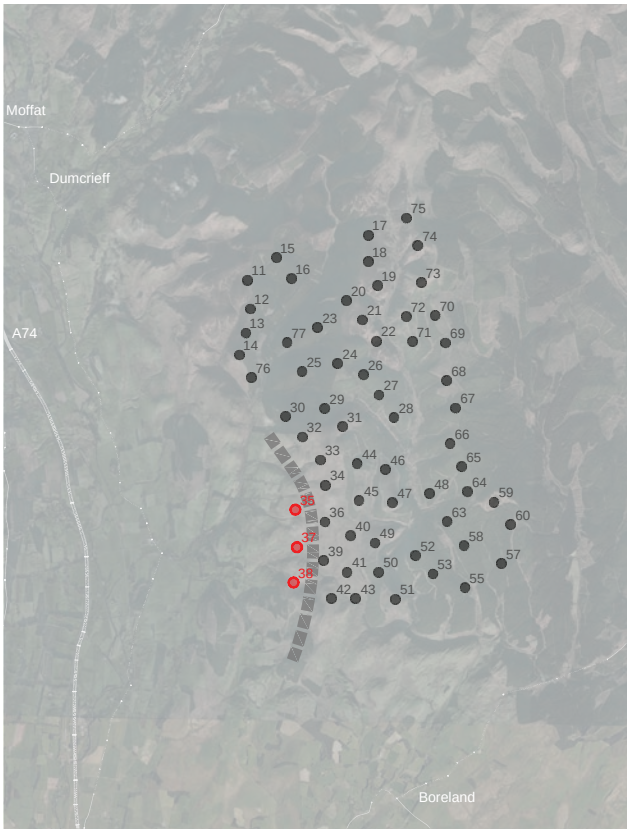
Turbines 35, 37, 38 removed from south western edge.



67 Turbine Layout



63 Turbine Layout



60 Turbine Layout

6. Landscape Character

Photography: Near Laverhay

The Scoop Hill Community Wind Farm is located in the Eskdalemuir unit of an upland landscape character type - Southern Uplands with Forest (LCT 19a (i)) - that has acknowledged capacity for large scale wind energy development.

Some concern has been expressed through consultation with Dumfries & Galloway Council in relation to the siting of turbines along the western and southern edges of the plateau LCT, where it transitions to smaller scale foothills and valley landscapes.

In particular, the Dryfe Water Valley - to the south of the uplands - forms an incised valley which transitions abruptly from the uplands near Boreland (LCT 5ii). Turbines in earlier iterations in this area presented some challenges in scale where they were seen in views from within the valley, perched on the upland escarpment. This included views from a small number of residential properties located in the upper parts of the Dryfe Water valley.

To the west of the site, a more gradual transition occurs between the plateau and the Annandale valley (LCT 7(i)), due to the presence of the foothills (LCT 18 (i)) which forms a stepped descent from higher ground to the valley and M74 corridor. Turbines located on the foothills in early layouts were prominent from Moffat and Annandale, with some conflicts of scale apparent. Visible aviation lighting on turbine hubs was a concern from some places in Annandale, including Moffat.

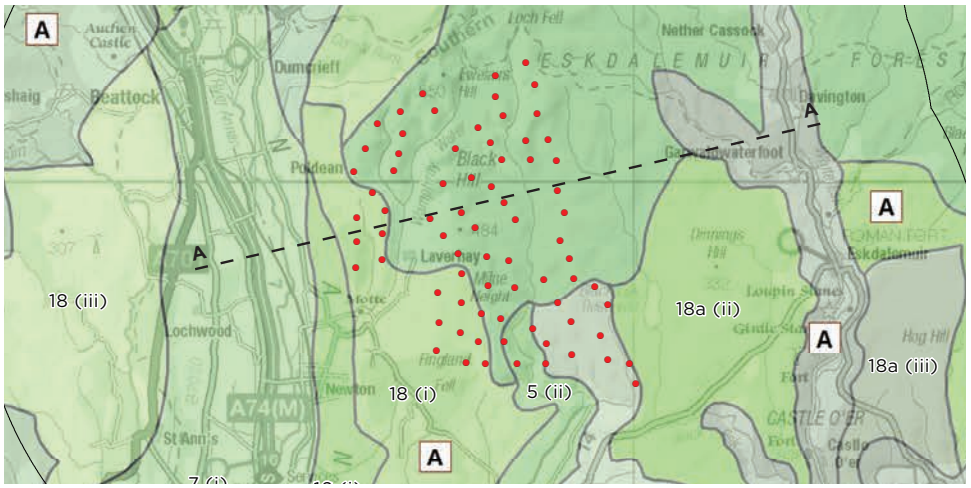
In addition to landscape concerns, these peripheral turbines also presented some challenges in relation to cultural heritage assets. The peripheral turbines to the west also coincided with ornithology interests and together these effects indicated a requirement to reconsider the layout design around the western and southern fringes of the site.

The main thrust of the design review process undertaken during the summer of 2022 has been to address concerns around these “outer edge” turbines in order to mitigate ornithology, landscape and visual, residential (visual) amenity and cultural heritage effects and consultee concerns, leaving a core of turbines within preferred LCT 19a Eskdalemuir Unit.

An iterative review of the project was instigated using Windfarm software to evaluate the potential for turbine removal, relocation and height reduction in order to mitigate adverse landscape and visual effects identified through the various consultations, whilst maintaining the commercial viability of the scheme. This work culminated in the following revisions to the layout, in sequence, over a period of 12 months.

- **Removal of turbines T8, T9 and T10 in the west of the scheme;**
- **Removal of turbines T1, T2, T3 in the north west of the scheme;**
- **Removal of turbines T4, T5, T6 and T7 in the west of the scheme;**
- **Addition of 2 no. turbines within forestry in centre of the wind farm (T76 and T77);**
- **Removal of turbines T54, T56, T61 and T62 and reduction in the height of turbines T51, T53, T55 and T57 down to 180m to tip, in the south/ south east; and**
- **Removal of turbines T35, T37 and T38 in the south west of the wind farm.**

EIA Layout



AI Layout

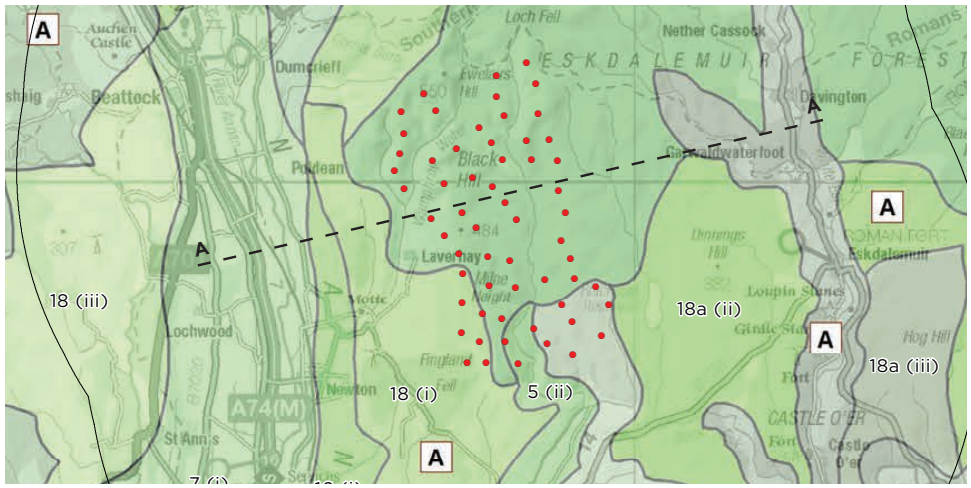
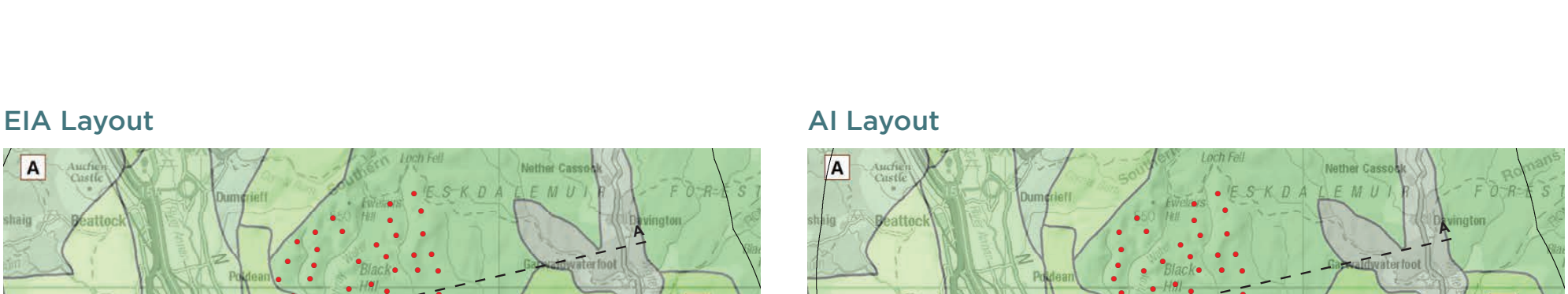
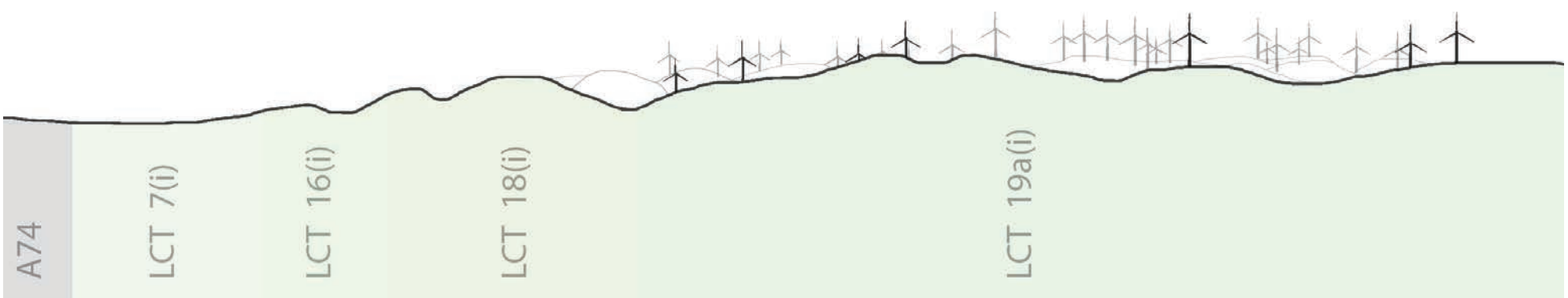


Figure 6: **Layout Comparison: Landscape Character Types**



Indicative Sectional Elevation A-A: EIA layout



Indicative Sectional Elevation A-A: AI Layout

Figure 7: **Indicative Sectional Elevation A-A**

Baseline Photography: Dryfe Water

Baseline Photography: Waterhead of Dryfe

Baseline Photography: Annandale Water Services, J16 A74(M)

The layout review secures the following benefits:

- **Visibility from Moffat (including from the Conservation Area), is substantially reduced, meaning that turbines are less prominent in relation to the foothill and valley edges above Annandale;**
- **Cultural/ built heritage concerns in relation to various assets in Moffat and at Dundoran Hill are fully addressed. Effects on the setting of Rangecastle Hill Fort are reduced;**
- **The number and prominence of visible aviation lights from Annandale and Moffat is substantially reduced;**
- **Turbines are set back from smaller scale and settled valley fringes, strengthening the perception that they are rooted in the upland plateau, away from the settled valley;**
- **Visual impacts on residential property and amenity in Sandyford, Boreland, Wamphray area, Annandale and Moffat are substantially reduced;**
- **Removal of T61/ T62 removes turbine 'outliers' near Sandyford and reinforces impression of wind farm being located within the more upland parts of the Foothills (LCT18 (ii));**
- **Removal of new access tracks that were required to access the deleted turbines.**
- **Removal of 2 borrow pits and the relocation of 3 borrow pits.**
- **NatureScot's ornithological concerns are addressed;**

The changes that arise with the removal of (net) 15 turbines bring some discernible benefits across a range of environmental considerations. In landscape and visual terms, it achieves a wind farm footprint that is substantially located within the upland plateau of the Southern Uplands, where the scale of development and size of wind turbines proposed can be accommodated, assisted by the extensive commercial plantation landcover which provides a simple context to the development.

Visibility of wind turbines will not be removed from within Annandale and the Dryfe Water valley, but it will be substantially reduced following removal of turbines along the fringes of the uplands. In views from these surrounding areas, the Scoop Hill Community Wind Farm will appear set back and contained within the uplands, where it will appear to be an appropriately scaled intervention in landscape character terms. It follows that the visual effects on people living in the foothills and surrounding farmland will reduce, as shown in the updated residential visual amenity assessment.

In overall terms, the Proposed Development will achieve a better 'fit' with its landscape and visual context.

7. Visual Amenity

Legend

- Proposed Turbine Location
- 10km Distance Radii
- 20km Local Study Area
- Settlement
- Motorway
- Primary Road
- A Road
- B Road
- Scenic Route
  - A - Borders Historic Route
  - B - Clyde Valley Tourist Route
  - C - Galloway Tourist Route
- Railway
- National Cycle Route
- Regional Cycle Route
- Core Path
- Long Distance Route
  - 2 - Annandale Way
  - 4 - Borders Abbeys Way
  - 5 - Cross Borders Drove Route
  - 12 - Roman Road
  - 13 - Romans and Reivers Route
  - 14 - Southern Upland Way

Figure 8: Visual Receptors

The Scoop Hill Community Wind Farm is a large scale wind farm development, utilising latest turbine technology to enhance energy efficiency. The turbine sizes proposed (ranging from 180m to 250m blade tip height) represent a scale that is now not uncommon in Scotland, and other schemes have already been consented in this height range, signalling the future direction of the technology.

This scale of development will inevitably lead to some significant localised visual change around the wind farm. A key objective of the design review process has been to reduce significant adverse visual effects identified in the LVIA through the removal and re-positioning of turbines, as well as the choice of individual turbine height.

In some areas around the wind farm, the design review changes have removed visibility of turbines altogether, although the extent of these is relatively small (see figure 10). From other areas, visibility of turbines has been substantially reduced, so that the residual visual effects are no longer considered to be significant in EIA terms. In other places the visual impact remains significant, but the removal of turbines has led to a more compact turbine array, affecting a narrower field of view, and which avoids the foothills and appears more firmly rooted in the upland plateau. While remaining significant, the outcome is an improved relationship between the wind turbines and their setting, which greatly improves the accommodation of the wind farm in visual terms.

The inherently large scale of the Southern Uplands, together with the blanket forestry cover across much of the site, provides an appropriately scaled context for the proposed development, when seen in views from areas around the wind farm, and especially in views from the north west; west; south west and south.

The improvements to the visual composition of the wind farm are especially apparent in views from the following places:

- **Views looking down Annandale - when descending from the Beef Tub on the A701 scenic route towards Moffat - where removal of the turbines in the foothills has reinforced the impression of a wind farm in the uplands;**
- **Views entering Moffat from the north and from within the town centre and Conservation Area, where wind turbines on the upland fringes are much less prominent;**
- **From within Annandale, to the south of Moffat, where a perception of wind turbines creeping out of the uplands has been resolved by setting the wind farm further back into the uplands;**
- **In the Wamphray Glen area, where a sense of encirclement has been resolved through the removal of turbines within the surrounding fringes to the uplands;**
- **From a number of residential properties in the rural area between the M74 corridor and the foothills extending north from Wamphraygate, where visibility has in places been removed altogether, while in other locations greatly reduced, as shown in the RVAA wirelines;**
- **Along the Dryfe Water valley where the field of view affected has been dramatically reduced through turbine removal and height reduction;**
- **At Boreland where the closest and most prominent turbines have been removed and the field of view narrowed discernibly;**
- **At Sandyford where visibility has been largely removed.**

A selection of wirelines and photomontages have been included below to demonstrate the improvements to the visual composition of the wind farm that has been achieved through the design review process.

EIA LAYOUT

Legend

- Proposed Turbine Location
- 10km Distance Radii
- 20km Local Study Area
- 45km Study Area

Blade Tip Zone of Theoretical Visibility

No. of Theoretically Visible Turbines

- 1 - 15
- 16 - 30
- 31 - 45
- 46 - 60
- 61 - 72

- Viewpoint Location

1 - Southern Upland Way near Gateshaw Rig
2 - Romans and Reivers Route
3 - Sandyford
4 - Waterhead of Dryfe
5 - Rangecastle Hill
6 - Boreland Church
7 - Annandale Water Services, J16 A74(M)
8 - Southern Upland Way near Beattock Hill
9 - Moffat High Street
10 - Moffat A701 on northern edge
11 - A701 north of Moffat
12 - A701 near Devil's Beef Tub
13 - Ettrick Pen
14 - B709 north of Eskdalemuir
15 - Castle O'er Forest Hill Fort
16 - Corrie Common
17 - Burnswark Hill Fort
18 - A709 west of Lockerbie (bridge over River Annan)
19 - B7020 north of Lochmaben
20 - Queensberry
21 - Hart Fell
22 - Malcolm Monument, Whita Hill, Langholm

Figure 9: EIA Blade Tip ZTV with Viewpoints

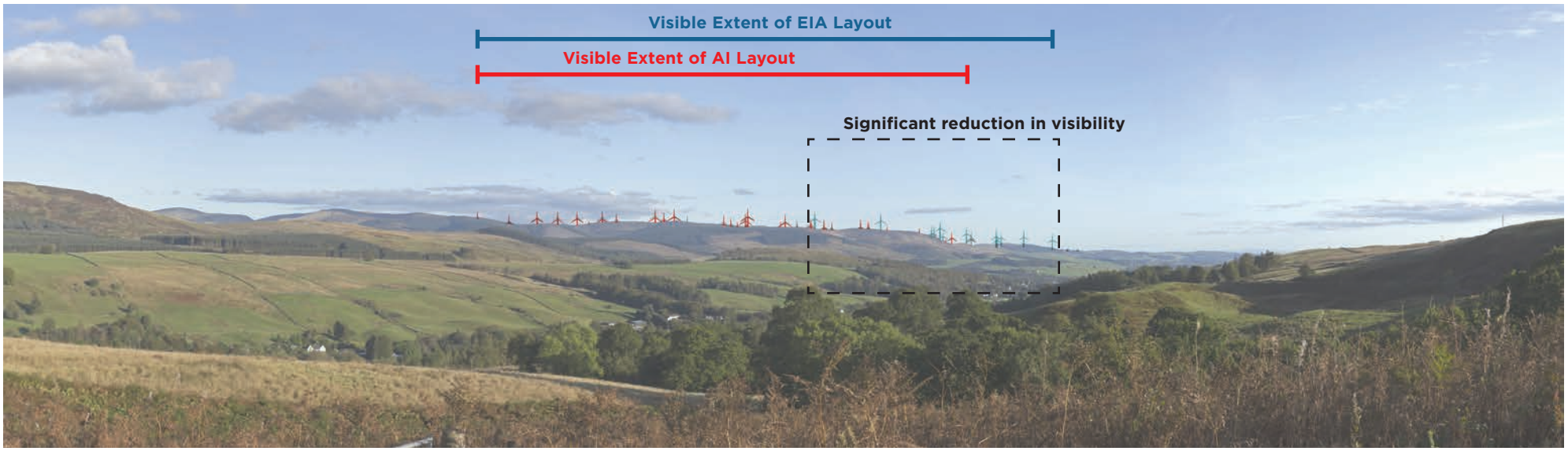
AI LAYOUT

Legend

- Proposed Turbine Location
- 10km Distance Radii
- 20km Local Study Area
- 45km Study Area
- ZTV Area Lost with the Removal of 15 Turbines

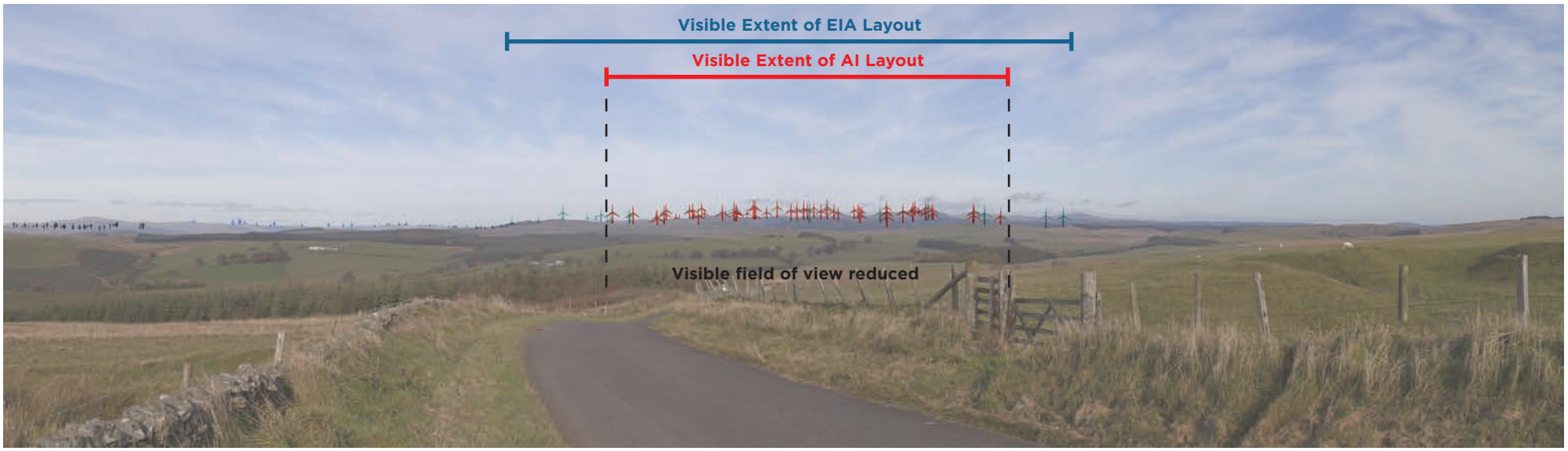
The blade tip ZTV for the EIA Layout is shown here alongside a comparative ZTV for the AI Layout, which highlights where theoretical visibility has been removed from the study area as a result of the layout changes.

Figure 10: AI Layout: Reduced Visibility



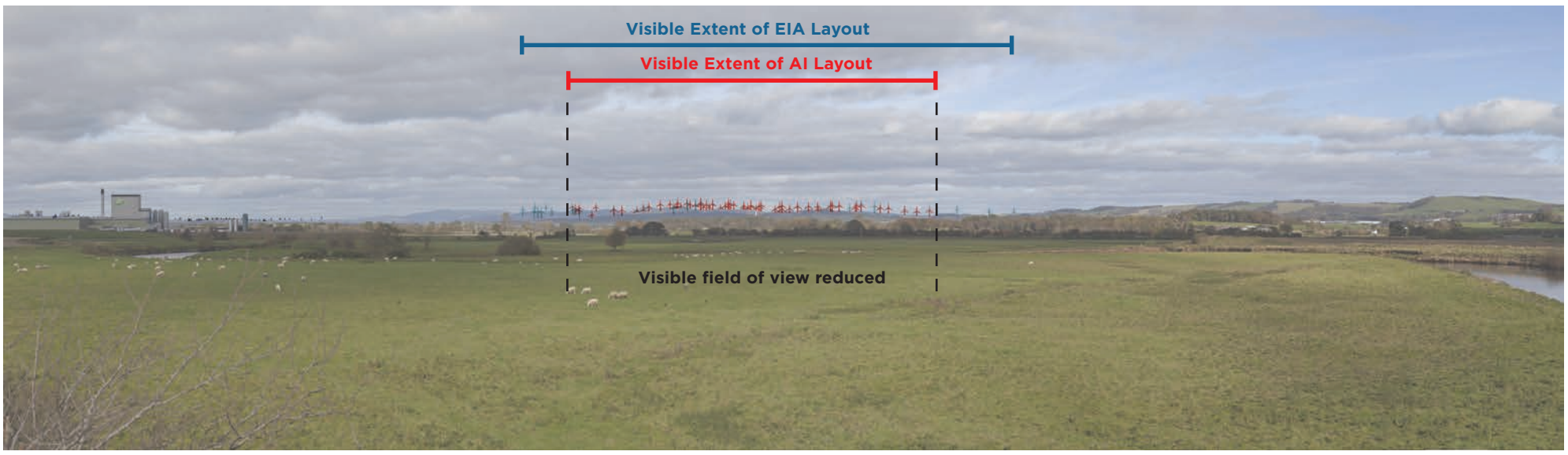
PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 11: Layout Comparison: VP11 A701 north of Moffat



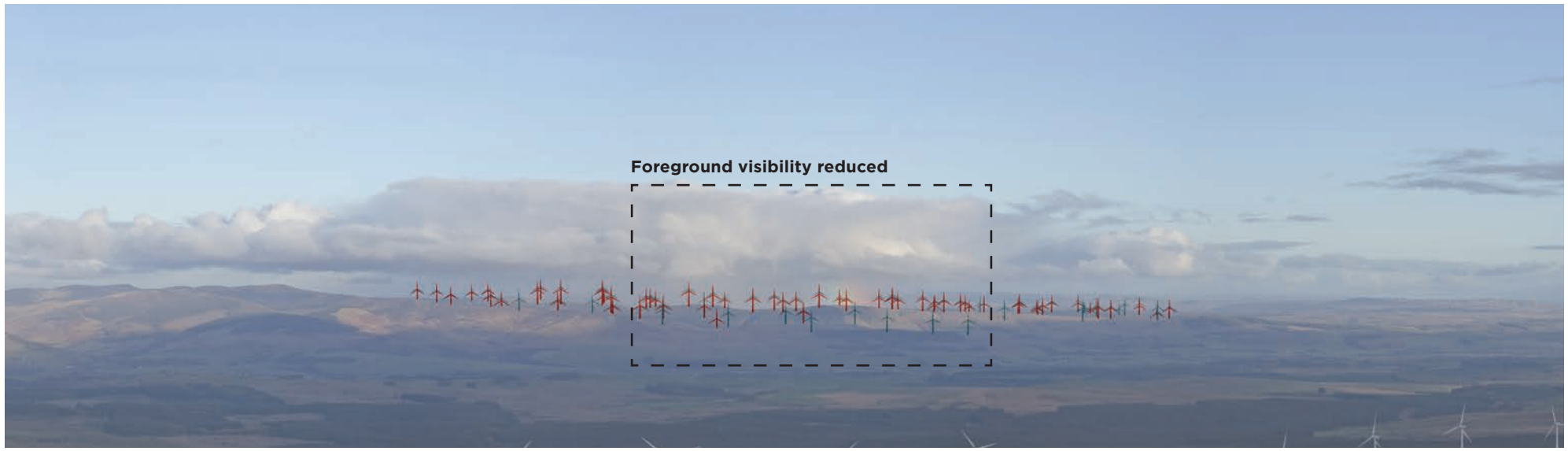
PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 12: Layout Comparison: VP16 Corrie Common



PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 13: Layout Comparison: VP18 A709 west of Lockerbie

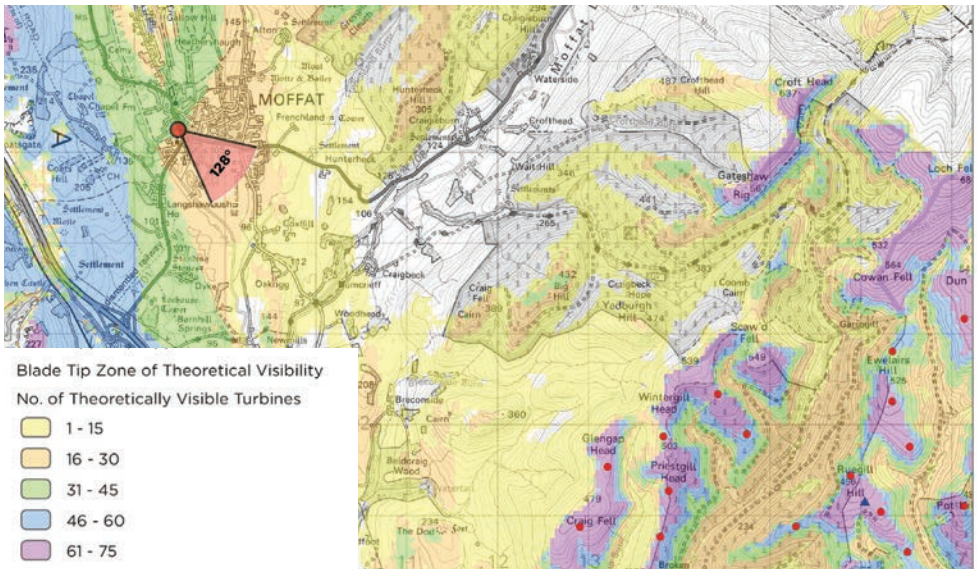


PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

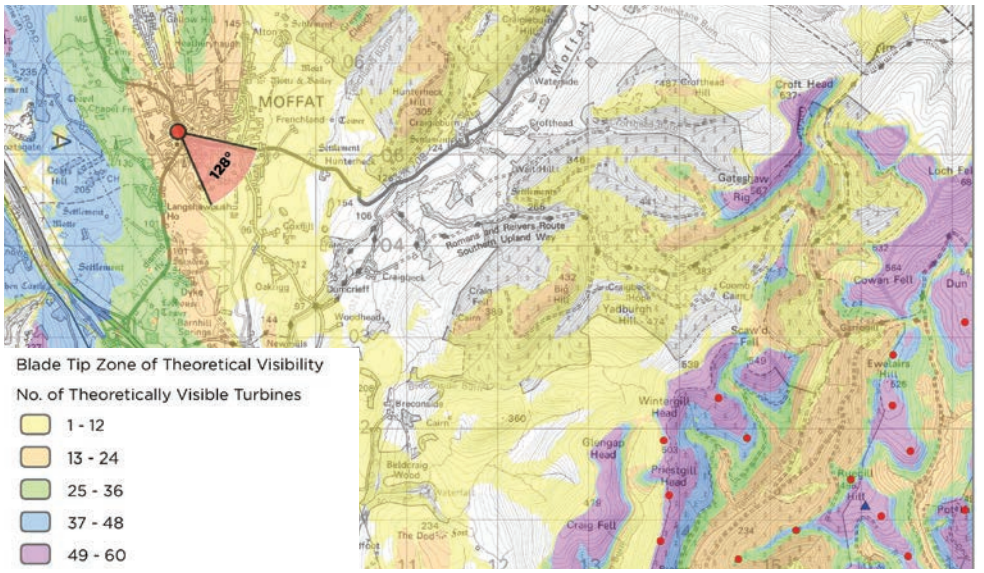
PHOTOMONTAGE: EIA Layout

PHOTOMONTAGE: AI Layout

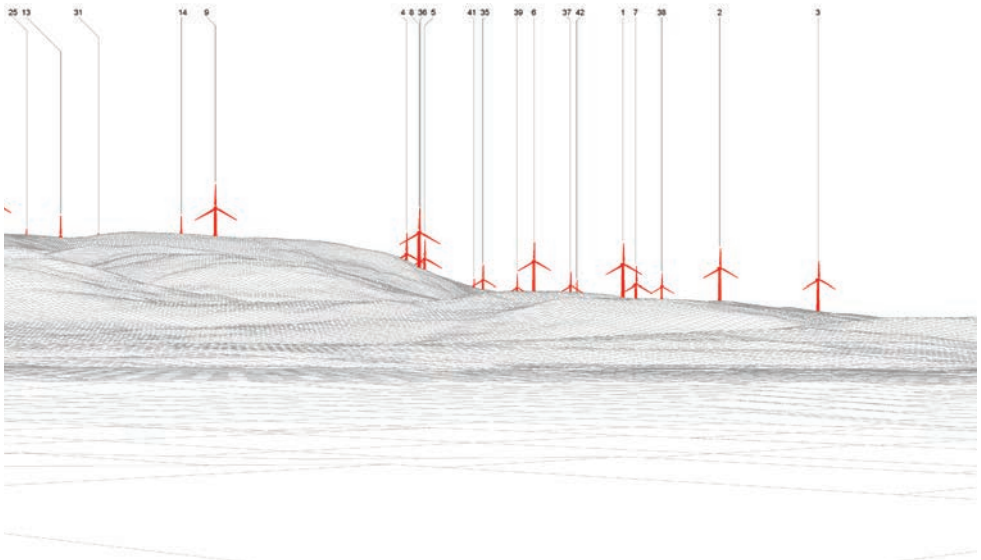
Figure 14: Layout Comparison: VP20 Queensberry



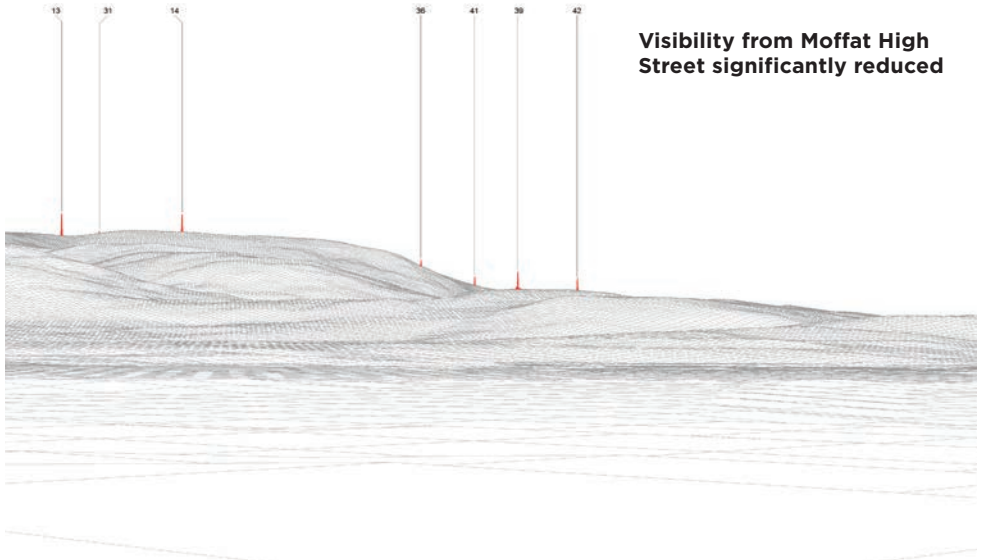
EIA LAYOUT: Viewpoint plan/ZTV



AI LAYOUT: Viewpoint plan/ZTV



EIA LAYOUT: Wireline Extract

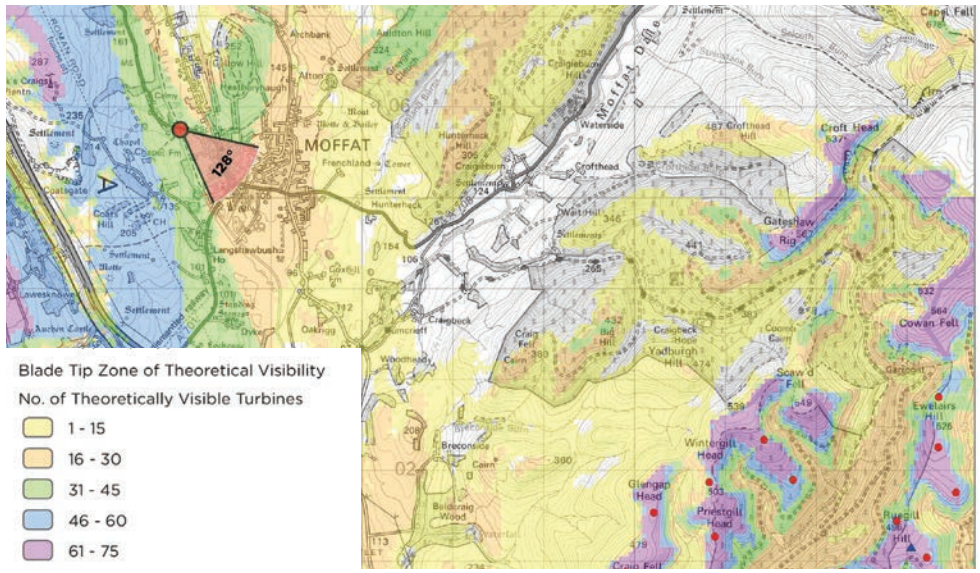


AI LAYOUT: Wireline Extract

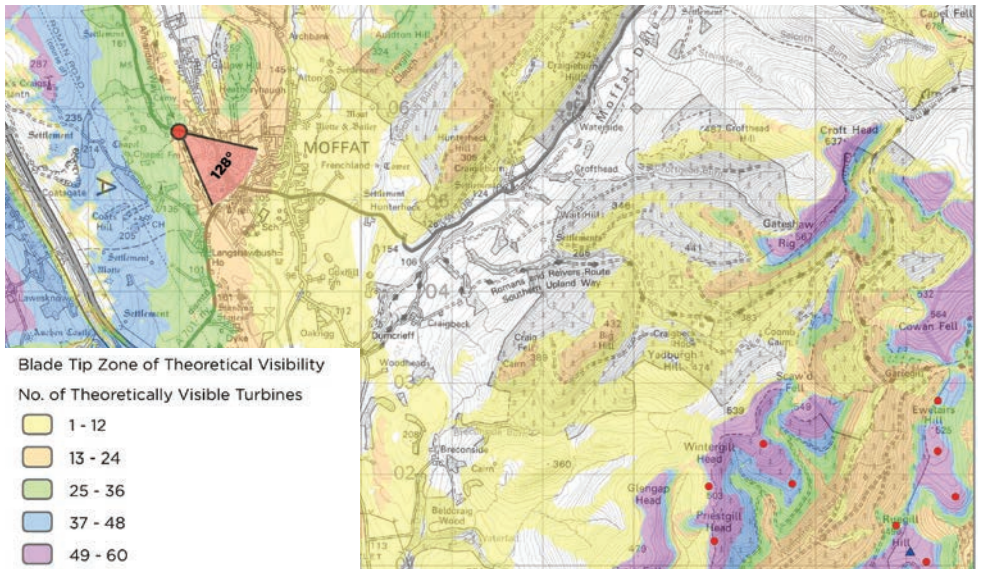
EIA LAYOUT: Photomontage Extract

AI LAYOUT: Photomontage Extract

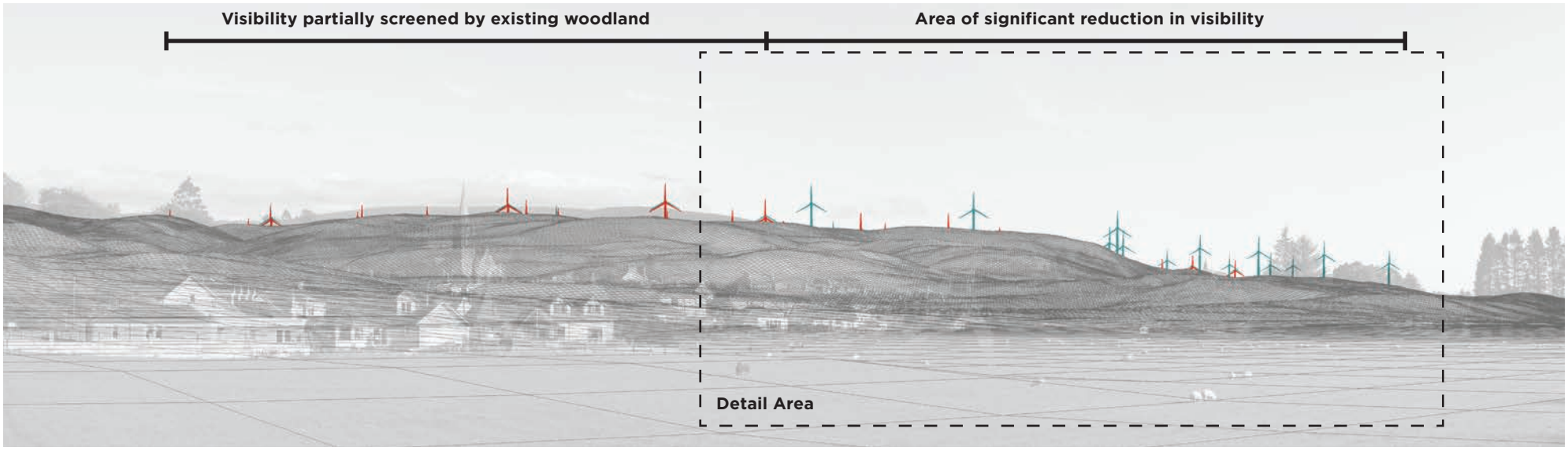
Figure 15: Layout Comparison: VP9 Moffat High Street



EIA LAYOUT: Viewpoint plan/ZTV



AI LAYOUT: Viewpoint plan/ZTV

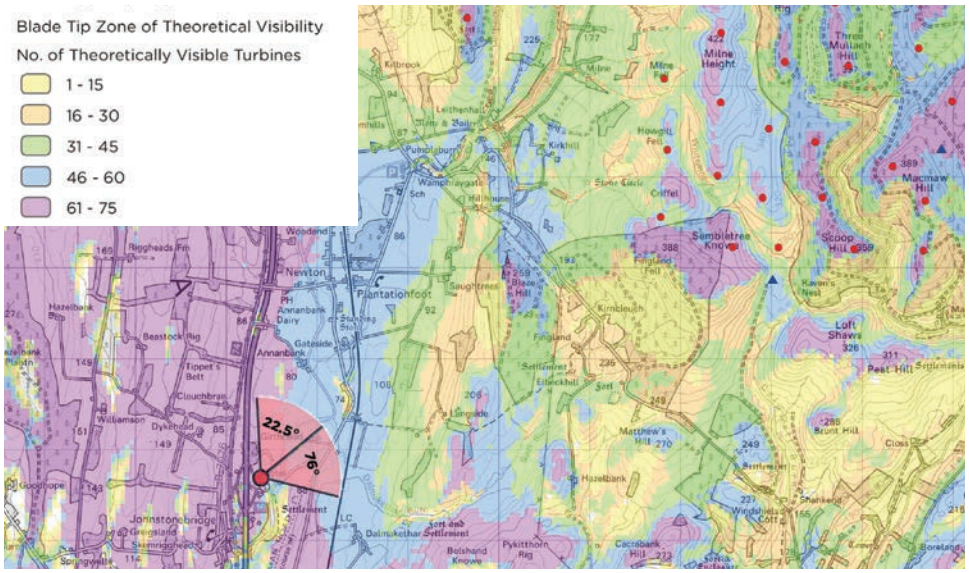


PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

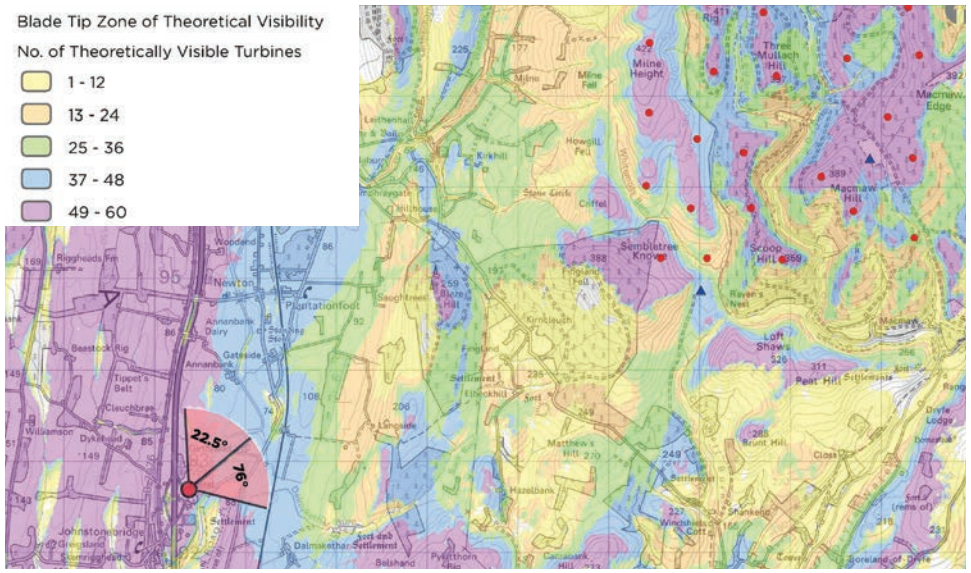
EIA LAYOUT: Photomontage Extract (Detail Area)

AI LAYOUT: Photomontage Extract (Detail Area)

Figure 16: Layout Comparison: VP10 Moffat A701 on northern edge



EIA LAYOUT: Viewpoint plan/ZTV

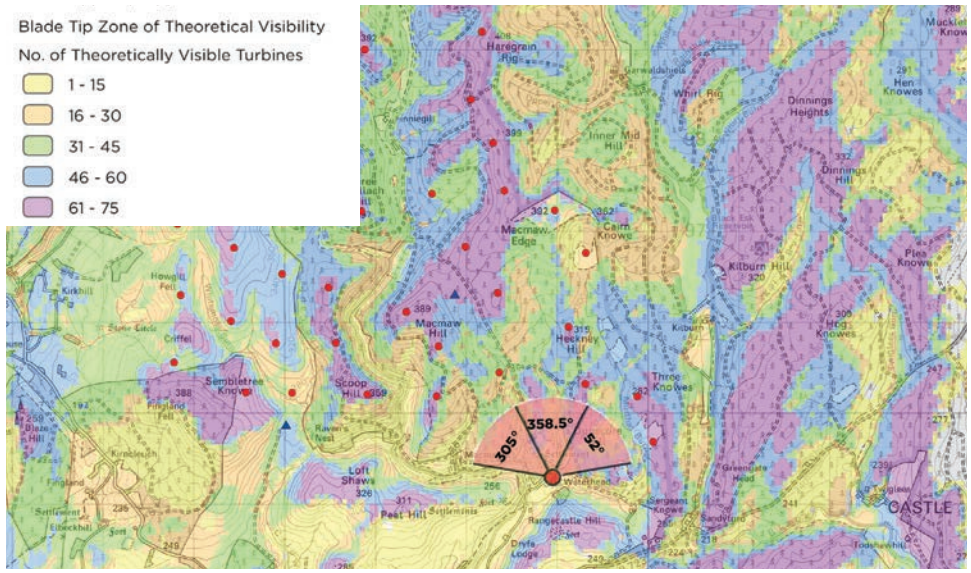


AI LAYOUT: Viewpoint plan/ZTV

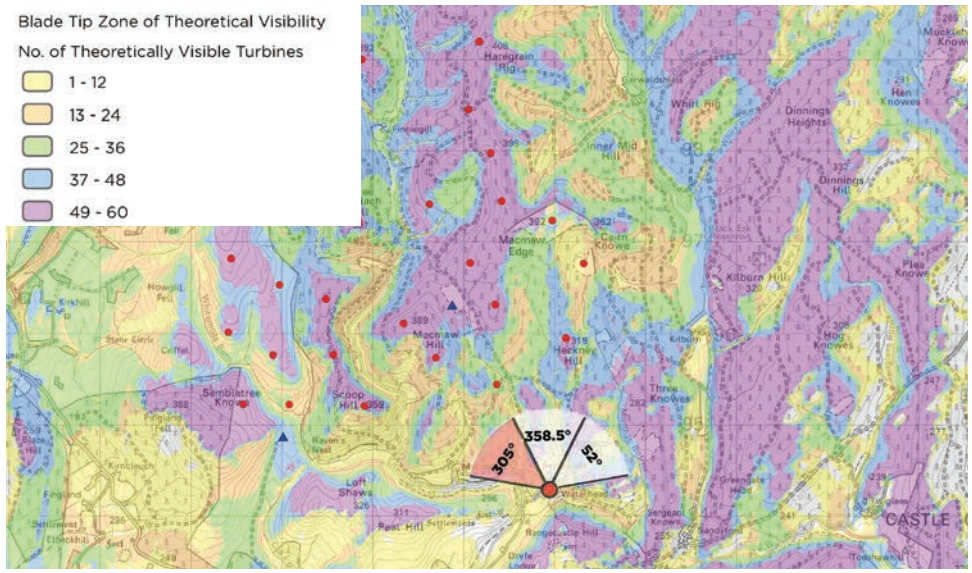
EIA LAYOUT: Photomontage Extract

AI LAYOUT: Photomontage Extract

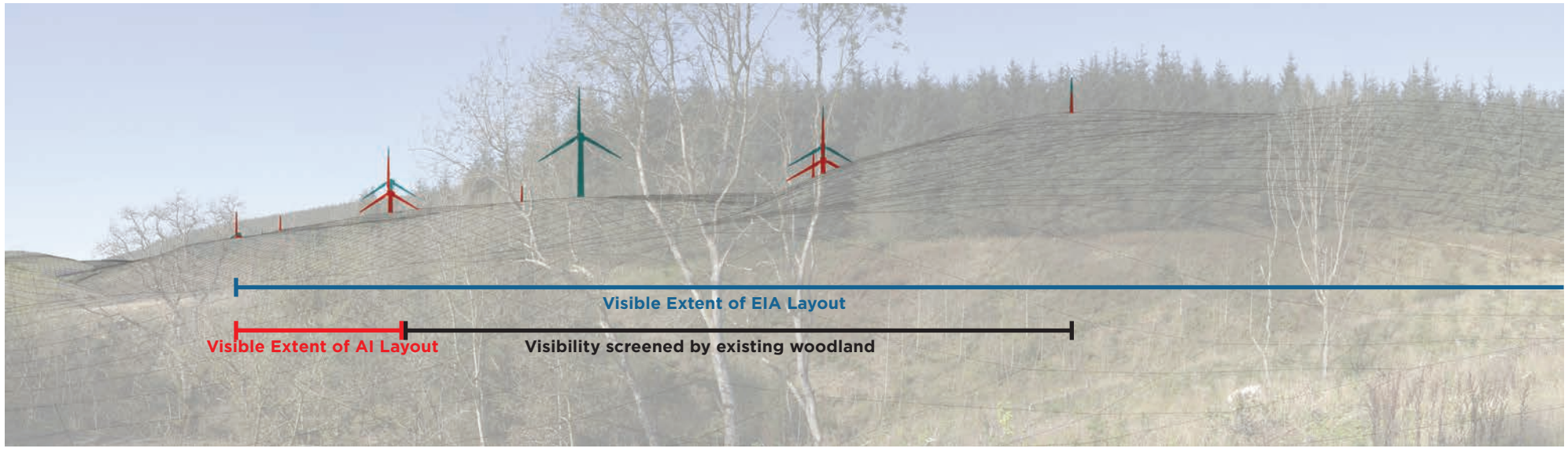
Figure 17: Layout Comparison: VP7 Annandale Water Services, J16 A74(M)



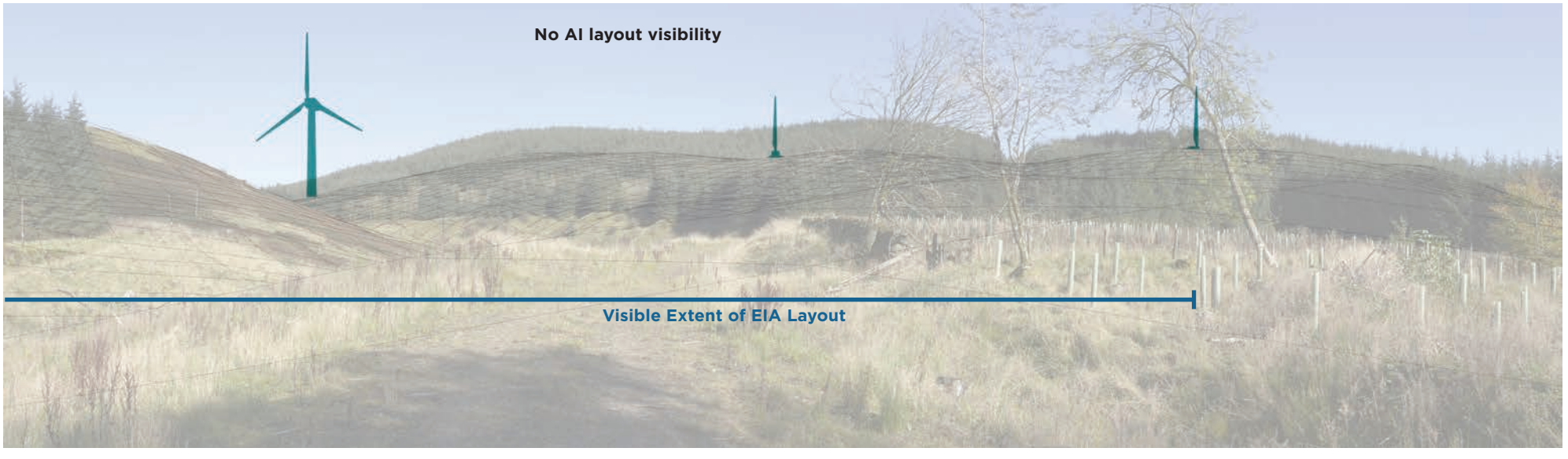
EIA LAYOUT: Viewpoint plan/ZTV



AI LAYOUT: Viewpoint plan/ZTV



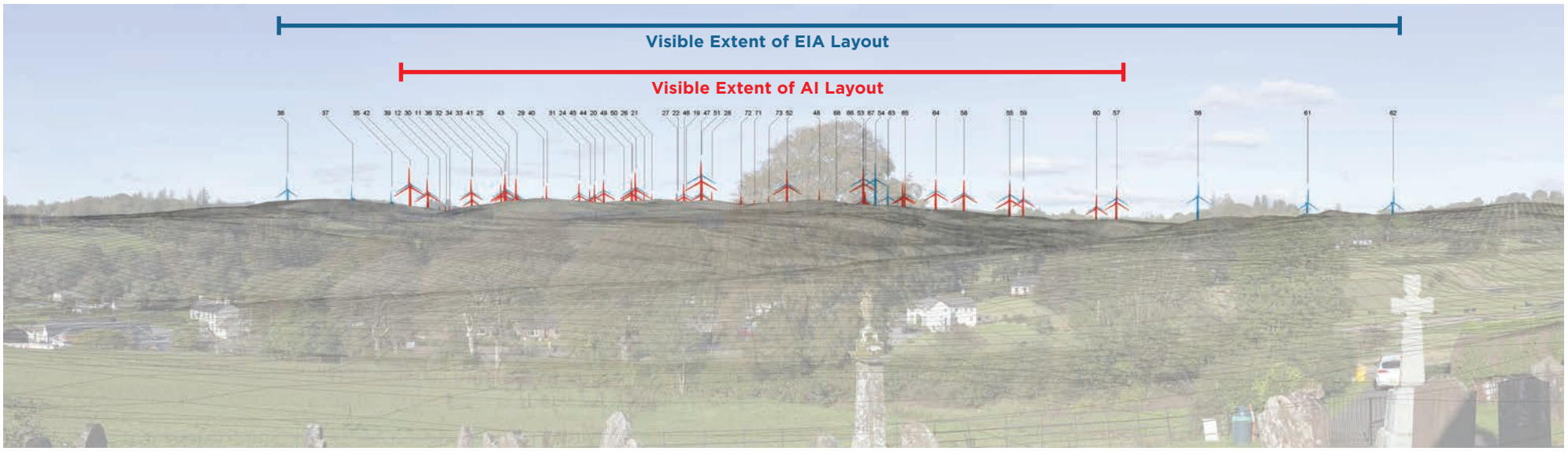
PHOTOWIRE OVERLAY (1 of 2): Proposed AI layout in red, EIA layout in blue (90 degree included angle, view direction 317 degrees)



PHOTOWIRE OVERLAY (2 of 2): Proposed AI layout in red, EIA layout in blue (90 degree included angle, view direction 47 degrees)

Figure 18: Layout Comparison: VP4 Waterhead of Dryfe

NOTE: Visualisations shown within this DAS are for illustrative/reference purposes only, refer to full scale visualisations accompanying this submission.

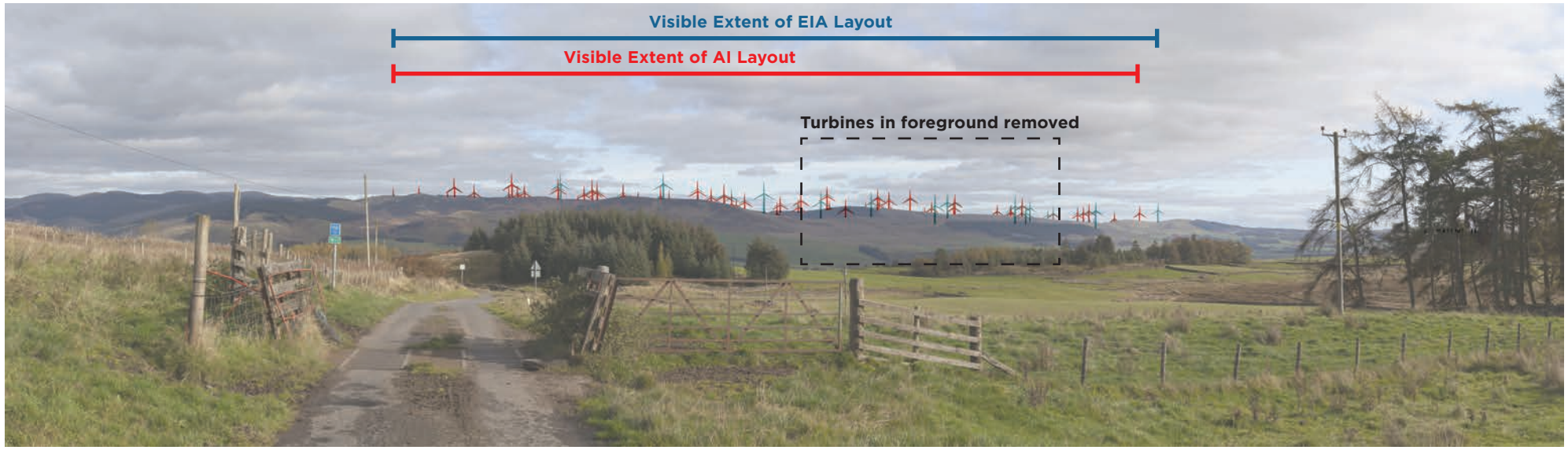


PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue (90 degree included angle, view direction 3 degrees)

EIA LAYOUT: Photomontage Extract

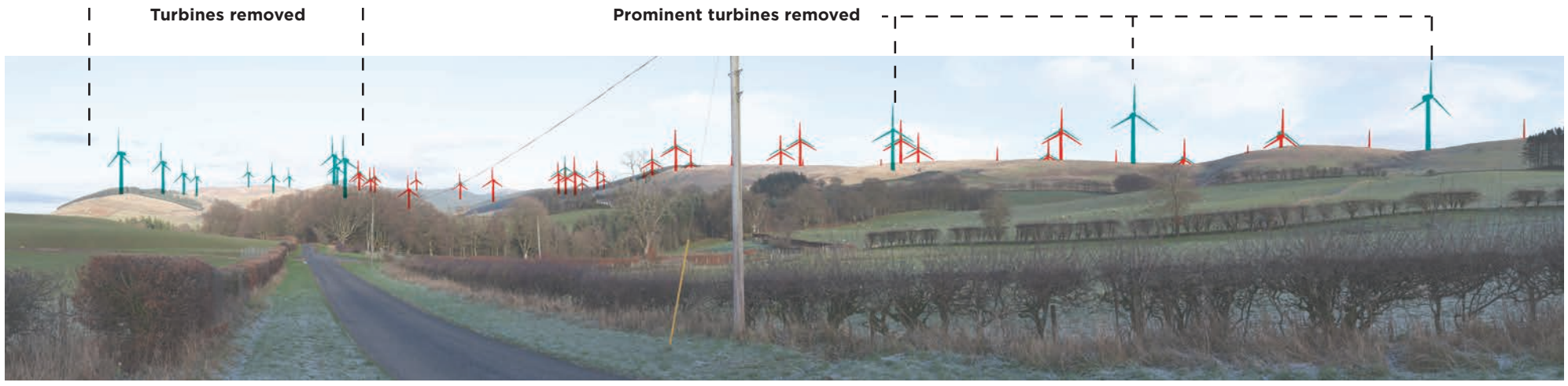
AI LAYOUT: Photomontage Extract

Figure 19: Layout comparison: VP6 Boreland Church



PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 20: Layout Comparison: VP8 Southern Upland Way near Beattock Hill



PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 21: Layout Comparison: View from near Kirkhill Cottages

PHOTOWIRE OVERLAY: Proposed AI layout in red, EIA layout in blue.

Figure 22: Layout Comparison: Near Laverhay

8. Residential Visual Amenity Effects

Photography: View from Crooked Road

The Landscape and Visual Impact Assessment for Scoop Hill Community Wind Farm includes a Residential Visual Amenity Assessment (RVAA), prepared in accordance with Landscape Institute Guidance (2019). This evaluates the likely effects on the visual component of residential amenity at all properties within a 2km radius of the outermost wind turbines (which accords with the Guidance), where they are located within the blade tip ZTV shading of the Proposed Development and have theoretical visibility of parts or all of the wind farm.

Some of the residential properties within 2km, that have theoretical visibility, are financially involved with the Proposed Development, in that the owners of those properties will stand to benefit if the wind farm is consented. As a consequence, it is widely accepted in decision-making by the Scottish Government (and elsewhere in the UK) that the occupiers of those properties can be expected to be willing to tolerate a higher magnitude of visual impact on their amenity, than might be acceptable in planning terms if they were not involved in this way.

The changes to the layout of Scoop Hill Community Wind Farm that have arisen as a result of the layout design review have reduced the overall footprint occupied by wind turbines (see Figures 23 and 24) and, consequently, a new RVAA has been prepared in the 2023 Additional Information submission, which fully replaces the earlier EIAR version. The more compact layout has had the effect of reducing the geographic extent of the 2km radius Study Area for the RVAA and a smaller number of properties are affected as a result. The tables below summarise the beneficial situation that has arisen since the EIAR was submitted, as a consequence of the removal of 15 wind turbines, as related to non-financially involved and financially involved properties.

Those properties highlighted green are included in the 2023 RVAA study area.

Financially Involved Properties				
ID	**Property name**	**Included in EIAR RVAA 2km Study Area**	**Included in 2023 AI RVAA 2 km Study Area**	**ID in 2023 AI RVAA**
1	Children's Wilderness Sanctuary	Yes	Yes	A
2	Wood Cottage	Yes	Yes	B
3	Laverhay	Yes	Yes	C
4	Crowgill	Yes	Yes	D
5	Old Braefield	Yes	Yes	E
6	Laverhay Cottage	Yes	Yes	F
7	Milne	Yes	Yes	G
8	Leithenhall Cottages	Yes	No, beyond 2km	
13	Leithenhall Farm	Yes	No, beyond 2km	
19	2 Kirkhill Cottage*	Yes	Yes	H
23	Kirkhill Farm	Yes	Yes	I
24	Kilbrook Cottage	Yes	No, beyond 2km	
42	Wamphray Gate Cottage	Yes	No, beyond 2km	
43	2 Willow Cottage	Yes	No, beyond 2km	
44	1 Willow Cottage	Yes	No, beyond 2km	
48	Broomhills Cottage	Yes	No, beyond 2km	

*Note: 2 Kirkhill Cottage became financially involved after the RVAA was produced in 2020

Note: The 2km Study Area limit is used to capture those locations where the magnitude of change could result in an 'overbearing' or 'dominant' visual impact on the amenity of a residential property, referred to in the Guidance as the 'RVAA Threshold'. It does not suggest that there cannot be significant visual impacts beyond 2km, but that the RVAA Threshold will not be reached. The threshold infers a level of impact which becomes a material planning consideration. Residential properties beyond 2km are extremely unlikely to be affected in this way due to the intervening distance from the wind turbines meaning that the scale of impact is unlikely to be overbearing or dominant.

Non-financially Involved Properties				
ID	**Property name**	**Included in EIAR RVAA 2km Study Area**	**Included in 2023 AI RVAA 2 km Study Area**	**ID in 2023 AI RVAA**
9	3 Sandyford Cottages	Yes	No, beyond 2km	
10	Sandyford Cottage	Yes	No, beyond 2km	
11	1 Sandyford Cottages	Yes	No, beyond 2km	
12	Kilburn	Yes	Yes	1
14	2 Sandyford Cottages	Yes	No, beyond 2km	
15	Waterhead of Dryfe Cottage	Yes	Yes	2
16	Kilbrook Farm	Yes	No, beyond 2km	
17	Wamphray Mill	Yes	No, beyond 2km	
18	Kirncleuch	Yes	Yes	3
20	1 Kirkhill Cottage	Yes	Yes	4
21	Fingland Cottage	Yes	Yes	5
22	Elbeckhill	Yes	No, beyond 2km	
25	Craig Beck Hope	Yes	Yes	6
26	Coomb Burn	Yes	No, beyond 2km	
27	Kirkburn	Yes	No, beyond 2km	
28	Annanside	Yes	No, beyond 2km	
29	Holmview	Yes	No, beyond 2km	
30	Newbigging	Yes	No, beyond 2km	
31	Pumplaburn Farm	Yes	No, beyond 2km	
32	Stenrieshill	Yes	No, beyond 2km	
33	Milkymoss	Yes	No, beyond 2km	
34	Roughdykes	Yes	No, beyond 2km	
35	Brigend	Yes	No, beyond 2km	
36	3 Dryfe Lodge	Yes	Yes	7
37	Marleside	Yes	No, beyond 2km	
38	1 Dryfe Lodge	Yes	Yes	8
39	2 Dryfe Lodge	Yes	Yes	9
40	Fingland	Yes	No, beyond 2km	
41	Wamphray Gate Farmhouse	Yes	No, beyond 2km	
45	Crossknowe	Yes	No, beyond 2km	
46	Broomhills Farm	Yes	No, beyond 2km	
47	Murthat Cottage	Yes	Yes	10
49	2 Dundoran View	Yes	No, beyond 2km	
50	4 Dundoran View	Yes	No, beyond 2km	
51	6 Dundoran View	Yes	No, beyond 2km	
52	8 Dundoran View	Yes	No, beyond 2km	

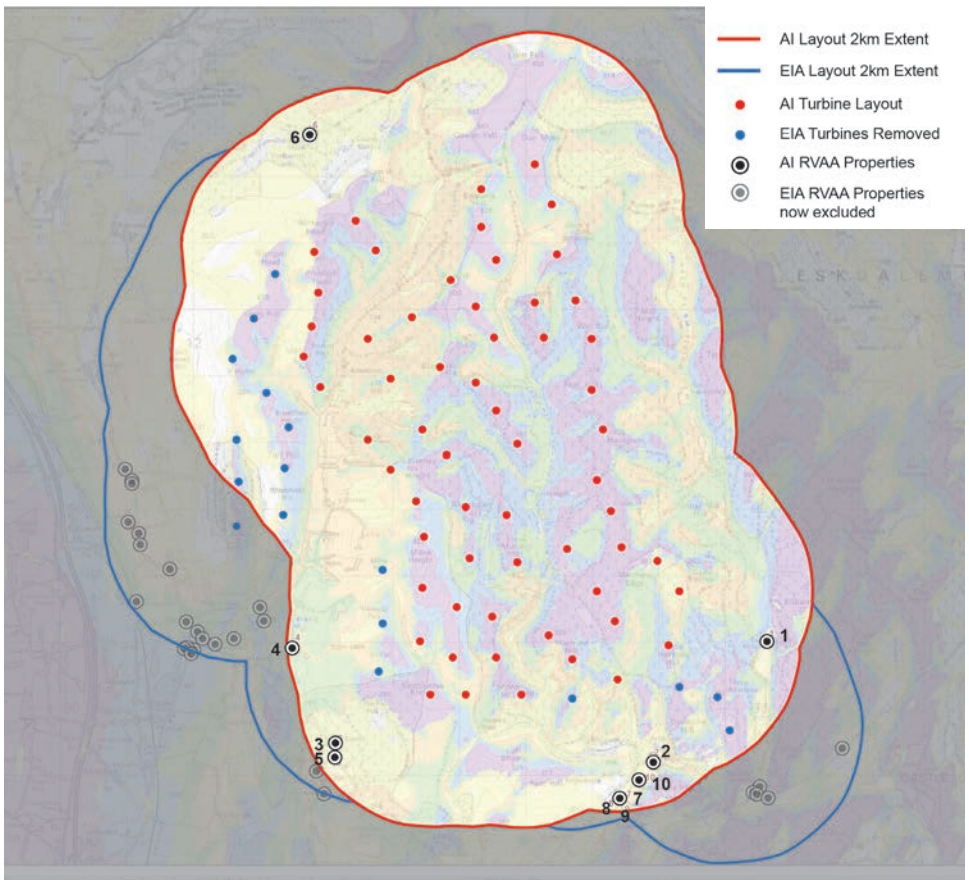


Figure 23: Layout comparison: Non-financially Involved Properties

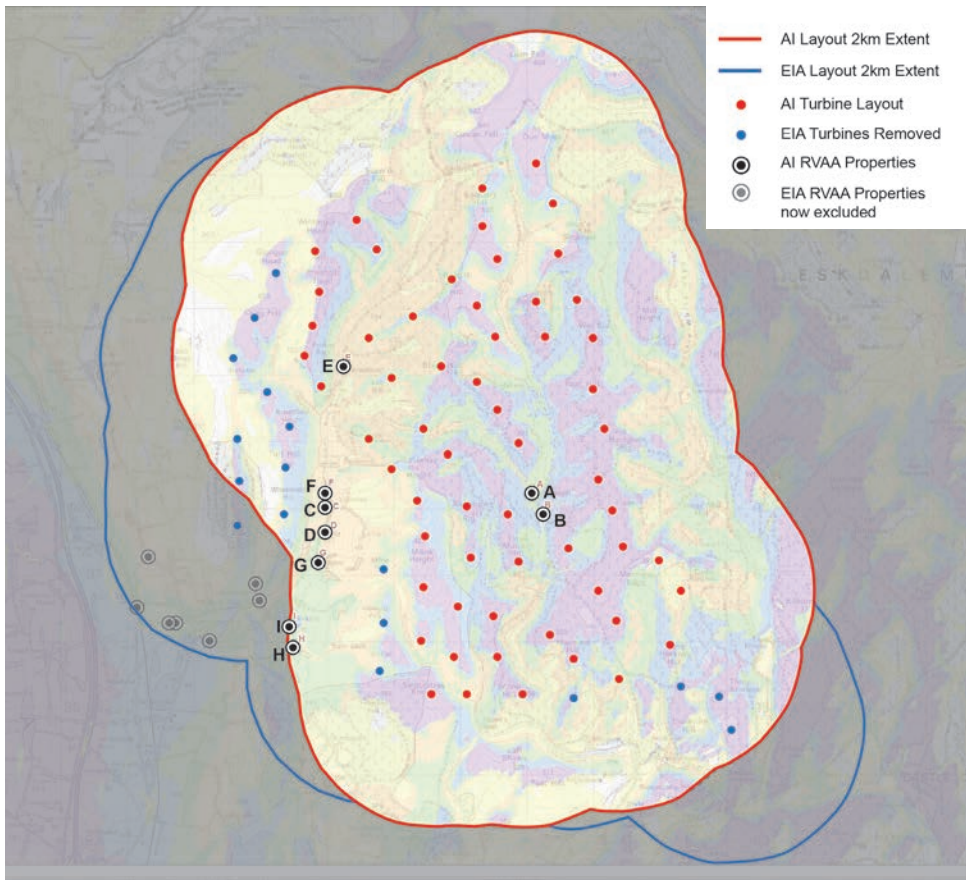


Figure 24: Layout comparison: Financially Involved Properties

Non-financially Involved Properties					
ID	**Property name**	**Magnitude of Effect EIAR**	**Significance EIAR**	**Magnitude of Effect 2022 AI**	**Significance 2023 AI**
1	Kilburn	Medium-Low	Not significant	Low	Not significant
2	Waterhead of Dryfe Cottage	Medium-High	Significant (Not at Threshold)	Medium	Significant (Not at Threshold)
3	Kirncleuch	Medium	Significant (Not at Threshold)	Low	Not significant
4	1 Kirkhill Cottage	High	Significant (RVAA Threshold)	Medium-High	Significant (Not at Threshold)
5	Fingland Cottage	Medium-Low	Not significant	Low	Not significant
6	Craig Beck Hope	Medium/ Medium-Low	Significant (Not at Threshold)	Medium/ Medium-Low	Significant (Not at Threshold)
7	3 Dryfe Lodge	Medium-Low	Not significant	Low	Not significant
8	1 Dryfe Lodge	Medium-Low	Not significant	Low	Not significant
9	2 Dryfe Lodge	Medium-Low	Not significant	Low	Not significant
10	Murthat Cottage	Medium	Significant (Not at Threshold)	Medium	Significant (Not at Threshold)
Financially Involved Properties					
ID	**Property name**	**Magnitude of Effect EIAR**	**Significance EIAR**	**Magnitude of Effect 2022 AI**	**Significance 2023 AI**
A	Children's Wilderness Sanctuary	High	Significant (RVAA Threshold)	Property will not be inhabited for the operational period	
B	Wood Cottage	High	Significant (RVAA Threshold)	Property will not be inhabited for the operational period	
C	Laverhay	High	Significant (RVAA Threshold)	High	Significant (RVAA Threshold)
D	Crowgill	Medium/ Medium-High	Significant (RVAA Threshold)	Medium	Significant (Not at Threshold)
E	Old Braefield *	High	Significant (RVAA Threshold)	Property will not be inhabited for the operational period	
F	Laverhay Cottage	High	Significant (RVAA Threshold)	High	Significant (RVAA Threshold)
G	Milne	Medium-High	Significant (RVAA Threshold)	Medium	Significant (Not at Threshold)
H	2 Kirkhill Cottage	High	Significant (RVAA Threshold)	Medium	Significant (Not at Threshold)
I	Kirkhill Farm	Medium-High	Significant (RVAA Threshold)	Medium	Significant (Not at Threshold)

* Old Braefield is a derelict property that is owned by CWL.

It can be seen from this comparison that a total of ten non-financially involved properties are now located within a 2km radius of the Proposed Development, down from 37 no. properties in the 2020 EIAR (including 2 Kirkhill Cottage which was non-financially involved at that time). The number of financially involved properties is also reduced, from 15 no. in 2020 (excluding 2 Kirkhill Cottage) to nine in the 2023 RVAA.

The layout design review has not only reduced the number of properties that are captured within the 2km Study Area, but it has also reduced the magnitude and significance of visual impact that some of the properties are likely to experience. The table below compares the magnitude and significance of visual effect for each of the properties that are evaluated in the 2023 RVAA. The sensitivity attributed to all residential properties is 'High'.

Where changes have occurred in the assessment, these are highlighted green.

Non-financially Involved Properties			
ID	**Property name**	**Distance to nearest wind turbine in EIAR RVAA**	**Distance to nearest wind turbine in 2023 AI RVAA**
1	Kilburn	1.11km	1.50km
2	Waterhead of Dryfe Cottage	1.18km	1.33km
3	Kirncleuch	1.31km	1.65km
4	1 Kirkhill Cottage	1.35km	1.92km
5	Fingland Cottage	1.39km	1.71km
6	Craig Beck Hope	1.46km	1.46km
7	3 Dryfe Lodge	1.73km	1.82km
8	1 Dryfe Lodge	1.73km	1.83km
9	2 Dryfe Lodge	1.74km	1.82km
10	Murthat Cottage	1.52km	1.56km
Financially Involved Properties			
ID	**Property name**	**Distance to nearest wind turbine in EIAR RVAA**	**Distance to nearest wind turbine in 2023 AI RVAA**
A	Children's Wilderness Sanctuary	0.52km	0.52km
B	Wood Cottage	0.52km	0.52km
C	Laverhay	0.65km	1.12km
D	Crowgill	0.67km	1.37km
E	Old Braefield	0.60km	0.44km
F	Laverhay Cottage	0.70km	0.99km
G	Milne	0.90km	1.64km
H	2 Kirkhill Cottage	1.34km	1.91km
I	Kirkhill Farm	1.4km	1.97km

The comparative assessment demonstrates that the layout design review has resulted in a reduction in magnitude of change and significance for a number of residential properties, both non-financially involved and financially involved. This is due to the removal of wind turbines from the edges of the wind farm which has served to push back the development deeper into the uplands. This is particularly evident in the wireline for 1 Kirkhill Cottage, for example, which is no longer considered to have reached the RVAA Threshold.

None of the properties that do not have a financial involvement will reach the RVAA Threshold, which highlights positive mitigation in the layout changes. Four involved properties will also no longer reach the RVAA Threshold.

The turbine removal has also reduced the field of view affected by wind turbines for some properties, particularly those in Wamphray Glen, where the removal of turbines T1-T10 has reduced the sense of encirclement, albeit benefiting involved properties.

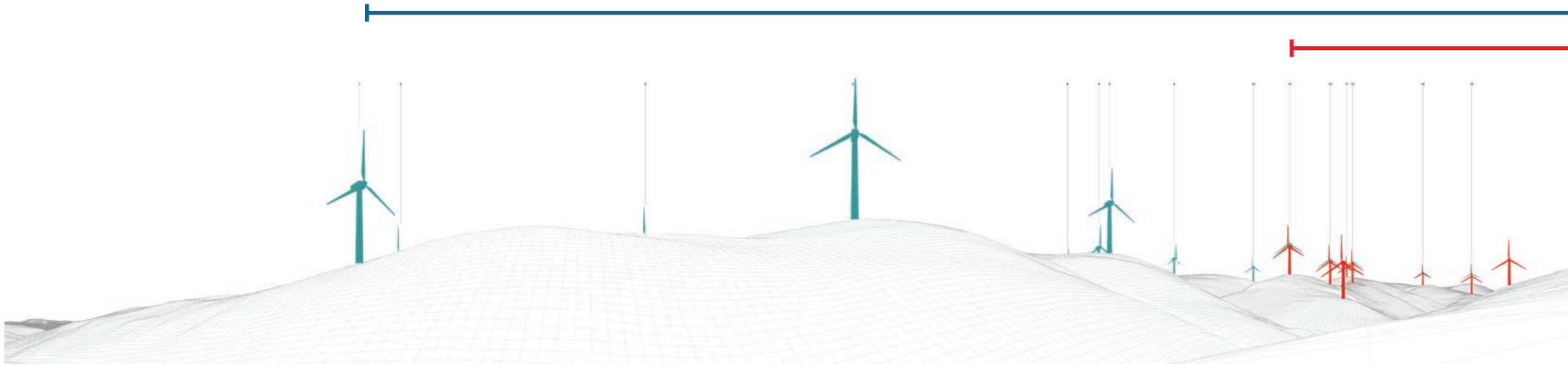
While for some properties the visual impact will remain significant, it is notable that the magnitude of change has reduced discernibly in several cases. This is largely due to increased separation between the wind farm and houses, as shown in the table below.

Where separation distances have increased it is highlighted in green. Where separation distances have reduced it is highlighted in orange.

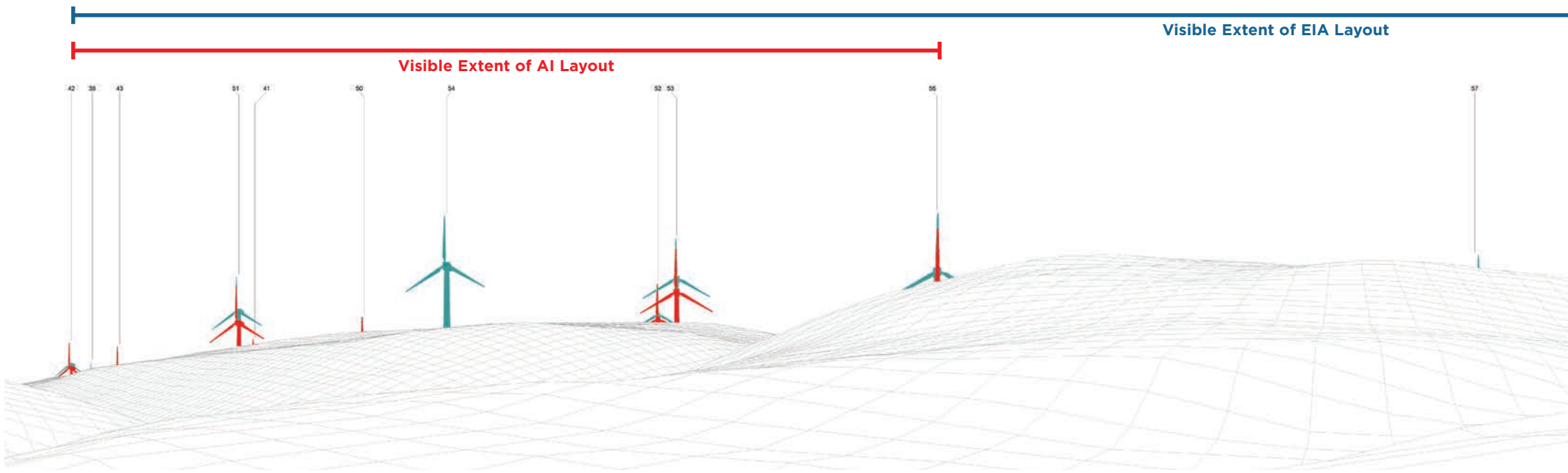
It should be noted that:

- **Children's Wilderness Sanctuary, that was included in the original EIAR is financially involved in the proposed development and if consented the property will not be inhabited for the operational period; it is therefore not assessed further.**
- **Wood Cottage, Finniegill, that was included in the original EIAR is financially involved in the proposed development. It is infrequently inhabited and if consented the property will not be inhabited for the operational period; it is therefore not assessed further.**
- **Old Braefield, that was included in the original EIAR is uninhabitable. It is under control of the applicant and is not in residential use and therefore will not be assessed further.**

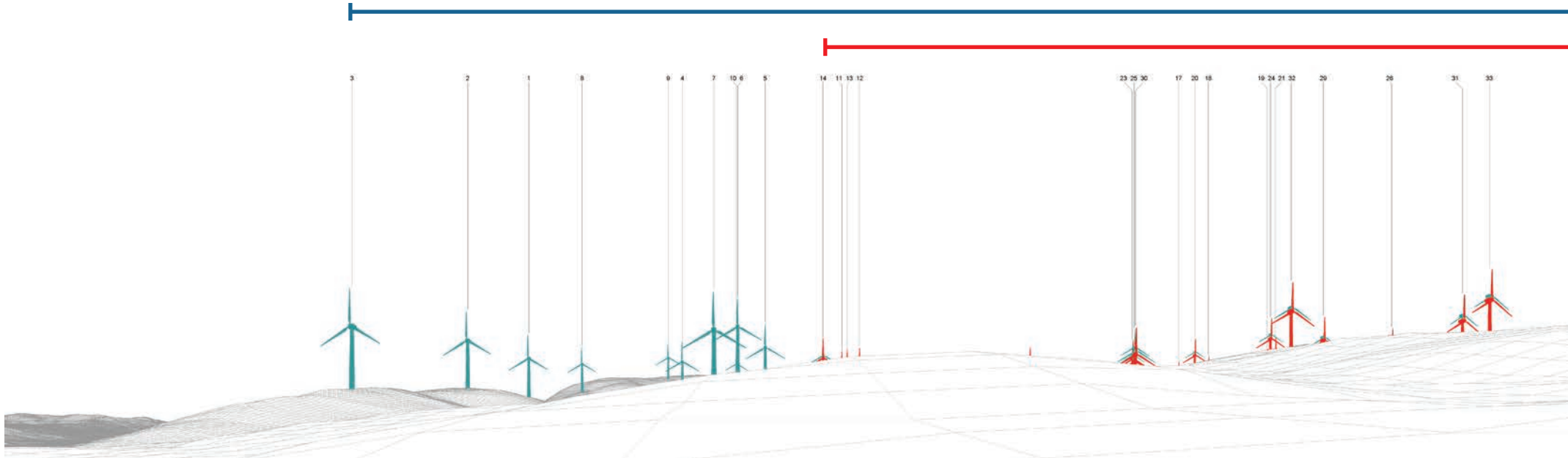
The comparative table indicates the degree to which the wind farm has been set back from a number of sensitive residential receptors. This has reduced the perceived height of wind turbines which in turn has reduced the magnitude of effect in a number of cases. The mitigation secured through the layout design review is particularly beneficial in relation to residential (visual) amenity.



COMPARATIVE WIRELINE: Proposed AI layout in red, EIA layout in blue. (360 degree field of view)



COMPARATIVE WIRELINE: Proposed AI layout in red, EIA layout in blue. (180 degree field of view)



COMPARATIVE WIRELINE: Proposed AI layout in red, EIA layout in blue. (180 degree field of view)

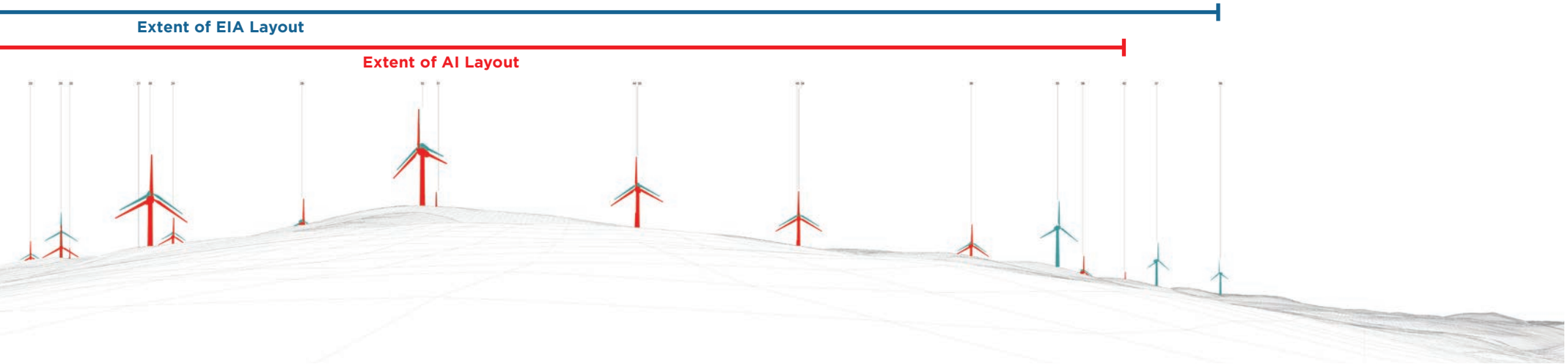


Figure 25: Layout comparison: RVAA Viewpoint F: Laverhay Cottage

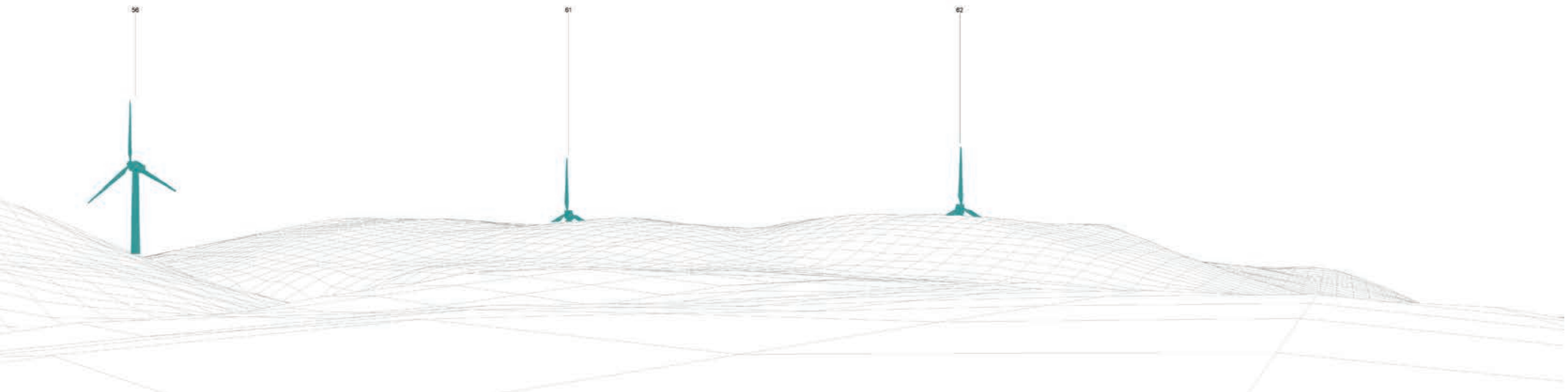


Figure 26: Layout comparison: RVAA Viewpoint 2: Waterhead of Dryfe Cottage

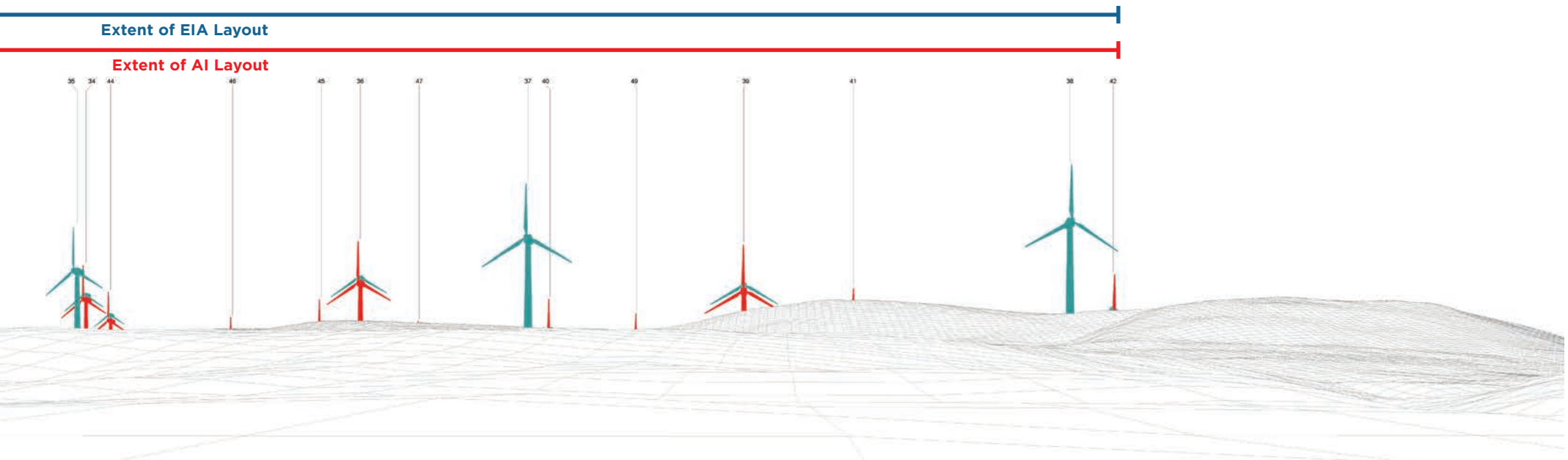


Figure 27: Layout comparison: RVAA Viewpoint 4: 1 Kirkhill Cottage

9. Aviation Lighting Effects

Site Boundary

2000 candela visible and infra-red

Infra-red only

No lighting

There is a safety requirement to attach visible red aviation lights to the wind turbines in order to warn civil aircraft flying at night of the presence of the Scoop Hill Community Wind Farm. The requirement for these lights is set down at an international level by the ICAO and interpreted at the UK level by the CAA.

The principal effect of aviation lighting will come from visibility of the aviation light emissions, but some additional effect may arise where blades may appear to flicker when viewed in front of the turbine, and from light glancing along the blade. Turbine lighting will not cause sky glow, but can contribute towards an absence of natural darkness.

Visible aviation lighting can be seen across substantial distances. The principal effect will come from visibility of the light itself, but some additional effect may arise from light glancing along the blade, and that it may appear to flicker when standing in front of the turbine.

Visible aviation lighting is distinct from infra-red lighting which is often required to fitted to be wind turbines for military aviation purposes, but which is not detectable by the human eye without night-vision goggles.

It is therefore necessary for the impacts of visible aviation lighting on a proposed wind farm to be established through a night-time lighting assessment. The night-time assessment for Scoop Hill is set out in section 6.9 of the Landscape and Visual Impact Assessment chapter of the EIAR. This describes the details of the proposed lighting scheme and outlines what mitigation is proposed. The 2023 Additional Information contains an updated assessment, because further mitigation to the aviation lighting has been secured.

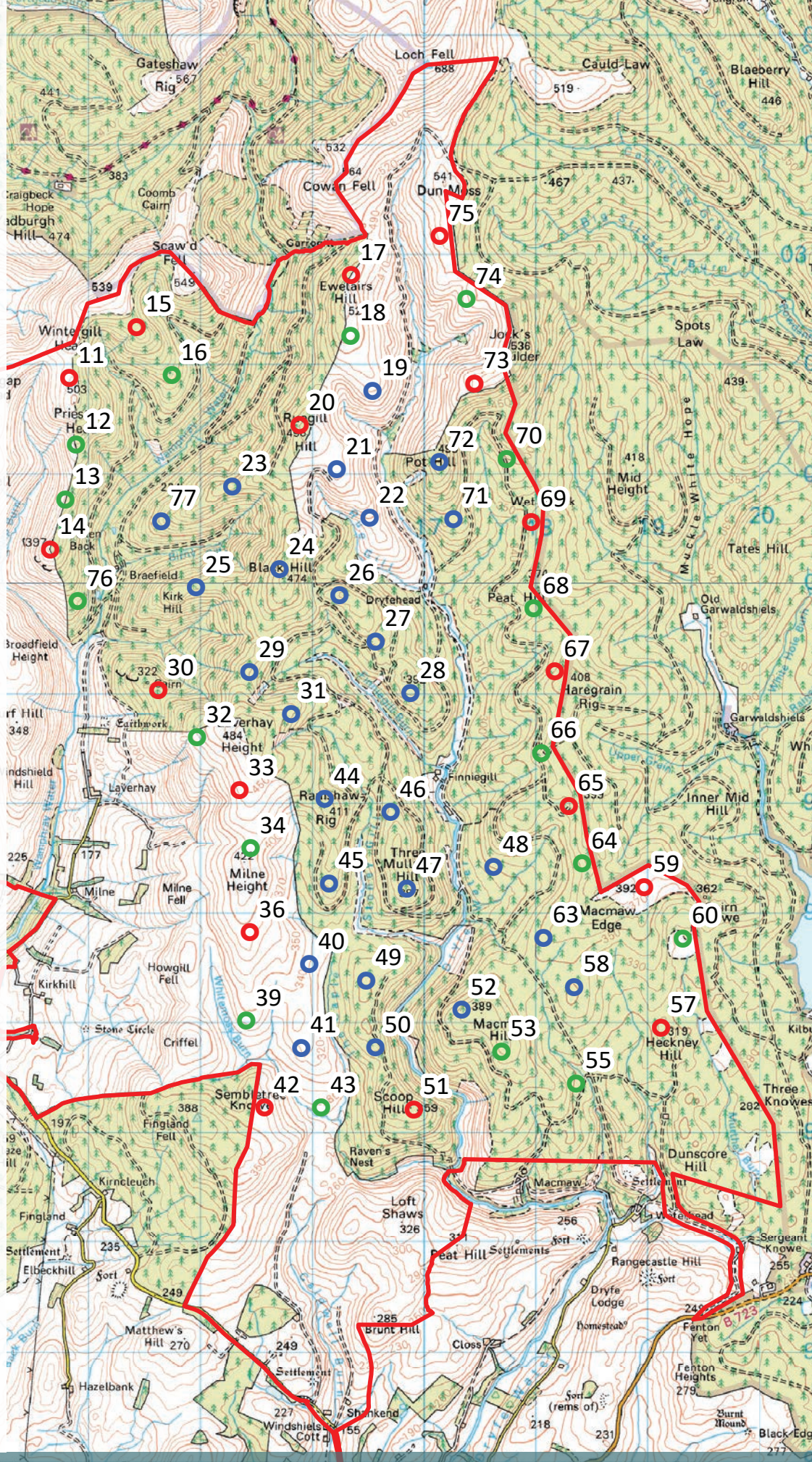


Figure 28: Aviation Lighting Layout

As landscape features become indistinct in low light conditions, at twilight, during the night and at dawn with only natural ambient lighting from the moon and stars uninterrupted by artificial light, perceptions of darkness and remoteness become heightened as constituent elements of landscapes. These elements are implicit in the enjoyment and appreciation of rural settings.

The various stages of twilight lead to a progressive darkening of skies at night, with the reverse process occurring at dawn. Visible aviation lighting will not reach its fullest perceived intensity until after civil and nautical twilight stages are passed, when the night sky and stars become fully apparent, providing atmospheric conditions are optimum.

The degree to which visual impact at night-time may result from visibility of aviation lighting can vary markedly depending on a complex range of interwoven factors, which may include:

- **The number and perceived intensity of visible aviation lights;**
- **The prevailing atmospheric conditions;**
- **The phase of the moon;**
- **The saturation of darkness; and**
- **The appearance of other baseline lighting in the landscape.**

The significance of any impact will also depend on the sensitivity of the person who is viewing the light, which will be influenced by where and why they are in the landscape at night, as well as the activity being undertaken. Most activity in the rural landscape at night involves some form of personal light for safety, and this will affect how other lights are perceived in the dark, due to the process called 'dark adaptation'.

Visualisation can be a helpful tool to the assessor and accurate visualisations have been included within the LVIA Figures in Volume III of the EIAR, with updated versions included in the 2023 Additional Information.

Aviation lighting design (and its mitigation) is a rapidly evolving technology, and the Scoop Hill assessment is produced at a time when a variety of techniques are being deployed by developers to try and mitigate the effects of night-time lighting on wind turbines. This includes an impetus across the renewables industry (which is supported by the CAA) to implement use of Aircraft Detection Lighting Systems ('ADLS'), whereby visible aviation lights are only required to operate when an aircraft enters a specified airspace around the wind farm. This technology is used in other parts of Europe but requires a change to UK air law requiring mandatory carriage of transponders on all aircraft in the UK to be effective here.

Since the application for Scoop Hill Community Wind Farm was submitted, CWL has continued to explore means by which the night-time effects from visible lighting can be reduced to minimise potential impacts. An Aeronautical Study has been undertaken to explore the potential for a reduced lighting scheme, whereby the visible lights are limited to the periphery of the wind farm and placed on intermittent turbines around the perimeter. This study has resulted in the design of a reduced lighting scheme for the revised Proposed Development.

The revised lighting design for Scoop Hill Community Wind Farm was approved by the CAA on 21st December 2022 and the MoD on 10th January 2023. The reduced lighting scheme comprises the following lighting arrangement:

- **2000 candela visible, plus infra-red on: Turbines 11, 14, 15, 17, 20, 30, 33, 36, 42, 51, 57, 59, 65, 67, 69, 73 and 75 [total of 17 turbines];**
- **Infra-red only on: Turbines 12, 13, 16, 18, 32, 34, 39, 43, 53, 55, 60, 64, 66, 68, 70, 74 and 76 [total of 17 turbines];**
- **No lighting on: Turbines 19, 21 to 29, 31, 40, 41, 44 to 50, 52, 58, 63, 71, 72 and 77 [total of 26 turbines].**

The reduced lighting scheme also includes the removal of all mid-tower, low intensity, 32cd lighting (3no. per turbine tower). Taken together, the reduced lighting scheme would result in a total of 17 medium (2000cd) intensity lights across the wind farm which has been assessed and approved by the CAA and MoD. This means that the number of visible, medium intensity, nacelle lights has reduced from 75 assessed in the original EIAR to 17 in the revised wind farm proposal, together with the removal of all 225 low intensity tower lights.

This mitigation substantially reduces the night-time visual effects that were previously identified in the EIAR. The updated visual effects from the reduced lighting scheme is assessed and shown on the relevant visualisations within the 2023 AI submission.

Aviation Lighting type	EIAR scheme	AI 2023 Reduced Aviation Lighting scheme
2,000cd medium intensity hub lights	75 no.	17 no.
32cd low intensity mid-tower lights (3 no. per turbine tower)	225 no.	None

An example of the comparative night time effect from Hart Fell is shown opposite, which compares the EIAR assessed lighting scheme with the agreed reduced lighting scheme.

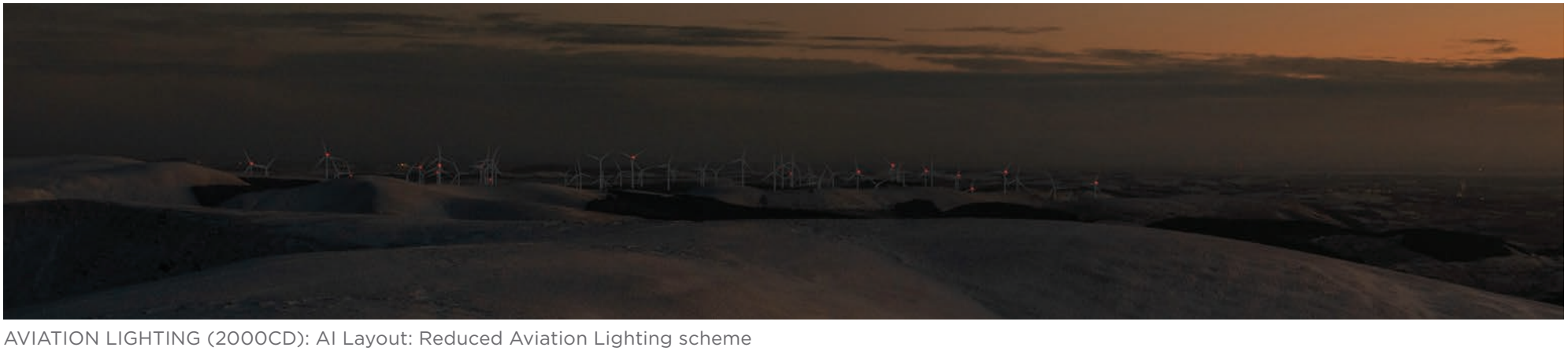
It is also the case that the CAA permits wind farm operators to use technology to dim the intensity of the hub lights to 10% of their maximum operational intensity when visibility is clear around the wind farm for at least 5km. This means that when visibility is good, the lights will operate at a reduced intensity of 200cd. Conversely, when there is cloud, mist or fog in the vicinity of the wind farm, and the lights are required to operate at 2,000cd, visibility will be reduced by the prevailing conditions.

In summary, the mitigation secured through the reduction in number of turbines within the Proposed Development, alongside the approved reduced aviation lighting scheme, will significantly reduce the amount of light pollution seen from areas around the site when compared with the EIAR proposals. The night time photomontage from Moffat shown on page 45 illustrates the reduction in lighting from the EIAR proposals.

AVIATION LIGHTING (200CD): EIAR – Lighting for all turbines

AVIATION LIGHTING (2000CD): EIAR – Lighting for all turbines

AVIATION LIGHTING (200CD): AI Layout: Reduced Aviation Lighting scheme



AVIATION LIGHTING (2000CD): AI Layout: Reduced Aviation Lighting scheme

Figure 29: Aviation Lighting Layout Comparison: VP21 Hart Fell

AVIATION LIGHTING (200CD): EIAR – Lighting for all turbines

AVIATION LIGHTING (2000CD): EIAR – Lighting for all turbines

AVIATION LIGHTING (200CD): AI Layout: Reduced Aviation Lighting scheme

AVIATION LIGHTING (2000CD): AI Layout: Reduced Aviation Lighting scheme

Figure 30: Aviation Lighting Layout Comparison: VP10: Moffat A701 on northern edge

10. Cultural Heritage

Existing Photography: View towards proposal from elevated land east of the B723

Section 9 of the Additional Information presents an assessment of the effects of the Proposed Development on the historic environment. The assessment considers a revised site layout and follows the submission of the 2020 EIAR.

During consultation with the council's Built Heritage Officer and Archaeology Officer a number of potential concerns were raised. The Built Heritage Officer raised concerns about the potential impact of the proposed development on the Moffat Conservation Area and the Listed Buildings in the town. Five Listed Buildings were identified where the Officer would like to see further analysis. The Archaeology Officer highlighted his potential concerns in relation to two hill forts at Dundoran Hill and Rangecastle Hill. The applicant has submitted revised visualisations and a revised assessment as part of Section 9 of the Additional Information and the council will be reconsulted in relation to these matters.

The revisions to the proposed layout have a number of benefits in relation to the proposed development during the construction process as well as during operation. As a result of the revisions to the layout of the proposed development, in comparison with the 2020 EIAR, the possible Prehistoric cemetery MDG7267 has been avoided, with no potential for direct (physical) impacts during construction.

Furthermore, low magnitude impacts on one scheduled monument and one non-designated heritage asset, resulting in adverse operational effects of minor significance, have been designed out as a result of the revised proposed development layout, with no impacts now identified upon MDG8943 Dundoran Hill fort (through the removal of T1-T7 leaving important views of this asset unaltered) and upon SM714 Wamphray Motte (through deletion of T1-T7, T35, T37 and T38 leaving important views of this asset unaltered).

11. Ornithology

Existing Photography: Viewpoint 7 Annandale Water Services, J16 A74(M)

CWL have undertaken extensive ornithological survey work, across the whole development site which commenced in 2017 for a 2 year period, followed by some additional fieldwork in 2020. All activity was documented in the original Environmental Impact Assessment which was submitted in November 2020 alongside an impact assessment. The EIAR identified potential impacts on bird species and their habitats, as a result of the construction and operation of the wind farm, with mitigation measures proposed to reduce or eliminate these risks.

Concern was expressed through consultation with NatureScot and RSPB on the potential impacts on a number of bird species, primarily Golden Eagles and Black Grouse.

NatureScot did not object but raised concerns on the impacts that the proposed development may have on Golden Eagles, Osprey and Black Grouse and recommended mitigation measures to offset any potential impacts. RSPB objected to the proposed development due to the potential collision risk and habitat loss of Golden Eagles and the potential impacts on Ospreys and Black Grouse.

Scoop Hill Community Wind Farm is located within the Southern Uplands which is also an area where the South of Scotland Golden Eagle Project has been operational since 2018. The project aims to reintroduce and increase the number of golden eagles in the Southern Scotland region.

CWL has carried out a considerable amount of work in assessing the potential impacts on Golden Eagles, working alongside expert independent ornithologists, as well as taking on board recommendations from NatureScot that have informed the subsequent changes to the wind farm layout.

Following a number of meetings with NatureScot and discussions about the mitigation options available for the proposed development the applicant decided to remove 10 turbines, T1-T10, from the west of the scheme, together with T35, T37 and T38. Removal of these turbines from the open ground takes on board NatureScot and RSPB recommendations to make changes to the wind farm layout and CWL has applied mitigation through design, as per the Mitigation Hierarchy table.

The removal of turbines from the open ground on the west of the development is also beneficial to black grouse and the recorded lek sites, which was raised as an area of concern by the RSPB.

Overall, a net total of 15 turbines have been removed from the proposed development, 10 turbines from the west, 3 turbines from the south west and 4 turbines from the south. These changes mean that the impacts on various bird species have now been reduced and this is assessed within Section 7 of the AI submission.

12. Summary

Photography: View from Crooked Road

Since 2020, when the s36 Application for Scoop Hill Community Wind Farm was submitted, the applicant, CWL Energy Limited, has engaged with a range of consultees, interest groups and members of the public to understand their response to the proposals. In addressing the feedback given, the applicant has modified the wind farm layout in an attempt to balance environmental and energy generation considerations. As a consequence of this consultative approach, the number of turbines has been reduced from 75 in the original layout to 60 in the finalised proposals.

This DAS outlines the process of consultation and review undertaken by the applicant, that has led to the further mitigation set out in the 2023 Additional Information submission which assesses the removal of 17no. turbines (and the addition of two) in the revised proposed development.

The consequence of the turbine removal is to reduce the landscape and visual effects of the revised proposed development as they are experienced from a wide area surrounding the north western, south western and southern side of the application site. The benefits of the reduction are to draw back the edge of the wind farm from the interface between the uplands and Annandale Foothills, in an area that is visible from Moffat and Annandale, while greatly reducing the landscape and visual effects within the Dryfe Water valley. The change to the wind farm results in some significant reduction in the overall findings of landscape and visual effects and valuable mitigation is secured across a wide range of landscape and visual receptors, including in particular the town of Moffat. Some substantial benefit also arises in terms of the likely visual effects on the amenity of residential properties around the wind farm. The removal of turbines from the fringes of the uplands has discernibly reduced the magnitude of landscape and visual effects that would arise, as well as significantly reducing and, in some cases, removing impacts on cultural heritage assets.

A material benefit also arises from the reduced aviation lighting scheme which would remove all significant visual effects at night when the aviation lights are operating in the 200cd reduced intensity mode (when clear visibility prevails). Alongside the other mitigation of dimming to 10% of operational capacity, and horizontal beam control, the revised aviation lighting scheme would bring valuable mitigation.

The DAS also outlines how the concerns of NatureScot and the RSPB have been addressed through the layout revisions. The DAS demonstrates that environmental effects associated with the revised proposed development have been avoided or minimised through the design evolution process. The final design solution for the revised proposed development responds to the specific characteristics, qualities and sensitivities of the landscape. Whilst the proposed development has a large footprint, it is also contained within a large scale upland landscape which provides a good level of containment to the visibility and experience of the revised proposed development from the surrounding landscape. This is underpinned by strategic support for wind farm development on the site in the Capacity Study.

The very nature of wind farms means that some localised effects on landscape character and visual amenity may remain even after the best design practice and mitigation have been taken into account. These have been identified and assessed within the Additional Information. Overall, OPEN is of the view that the Scoop Hill Community Wind Farm is appropriate in terms of its design. The careful design review process for the revised scheme has avoided and/or minimised environmental effects within the surrounding area, whilst optimising the potential for the site to secure a significant sustainable development.

Optimised Environments ltd

Edinburgh Office

Quartermile Two | Level 2 | 2 Lister Square | Edinburgh | EH3 9GL
t 0131 221 5920

London Office

Unit 6 | 36-42 New Inn Yard | Shoreditch | London | EC2A 3EY
t 0203 984 4022

Manchester Office

86 Princess Street | Manchester | M1 6NG
t 0161 696 7550

www.optimisedenvironments.com

Optimised Environments Ltd. Registered in Scotland SC359690.
Registered address: Quartermile Two, Level 2, 2 Lister Square, Edinburgh, EH3 9GL

open
optimised environments
PART OF SLR