

Appendix 4.2: Residential Visual Amenity Assessment



EDF Energy Renewables Ltd

Dunside Wind Farm EIA Report

Appendix 4.2: Residential Visual Amenity Assessment

Final report

Prepared by LUC

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Chapter 1

Residential Visual Amenity Assessment

Introduction

4.2.1 This Residential Visual Amenity Assessment (RVAA) describes the change in views likely to be experienced by residents of properties up to 3 kilometres (km) (as requested by Scottish Borders Council) from the Proposed Development. The RVAA should be read in conjunction with **Chapter 4: Landscape and Visual Impact Assessment** of the Environmental Impact Assessment (EIA) Report.

4.2.2 The RVAA was undertaken in accordance with the principles contained within the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3)¹ and Landscape Institute RVAA Technical Guidance Note 2/19 (LI TGN 2/19)². The approach was also informed by numerous decisions made following public inquiries into wind energy proposals in Scotland and elsewhere in the UK. LI TGN 2/19 includes reference to Enifer Downs Wind Farm, and the way that Residential Amenity was first addressed, by Inspector Lavender. Paragraph A1.12, page 21, of the guidance states:

"...he observed that: "when turbines are present in such number, size and proximity that they represent an unpleasantly overwhelming and unavoidable presence in main views from a house or garden, there is every likelihood that the property concerned would come to be widely regarded as an unattractive and thus unsatisfactory (but not necessarily uninhabitable) place in which to live." A1.13 In coming to his decision Inspector Lavender considered the extent to which:

- *the visual experience from the dwelling and garden may be comparable to "actually living within the turbine cluster" rather than a turbine cluster being present close by; or*
- *the experience of the turbines is "unpleasantly overwhelming and unavoidable".*

4.2.3 Whilst the approach to be taken, and language used, was developed further by LI TGN 2/19, reference to this first case continues. This has come to be known as the 'Lavender Test'.

4.2.4 GLVIA3 notes the need for a 'residential amenity assessment' to consider the effects of development on private properties (GLVIA3, Page 107, Para. 6.17). This is noted to include an assessment of visual effects, although is separate from Landscape and Visual Impact Assessment (LVIA).

4.2.5 LI TGN 2/19 explains that: *"the purpose of RVAA is to provide an informed, well-reasoned answer to the question: "is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or 'Residential Amenity'?"* (LI TGN 2/19, Page 5, Para. 2.1).

4.2.6 The RVAA does not consider other components of residential amenity, such as noise, dust, or shadow flicker, which are dealt with in the appropriate chapters of the EIA Report.

4.2.7 Findings of significant effects on views or visual amenity from a property do not automatically imply the need for further assessment. However, for properties likely to experience a high magnitude of visual change and which are in proximity to a development, undertaking a RVAA may be appropriate. The scope of the RVAA, including the 3 km study area, was set out in the Scoping Report (February 2022) and agreed through consultation with statutory consultees.

4.2.8 The methodology for the RVAA is set out below along with the scope of the assessment. The assessment concludes with a summary of the findings. The RVAA is supported by illustrative wirelines from each property / property group, included in **Volume 3b** of the EIA Report.

¹ Landscape Institute and the Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3).

² Landscape Institute (2019). Technical Guidance Note 02/19, Residential Visual Amenity Assessment.

Methodology

4.2.9 The methodology, which reflects that described in LI TGN 2/19, is summarised as follows:

- Identification of properties to be considered (defining the study area and scope);
- Collation of baseline information from maps and aerial photographs and preparation of wirelines, to inform field survey;
- Field survey to collate information in relation to baseline views and visual amenity from each property;
- Assessment of the magnitude of change in visual amenity likely to be experienced at the property; and
- For properties experiencing a medium or high magnitude of change, a judgement of whether the predicted change in views and visual amenity reaches the 'Residential Visual Amenity Threshold' described in LI TGN 2/19, i.e. "*is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or 'Residential Amenity'?*"³;

4.2.10 The following section sets out the methodology and the factors considered in more detail.

Study Area

4.2.11 The assessment includes consideration of the changes in views and visual amenity from all properties up to approximately 3 km of the proposed turbines. Although there is the potential for significant visual effects to occur beyond this distance, such effects are not considered likely to affect 'living conditions'⁴. This opinion was informed by experience, observations made on Site and an understanding of the Proposed Development.

4.2.12 Properties were identified using Ordnance Survey (OS) AddressBase Plus data and verified in the field. Properties (including their curtilage and access drives) with no theoretical visibility, as indicated by the Zone of Theoretical Visibility (ZTV) map in **Figure A4.2.1**, were not considered in the RVAA.

Desktop Studies

4.2.13 For the purposes of this RVAA, the visual amenity experienced at a property is made up of a combination of the type, nature, extent and quality of views that may be available from the property and its domestic curtilage (e.g. gardens and access drives).

4.2.14 OS maps, aerial imagery and Google Streetview were used for desktop research to assist with recording information such as the location of the residential elements of each property, the orientation of the property, and the extent of its curtilage.

4.2.15 In considering baseline visual amenity, the following was examined:

- The nature and extent of the available existing views (including main/principal views) from the property and its garden, including the proximity and relationship of the property to surrounding landform, landcover and visual foci; and
- Views experienced when approaching or departing from the property via its driveway and/or access roads, if applicable.

Field Surveys

4.2.16 Field surveys were undertaken from publicly accessible locations between September 2022 and April 2023 to determine the following baseline information:

- The orientation and likely views from each property (including principal/primary aspects and presence of windows);
- Layout and orientation of the gardens and property curtilage;

³ The LI TGN 2/19 notes that "*the factors which might contribute to the threshold being reached, or the way in which these are expressed, may be different for different types of development (for example, one might use terms such as 'overwhelming/overbearing' for tall structures, or 'overly intrusive' for a development overlooking a garden or principal room)*" (paragraph 2.2).

⁴ LI TGN 2/19 notes that "*Residential Amenity comprises a range of visual, aural, olfactory and other sensory components. Development can cause effects on one or more components of Residential Amenity, for example effects of noise, dust, access to daylight, vibration, shadow flicker, outlook and visual amenity. Sometimes this is referred to as 'living conditions'*" (paragraph 1.4).

- Access location, and likely views from private or shared driveways or access tracks;
- The nature of existing views from the properties and their gardens, including the proximity and relationship of the properties to surrounding landform, landcover and visual foci and the scenic quality of views; and
- Potential screening provided by local variations in topography, the built environment and vegetation/tree cover within the surrounding landscape.

4.2.17 Fieldwork was undertaken between winter and summer. This enabled the 'maximum case' scenario to be assessed, on the basis that any available screening offered by deciduous vegetation was at a minimum during winter months.

Preparation of Accompanying Visualisations

4.2.18 On the basis of guidance included in LI TGN 2/19, indicative wirelines based on a bare ground digital terrain model were generated, using Resoft WindFarm software, from all individual properties and property groups that were taken forward for detailed assessment. The illustrative wirelines are presented in **Volume 3b**. They are centred on the Proposed Development and illustrate a 90° included angle of view and 1.5 metres (m) viewing height from each location.

4.2.19 The illustrative wirelines show the proposed turbines only, with turbines numbered for ease of reference. No other components of the Proposed Development have the potential to affect 'living conditions'. As such they are not included in the wirelines.

4.2.20 Due to its proximity and potential scope for cumulative interactions in views from properties within the RVAA study area, the operational Fallago Rig Wind Farm is also included in the wirelines, where visible within the 90° view focused towards the Proposed Development. No other operational, consented or proposed (at application or appeal) wind farms are visible within these views.

4.2.21 If cumulative interactions between the Proposed Development and Fallago Rig Wind Farm are deemed to contribute to potentially overbearing effects on residential visual amenity, then this is highlighted in the text.

4.2.22 The wirelines are not necessarily representative of the primary outlook of the property and do not show features such as buildings and trees that may provide screening or filtering of views. It should therefore be noted that these indicative wirelines represent a 'maximum visibility scenario' which may potentially be experienced from the property or its curtilage. This should be borne in mind when using the images. The principal/primary outlook of residential properties is discussed in the tables for each property in the assessment section which follows below.

Assessment of Potential Changes to Views and Visual Amenity

Sensitivity of Residential Receptors

4.2.23 GLVIA3 advocates an approach which considers the overall sensitivity of visual receptors (people) in terms of *"both their susceptibility to change in views and visual amenity and also the value attached to particular views"* (GLVIA3, Page 113, Para. 6.31), whilst stating that visual receptors most susceptible to change are likely to include *"residents at home"* (GLVIA3, Page 113, Para. 6.33).

4.2.24 Taking account of the purposes of this RVAA, and taking a precautionary approach, all people at their place of private residence are considered to be of **high** sensitivity to changes in their views and visual amenity. As a consequence, no individual assessment of sensitivity is outlined in the assessment which follows.

Magnitude of Change to Views and Visual Amenity

4.2.25 The likely changes in views and visual amenity as a result of the Proposed Development are considered with reference to the individual wirelines from each property (see **Volume 3b**). A judgement on the magnitude of visual change which will be experienced is made, and the change in views summarised, with reference, as appropriate, to the following factors which are set out in GLVIA3 (Page 115, Para. 6.39-6.40):

- *"scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the Proposed Development;*

- *degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture;*
- *angle of view in relation to the main activity of the receptor;*
- *distance of the viewpoint from the Proposed Development; and*
- *extent of the area over which the changes would be visible."*

4.2.26 The following additional factors are specific to the type of development proposed:

- Type and nature of the available view (e.g. panoramic, framed);
- Relative size and proximity of turbines, or other infrastructure;
- Number, extent and composition of turbines visible (and presence of screening);
- Position of turbines in views from the property e.g. whether in the principal/primary outlook from the property;
- Proportion of the skyline occupied by the turbines;
- Direction (including the aspect) of the view affected; and
- Density and spacing of turbines and their overall composition in the view.

4.2.27 For each property or group of properties, the evaluation consists of:

- A description of the property and of its location and context;
- A description of the likely existing available views and visual amenity from the property and its domestic curtilage, including gardens and private or shared access drives; and
- A description of the likely effect on views and visual amenity resulting from the Proposed Development, as well as other existing and proposed schemes included in the study area and likely to influence the decision-making process.

4.2.28 The detailed information for each property or group of properties concludes with a judgement with respect to the visual component of residential amenity or 'living conditions' and whether the 'Residential Visual Amenity Threshold' is breached. It is intended that this judgement may assist the decision maker in coming to the wider planning judgement on overall residential amenity, when considered within the context of other components (e.g. noise, shadow flicker, dust).

4.2.29 Informed by the preparatory desk work and supported by maps and wirelines, an assessment was undertaken during field surveys of the magnitude of the likely change in visual amenity that may result from the introduction of the Proposed Development into the local landscape and the view(s) from each property or property group.

4.2.30 Magnitude of visual change is expressed on a relative scale, as set out in **Table A4.2.1** below, which highlights the differences between the types of change experienced in views from residential properties examined as part of this RVAA. The existing and proposed view from each property is described, and the likely relative magnitude of change (high, medium, low, barely perceptible) arising from the Proposed Development is determined. Reference to other wind farm development is made where appropriate. The nature of existing and predicted views (open, enclosed, panoramic, focused, framed etc.) affects the relative magnitude of change and is taken on board in reaching that judgement. The RVAA looks at the range of views likely to be available from the house and its curtilage, and considers potential effects on all of these.

Table A4.2.1: Magnitude of change in views and visual amenity

Magnitude of Change in Visual Amenity	Description
High	The Proposed Development would be a key/defining element in the view.
Medium	The Proposed Development would be clearly discernible but would not be a key/defining element of the view.

Magnitude of Change in Visual Amenity	Description
Low	The Proposed Development would be visible and would form a minor element of the view.
Barely Perceptible	The Proposed Development may go unnoticed as a minor element of the view, or is not visible.

4.2.31 The RVAA concludes, for properties predicted to experience a **medium or high** magnitude of change, with a judgement as to the potential effect on 'living conditions', or residential visual amenity. This corresponds to the 'Residential Visual Amenity Threshold' as described in LI TGN 2/19.

4.2.32 For properties experiencing a **low or low to medium** magnitude of change, it considered that there is no potential for 'living conditions' to be affected, and this final stage is therefore not undertaken.

Properties Considered in the Assessment

4.2.33 There are seven habitable residential buildings identified within the 3 km study area using OS Address Data, and ZTV analysis confirmed theoretical visibility from all of them. To provide a comprehensive appraisal, properties which sit just beyond the stated study area of 3 km (within 3.1 km of the nearest proposed turbine) were considered. **Table A4.2.2** below lists all of the properties examined as part of this study. For each property, **Table A4.2.2** contains a reference number (which correlates to those included on **Figure A4.2.1**), the property name (as informed by OS AddressBase Plus data) and details of location. Computer modelling was used to provide details of distance, viewing direction and potential visibility of the Proposed Development. This potential visibility of the wind turbines is illustrated in the wirelines in **Volume 3b**.

4.2.34 Following site survey and analysis of illustrative wirelines, notes were prepared for each of the properties regarding the potential magnitude of change which would be experienced at these properties. Where the magnitude of change is judged to be **low or medium to low**, commentary on these findings is provided in **Table A4.2.2** below. These receptors were not carried forward for more detailed assessment. These properties are shaded in grey in the table.

Table A4.2.2: Properties Considered in the Assessment

Ref	Name	Approximate grid ref	Distance to nearest turbine	Magnitude of change indicating if the property is carried forward to detailed assessment
P1	Killpallet	362923 660544	1.2 km	Low – only the hub and blades of one turbine (T3) would be visible due to intervening topography. Blocks of forestry immediately south-west of the property are likely to provide some screening in views towards the Site. However, this is considered further in the assessment to take account of proximity and the availability of aviation lighting in views.
P2	Byrecleugh	362794 658001	1.5 km	High – considered further in the assessment.
P2a	Byrecleugh Farm Cottage North	362827 658077	1.6 km	High – considered further in the assessment.
P2b	Byrecleugh Farm Cottage East	362912 658032	1.6 km	High – considered further in the assessment.
P2c	Byrecleugh Keepers House	363075 657923	1.6 km	Low – a belt of woodland between the property and proposed turbines would largely screen views

Ref	Name	Approximate grid ref	Distance to nearest turbine	Magnitude of change indicating if the property is carried forward to detailed assessment
				towards the Site. However, this is considered further in the assessment to take account of seasonal changes in leaf cover.
P3	Trottingshaw	364789 658163	3.1 km	Medium – considered further in assessment
P4	Scarlaw	365235 656476	3.1 km	Low – a belt of woodland between the property and proposed turbines would largely screen views towards the Site. However, this is considered further in the assessment to take account of seasonal changes in leaf cover.
P5	Dye Cottage	365001 658139	3.3 km	Low – dense deciduous woodland and intervening landform between the property and proposed turbines would largely screen views towards the Site. Although seasonal changes in levels of screening by foliage may lessen the level of filtering of views, this property is not considered further due to distance.
P6	Dunside Cottage	365100 658113	3.3 km	Low – deciduous woodland and intervening landform between the property and proposed turbines would largely screen views towards the Site. This property has not been considered further due to the distance.

Assessment of Effects on Residential Visual Amenity

4.2.35 This section sets out the detailed assessment of effects on views and visual amenity for each individual property or group of properties taken forward for detailed assessment in accordance with **Table A4.2.2**. Below, **Tables A4.2.3 to A4.2.9** present the detailed assessments. The assessment should be read in conjunction with the accompanying illustrative wirelines (see **Volume 3b**).

Table A4.2.3: Property P1

Property P1: Killpallet		
Grid reference	NGR 362951 660609	
Direction of view to the Proposed Development	South-west	
Distance to nearest turbine (from the property) and turbine no.	1.2 km	T3
Number of turbines theoretically visible	Hubs visible	1
	Sets of blades visible	1
Description of property, location and context:		
<ul style="list-style-type: none"> ■ Situated on the lower western slopes of the incised Killpallet Burn landform, east of Killpallet Rig (447 m Above Ordnance Datum (AOD)) and accessed via a private track. Situated approximately 1 km north-east of the Site boundary. ■ Detached, 1.5 storey property with outbuildings to the south, and gardens mainly to the west and north; 		

Property P1: Killpallet	
<ul style="list-style-type: none"> ■ Oriented to the east (front) and west (back); and ■ Outbuildings and mature forestry are located at the southern edge of the property. The ground to the south and west sharply rises, forming part of the Killpallet Rig landform and providing an enclosing feature. Views north-east are more open, directed down Killpallet Burn. 	
Description of existing views and visual amenity:	
<p>The primary outlook of this property appears to be to the east, towards the incised form of Killpallet Burn. To the west, secondary views out the back are directed towards sharply rising moorland, with a patchwork of heather. Views north follow along the access track, which broadly parallels Killpallet Burn. Scattered trees are located immediately north of the property. Views south towards the Site are generally constrained by rising moorland and a block of forestry, which appears to wrap around to the south-east. There are no operational wind turbines visible in views from this property.</p>	
Description of likely effect on views and visual amenity as a result of the Proposed Development:	
<p>From this location there would be theoretical visibility of 1 turbine hub and blade (T3), seen at a distance of 1.2 km to the south-west. The turbine would not occupy a large extent of the horizon, and would be seen in oblique views, as the primary outlooks from the house (east and west) are directed away from the Site. Given the proximity to the turbine, where visible, the turbine would appear over the rising landform and would be a notable new feature. However, intervening landform would mostly screen the turbine, and forestry would filter views to the south-west. Views from the access road to the property would have direct views, directed down the valley form of Killpallet Burn, and affording more frequent views towards the Proposed Development. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p> <p>If a taller hub height of 139 m was used, 1 turbine of the Proposed Development (hub and blades) would be theoretically visible from this viewpoint. A steady red light would be seen on the hub of one turbine (T3) at night. This is also considered in reaching the conclusions set out below.</p>	
Conclusion with respect to the Proposed Development	
<p>The magnitude of visual change would be low. The hub of 1 turbine and blades of the Proposed Development would be visible from the property curtilage and access track. Forestry and intervening landform would filter and screen views towards the turbine, which would only be seen in oblique views from the property. Despite the proximity of 1.2 km, it would not appear overwhelming or oppressive due to the availability of open views from the primary outlooks of the property. The Proposed Development would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold.</p>	

Table A4.2.4: Property P2

Property P2: ByreCleugh		
Grid reference	NGR 362794 658001	
Direction of view to the Proposed Development	West	
Distance to nearest turbine (from the property) and turbine no.	1.5 km	T15
Number of turbines theoretically visible	Hubs visible	11
	Sets of blades visible	15

Property P2: Byrecleugh	
Description of property, location and context:	
<ul style="list-style-type: none"> ■ Situated on the lower slopes of the incised Dye Water landform, south of Pyatshaw Ridge (375 m AOD), and accessed via a private track. Contained by the Site, within the estate landholding. ■ Detached, 1.5 storey property (Grade II listed) with outbuildings to the west and east, and gardens mainly to the south; ■ Oriented to the south (front) and south-east (back); and ■ Large farm buildings and mature trees provide enclosing features at the western edge of the property. However, the siting of the property on a localised knoll overlooking the Dye Water valley affords more open, south-westerly views from the front (south) of the property. 	
Description of existing views and visual amenity:	
<p>The primary outlook of this property appears to be to the south, overlooking Dye Water and the associated valley landform. Across Dye Water to the south, gradually rising fields of pasture with occasional belts of woodland can be seen following incised burns. Views to the west are directed through the valley landform of Dye Water, over rolling heathery hills and the rising form of Meikle Law (468 m AOD) in the middle distance. Views north are filtered by mature trees and partially screened by the rising landform of Pyatshaw Ridge (375 m AOD). Views to the east are somewhat contained by the Dye Water valley and areas of riparian woodland, and follow the access track paralleling Dye Water. One turbine at the existing Fallago Rig is barely perceptible above the horizon to the west.</p>	
Description of likely effect on views and visual amenity as a result of the Proposed Development:	
<p>From this location there would be theoretical visibility of up to 11 turbine hubs and up to 15 blades to the west and south-west. They would occupy a large extent of the horizon in direct and oblique views from the front (south) of the property, and in more direct views from the west side of the property and property curtilage. However, views to the west would be partially screened by intervening vegetation and landform. Views from the access road to the property would have direct views, directed down the meandering valley form of Dye Water and affording frequent glimpsed views towards the Proposed Development. Where visible, turbines to the west of the property would be seen in the middle distance and would form new and prominent features in the view as they extend along the horizon, across upland pasture and moor. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p> <p>If a taller hub height of 139 m was used, up to 11 turbine hubs and 15 blades of the Proposed Development would be theoretically visible from this viewpoint. Steady red lights would be seen on the hubs of six turbines (T3, T6, T8, T9, T14 and T15) at night. This is also considered in reaching the conclusions set out below.</p>	
Conclusion with respect to the Proposed Development	
<p>The magnitude of visual change would be high. The hubs of up to 11 turbines and blades of a further 4 turbines of the Proposed Development would be visible from the primary outlook of the property, its curtilage, and access track. Despite the prominence of the Proposed Development in primary views from the property, it would not appear overwhelming or oppressive due to the distance of 1.5 km between the property and the nearest turbine, and the availability of open views in other directions. The Proposed Development would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold.</p>	

Table A4.2.5: Property P2a

Property P2a: Byrecleugh Farm Cottage, North	
Grid reference	NGR 362827 658077
Direction of view to the Proposed Development	West

Property P2a: Byrecleugh Farm Cottage, North		
Distance to nearest turbine (from the property) and turbine no.	1.6 km	T15
Number of turbines theoretically visible	Hubs visible	9
	Sets of blades visible	13
Description of property, location and context:		
<ul style="list-style-type: none"> ■ Situated on the lower slopes of the incised Dye Water landform, south of Pyatshaw Ridge (375 m AOD), and accessed via a private track. Contained by the Site, within the estate landholding; ■ Detached, 1.5 storey property with outbuildings and gardens mainly to the north; ■ Oriented to the south (front) and west; and ■ Mature trees, rising landform, and built development provide partially enclosing features to the west of the property. The property is located on a small knoll, with more open views to the south across Dye Water from the front (south) of the property. Gradually rising landform to the north and west somewhat screens outward views. 		
Description of existing views and visual amenity:		
<p>The primary outlook of this property appears to be to the west across rising moorland, and to the south overlooking Dye Water and the associated valley landform. Views to the west are directed across the rising ground at the base of Byrecleugh Ridge, beyond which the meandering valley landform of Dye Water can be seen. Across Dye Water to the south, gently rising pasture fields with occasional belts of woodland can be seen following incised burns. Views north are partially screened by the rising landform of Pyatshaw Ridge (375 m AOD), and are directed up the incised form of Byrecleugh Burn. Views to the east are mostly contained by the Dye Water valley and areas of riparian woodland, and follow the access track paralleling Dye Water. No operational wind farms within 20 km of the Proposed Development are visible from the property.</p>		
Description of likely effect on views and visual amenity as a result of the Proposed Development:		
<p>The Proposed Development would introduce theoretical visibility of up to 9 turbine hubs and 13 blades to the west and south-west. They would occupy a large extent of the horizon in direct and oblique views from the front (south) of the property, and in more direct views from the west side of the property and property curtilage. Views to the south-west would be partially screened and filtered by built development and mature trees, as well as intervening landform. Views from the access road to the property would have direct views down the meandering valley form of Dye Water and allowing frequent glimpsed views towards the Proposed Development, although partially screened by intervening landform. Turbines to the west of the property would be visible in the middle distance and would form prominent features in the view as they extend along the horizon, across upland pasture and moor. No consented wind farms (within 20 km of the Proposed Development) would be visible from this property. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p> <p>If taller hub height of 139 m was used, up to 9 turbine hubs and 13 blades of the Proposed Development would be theoretically visible from this viewpoint. Steady red lights would be seen on the hubs of five turbines (T3, T8, T9, T14 and T15), at night. This is also considered in reaching the conclusions set out below.</p>		
Conclusion with respect to the Proposed Development		
<p>The magnitude of visual change would be high. The hubs of up to 9 turbines and blades of a further 4 turbines of the Proposed Development would be visible from the primary outlook of the property, its curtilage, and access track. Despite the prominence of the Proposed Development in primary views from the property, it would not appear overwhelming or oppressive due to the partial screening by intervening landform and filtering of views by built development and mature trees. Additionally, the distance of 1.6 km between the property and the nearest turbine, and the availability of open views in other</p>		

Property P2a: Byrecleugh Farm Cottage, North

directions would help mitigate visual effects. The Proposed Development **would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold.**

Table A4.2.6: Property P2b

Property P2b: Byrecleugh Farm Cottage, East		
Grid reference	NGR 362912 658032	
Direction of view to the Proposed Development	West	
Distance to nearest turbine (from the property) and turbine no.	1.6 km	T15
Number of turbines theoretically visible	Hubs visible	12
	Sets of blades visible	15
Description of property, location and context:		
<ul style="list-style-type: none"> ■ Situated on the lower slopes of the incised Dye Water landform, south of Pyatshaw Ridge (375 m AOD), and accessed via a private track. Contained by the Site, within the estate landholding; ■ Detached, 1 storey property with outbuildings and gardens mainly to the north; ■ Oriented to the south-west (front); and ■ A low stone wall encircles the property, with limited trees or vegetation in the immediate surrounds. The property is located on the falling slopes of Pyatshaw Ridge, and east of the Byrecleugh Burn. Scattered riparian vegetation along the burn filters views to the west, with more open views to the south and south-west towards Dye Water. Rising landform to the north and east provides partial enclosure on these fronts. 		
Description of existing views and visual amenity:		
<p>The primary outlook of this property appears to be to the west across rising moorland, and to the south overlooking Dye Water and the associated valley landform. Views to the west are directed across the rising ground at the base of Byrecleugh Ridge, beyond which the meandering valley landform of Dye Water can be seen. Across Dye Water to the south, gently rising pasture fields with occasional belts of woodland can be seen following incised burns. Views north are partially screened by the rising landform of Pyatshaw Ridge (375 m AOD), and are directed up the incised form of Byrecleugh Burn. Views to the east are mostly contained by the Dye Water valley and areas of riparian woodland, and follow the access track paralleling Dye Water. No operational wind farms within 20 km of the Proposed Development are visible from the property.</p>		
Description of likely effect on views and visual amenity as a result of the Proposed Development:		
<p>The Proposed Development would introduce theoretical visibility of up to 12 turbine hubs and 15 blades to the west and south-west. They would occupy a large extent of the horizon in direct views from the front (south-west) of the property, and in direct views from the south side of the property and curtilage. Scattered vegetation along Byrecleugh Burn would filter views to the south-west and would partially screen turbines in the north of the Site. Views towards turbines in the south of the Site would be most exposed, and would be seen to extend above would form prominent features in the view as they extend along the horizon, across upland pasture and moor. Views from the access road to the property would have direct views down the meandering valley form of Dye Water and allowing frequent glimpsed views towards the Proposed Development, although partially screened by intervening landform. No consented wind farms (within 20 km of the Proposed Development) would be visible from this property. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p>		

Property P2b: Byrecleugh Farm Cottage, East
If a taller hub height of 139 m was used, up to 9 turbine hubs and 13 blades of the Proposed Development would be theoretically visible from this viewpoint. Steady red lights would be seen on the hubs of five turbines (T3, T8, T9, T14 and T15) at night. This is also considered in reaching the conclusions set out below.
Conclusion with respect to the Proposed Development
The magnitude of visual change would be high . The hubs of up to 12 turbines and blades of a further 3 turbines of the Proposed Development would be visible from the primary outlook of the property, its curtilage, and access track. Despite the prominence of the Proposed Development in primary views from the property, it would not appear overwhelming or oppressive due to the partial filtering by vegetation and built development, as well as partial screening by intervening landform. Additionally, the distance of 1.6 km between the property and the nearest turbine, and the availability of open views in other directions would help mitigate visual effects. The Proposed Development would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold .

Table A4.2.7: Property P2b

Property P2b: Byrecleugh Keepers House		
Grid reference	NGR 363075 657923	
Direction of view to the Proposed Development	West	
Distance to nearest turbine (from the property) and turbine no.	1.6 km	T15
Number of turbines theoretically visible	Hubs visible	13
	Sets of blades visible	15
Description of property, location and context:		
<ul style="list-style-type: none"> ■ Situated on the lower slopes of the incised Dye Water landform, just north of the watercourse and south of Pyatshaw Ridge (375 m AOD), and accessed via a private track. Contained by the Site, within the estate landholding. ■ Detached, 1.5 storey property with outbuildings to the south, and gardens mainly to the east and west; ■ Oriented to the to the north-east (front) and south-west (back); and ■ Dense forestry provides enclosing features at the northern, western and southern edges of the property. Outbuildings along the southern edge of the property provide additional filtering of views to the south. The siting of the property within the bottom of the meandering valley landform of Dye Water provides additional enclosure through the surrounding slopes. 		
Description of existing views and visual amenity:		
<p>The primary outlook of this property appears to be to the north-east, away from the Proposed Development and across rising moorland slopes to the north-east. Views to the south-west from the back of the property are towards dense woodland and the Dye Water, which screen and filter outward views. Views south are filtered by outbuildings and the wooded Dye Water. Where glimpsed views are afforded, there are longer distance views across rising moorland with patches of heather. One blade tip of Fallago Rig is theoretically visible to the west from this location, although in practice visibility would be reduced due to intervening landform and vegetation.</p>		
Description of likely effect on views and visual amenity as a result of the Proposed Development:		

Property P2b: Byrecleugh Keepers House

The Proposed Development would introduce theoretical visibility of up to 13 turbine hubs and 15 blades to the west and south-west, at a distance of 1.6 km to the nearest turbine (T15). The turbines would occupy a large extent of the horizon in direct and oblique views from the back (south-west) of the property. Views from the access road to the property would have direct views, directed down the meandering valley form of Dye Water and allowing frequent glimpsed views towards the Proposed Development. Turbines to the west of the property would be visible in the middle distance and would form prominent features in the view as they extend along the horizon, across upland pasture and moor. There would be no visibility of the Proposed Development from the front of the property, as views are in the opposite direction of the proposed turbines. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.

If a taller hub height of 139 m was used, up to 14 turbine hubs and 15 blades of the Proposed Development would be theoretically visible from this viewpoint, reflecting a marginal increase in theoretical visibility due to increased hub height. Steady red lights would be seen on the hubs of seven turbines (T1, T3, T6, T8, T9, T14 and T15) at night. This is also considered in reaching the conclusions set out below.

Conclusion with respect to the Proposed Development

The magnitude of visual change would be **low**. There would be no theoretical visibility of the Proposed Development from the primary outlook of the house, which is oriented away from the Site. The hubs of up to 13 turbines and blades of a further 2 turbines of the Proposed Development would be theoretically visible from the secondary outlook of the property, its curtilage, and access track. However, in practice, actual visibility would be reduced due to intervening vegetation and built development, as well as intervening landform. Despite the prominence of the Proposed Development in secondary views from the property, it would not appear overwhelming or oppressive due to the distance of 1.6 km between the property and the nearest turbine, and the availability of open views in other directions. The Proposed Development **would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold**.

Table A4.2.8: Property P3

Property P3: Trottingshaw		
Grid reference	NGR 364789 658163	
Direction of view to the Proposed Development	West	
Distance to nearest turbine (from the property) and turbine no.	3.1 km	T15
Number of turbines theoretically visible	Hubs visible	8
	Sets of blades visible	12
Description of property, location and context:		
<ul style="list-style-type: none"> ■ Located along the lower southern slopes of Black Hill (381 m AOD) and within the incised valley form of Dye Water, accessed by a private track connecting from Watch Water Reservoir and Duns Road. Approximately 160 m north of the Site boundary. ■ Detached, 1.5 storey property with gardens mainly to the west; ■ Oriented to the east (front) and west (back); and ■ Forestry, riparian vegetation along Trottingshaw Burn, and gradually rising landform provide partially enclosing features at the western edge of the property. However, the siting of the property overlooking the Dye Water valley affords more open, westerly views from the back (west) of the property. 		

Property P3: Trottingshaw	
Description of existing views and visual amenity:	
<p>The primary outlook of this property appears to the east and the south, overlooking the Dye Water. Further south, the valley form of the Dye Water gives way to rising upland pasture fields and moorland, with occasional riparian woodland present along incised burns. Views to the west follow the Dye Water, over rising landforms which fall from Lamb Hill to the north-west (396 m AOD) and towards Meikle Law in the middle distance. Views north are partially screened by the rising landform of Lamb Hill. Views to the east are partially contained by the Dye Water valley and areas of riparian woodland, and follow the access track paralleling Dye Water. No operational wind farms within 20 km of the Proposed Development are visible from the property.</p>	
Description of likely effect on views and visual amenity as a result of the Proposed Development:	
<p>The hubs of up to 8 turbines, and blades of a further 4 turbines would be visible to the west. They would occupy a large extent of the horizon in direct views from the back (west) of the property. Views from the access road to the property would have direct views, directed down the meandering valley form of Dye Water and allowing frequent glimpsed views towards the Proposed Development. Turbines to the west of the property would be visible in the middle distance and would form prominent features in the view as they extend along the horizon, across upland pasture and moor. No consented wind farms (within 20km of the Proposed Development) would be visible from this property. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p> <p>If a taller hub height of 139 m was used, up to 8 turbine hubs and 12 blades of the Proposed Development would be theoretically visible from this viewpoint. Steady red lights would be seen on the hubs of four turbines (T8, T9, T14 and T15), at night. This is also considered in reaching the conclusions set out below.</p>	
Conclusion with respect to the Proposed Development	
<p>The magnitude of visual change would be medium. Turbines would be visible from the rear of the property, its gardens, driveway and curtilage. Intervening landform and riparian tree cover would partially screen and filter views towards some of the visible turbines. Given the small number of turbines visible, the distance of 3.1 km between the property and the nearest turbine and the availability of open views to the south across the Dye Water, the Proposed Development would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold.</p>	

Table A4.2.9: Property P4

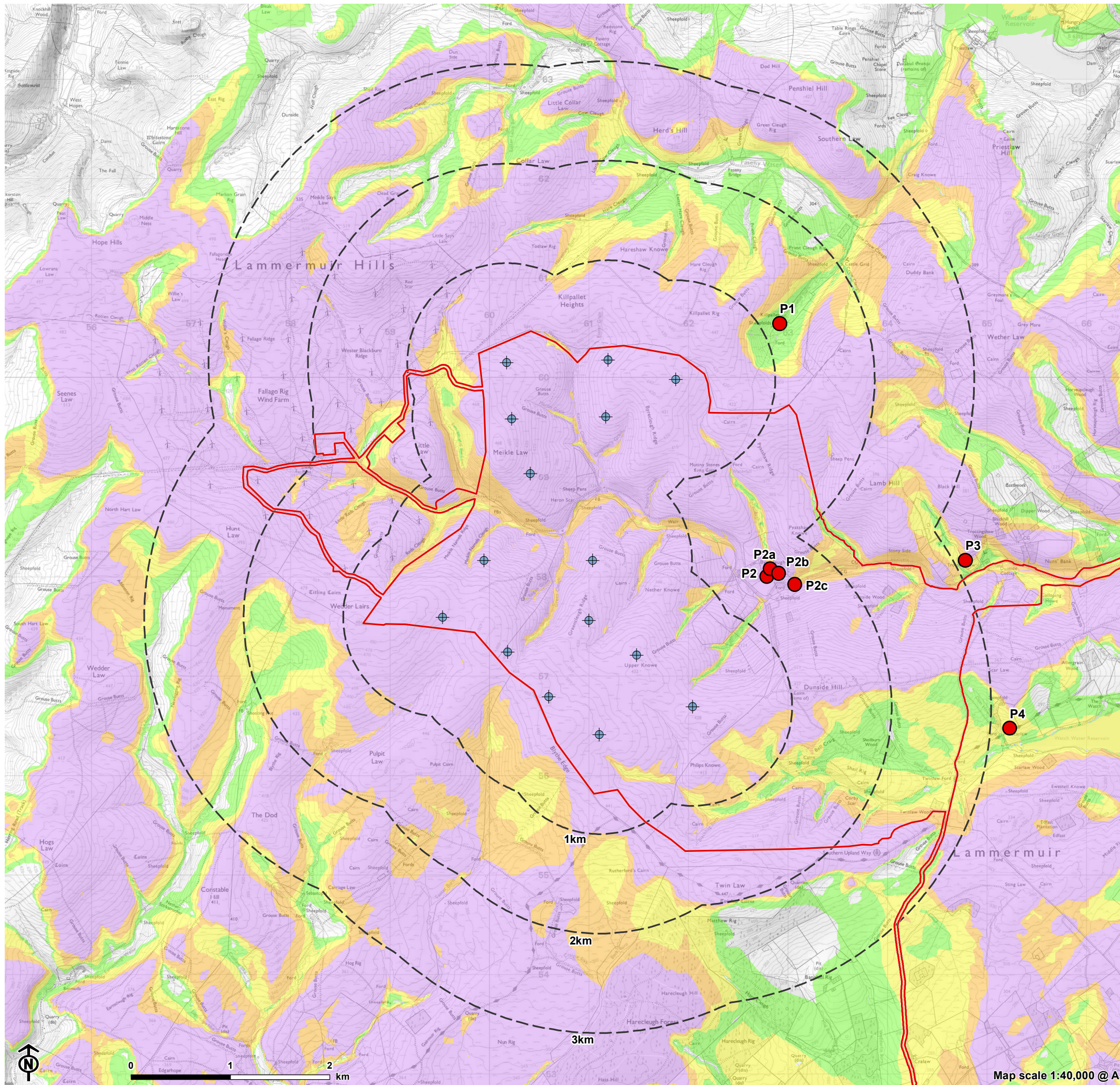
Property P4: Scarlaw		
Grid reference	NGR 344727 605377	
Direction of view to the Proposed Development	West	
Distance to nearest turbine (from the property) and turbine no.	3.2 km	T15
Number of turbines theoretically visible	Hubs visible	3
	Sets of blades visible	6
Description of property, location and context:		
<ul style="list-style-type: none"> Located on the lower southern slopes of Scar Law (367 m AOD) on the northern shore of Watch Water Reservoir, accessed via a private track connecting from the reservoir and Duns Road. Located approximately 450 m to the east of the eastern Site boundary. 		

Property P4: Scarlaw
<ul style="list-style-type: none">■ Detached, 1.5 storey property with outbuildings to the north and west, and gardens mainly to the north and east;■ Orientated to the south (front), and east (back); and■ Woodland bordering the property in the direction of the Proposed Development (west) is likely to provide some screening. Two storey farm building immediately to the west of the primary residence would provide further screening.
Description of existing views and visual amenity:
<p>The primary outlook of this property appears to be to the south (front) overlooking an area of actively grazed pasture which slopes down towards Watch Water Reservoir in the south-east, and towards the rising landform of Sting Law further south. To the west, views are likely to be screened and filtered by intervening woodland, as well as a farm building. No operational wind farms within 20 km of the Proposed Development are visible from the property.</p>
Description of likely effect on views and visual amenity as a result of the Proposed Development:
<p>The hubs of up to 2 turbines and blades of a further 4 turbines would be visible to the west. They would occupy a small extent of the horizon in oblique views from the front of the property, and in more direct views from the west side of the property and property curtilage. Views from the access road to the property would have more direct views, with a gap in the woodland on the western property edge allowing glimpsed views towards the Proposed Development. No consented wind farms (within 20 km of the Proposed Development) would be visible from this property. Residents would also experience night-time effects as a result of the introduction of aviation lighting into rural views.</p> <p>If a taller hub height of 139 m was used, up to 3 turbine hubs and 6 blades of the Proposed Development would be theoretically visible from this viewpoint. Steady red lights would be seen on the hubs of two turbines (T14 and T15), at night. This is also considered in reaching the conclusions set out below.</p>
Conclusion with respect to the Proposed Development
<p>The magnitude of visual change would be medium. The Proposed Development would be visible in close views to the west from secondary outlooks from the property and its curtilage. At a distance of 3.1 km, and given the limited visibility from the primary outlook of the property, the Proposed Development would not appear overwhelming or oppressive and would not breach the residential visual amenity threshold.</p>

Conclusion

4.2.36 Residents at five properties considered in this assessment would experience a **medium or higher** magnitude of change in the view from parts of their property and/or from their gardens, curtilage and access track. When combined with the high sensitivity of the residential receptor, there is the potential for these residential receptors to experience a significant visual effect. However, none of these receptors would be subject to effects on residential visual amenity which are judged to breach the Residential Visual Amenity Threshold described in LI TGN 2/19, i.e. *“is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects ‘living conditions’ or Residential Amenity”*.

Figure A4.2.1: Residential Properties within 3km with Blade Tip Height Zone of Theoretical Visibility (ZTV)



- Site Boundary
 - ⊕ Turbine
 - 1km intervals from outermost turbines
 - Property
 - P1: Killpallet
 - P2: Byrecleugh
 - P2a: Byrecleugh Farm Cottage North
 - P2b: Byrecleugh Farm Cottage East
 - P2c: Byrecleugh Keepers House
 - P3: Trottingshaw
 - P4: Scarlaw
- Theoretical blade tip visibility (220m)**
- 1-4 turbines visible
 - 5-8 turbines visible
 - 9-12 turbines visible
 - 13-15 turbines visible

Notes:
The ZTV is calculated to turbine tip height (220m) from a viewing height of 2m above ground level. The terrain model assumes bare ground and is derived from OS Terrain 5 height data (obtained from Emapsite in 2023). Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcMap 10.8.1