Moorshield Wind Turbines

Appendix 2.1 Landscape and Visual Appraisal

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1 INTRODUCTION

This report presents the findings of a Landscape and Visual Appraisal (LVA) of the proposed Moorshield Wind Turbines. It identifies potential landscape and visual effects and sets out the approach that has been undertaken for the LVA.

The scope and extent of the assessment has been determined by a combination of professional judgement and the Screening Opinion (PREAPP/2019/0139) issued by East Renfrewshire Council (ERC), issued on 5th August 2019.

The LVA was undertaken by Arcus Consultancy Services in February 2020 and reviewed and updated, where necessary, by Optimised Environments Ltd ('OPEN') in May 2023.

This report is supported by the following Technical Appendices:

- Annex A: LVA, Zone of Theoretical Visibility (ZTV), Photography and Photomontage Methodology; and
- Annex B: Figures, Viewpoints and Photomontages.

2 SCOPE OF ASSESSMENT

2.1 The Development

The LVA has been based on the design as shown in Planning Drawing 2 – Site Layout Plan and comprises the construction and operation of three wind turbines, and associated infrastructure, at a site located east of Shieldhill Farm approximately 6 kilometres (km) southwest of Eaglesham in East Renfrewshire (the Site). Within this LVA, the Moorshield Wind Turbines are hereafter referred to as 'the Development'.

With regard to the LVA, the relevant characteristics of the Development include:

- Three wind turbines wind turbines with a maximum blade tip height of 149.9 metres (m) and an indicative hub height of 81.0 m;
- The turbines would be pale grey in colour and have a semi-matt appearance;
- Site access tracks within the wind turbine area, and associated areas for vehicle manoeuvrings. Access to the Site will be via the B764 by way of a purpose-built junction;
- Three turbine foundations requiring indicative excavations of 20.8 m x 20.8 m ;
- Three crane hard standings typically 62 m x 25 m in size, with one adjacent to each turbine location;
- Dimensions of the construction compound will be approximately 45 x 40 m;
- Substation comprising single storey building measuring approximately 15 m x 7 m x 5 m high, built on a pre-cast concrete base with external finishes to be agreed with ERC; and
- Underground electrical and telecommunications cables, routed alongside access tracks.

2.2 Methodology & Relevant Guidelines

2.2.1 Appraisal Approach

The appraisal carried out in this LVA does not constitute a Landscape and Visual Impact Assessment (LVIA) as the Development does not require an EIA to be provided.

The appraisal methodology draws upon the established guidance in the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment (GLVIA), 3rd edition 2013.

The following extract, taken from the GLVIA Statement of Clarification (Jan 2013), gives guidance on the terminology to be used in non-EIA Landscape and Visual Impact Appraisals, such as this LVA:

'*In carrying out appraisals, the same principles and process as LVIA may be applied but, in so doing, it is not required to establish whether the effects arising are or are not significant given that the exercise is not being undertaken for EIA purposes. The reason is that should a landscape professional apply LVIA principles and processes in carrying out an appraisal and then go on to determine that certain effects would be likely be significant, given the term 'significant' is enshrined in EIA Regulations, such a judgement could trigger the requirement for a formal EIA. The emphasis on likely 'significant effects' in formal LVIA stresses the need for an approach that is proportional to the scale of the project that is being assessed and the nature of its likely effects. The same principle - focussing on a proportional approach – also applies to appraisals of landscape and visual impacts outside the formal requirements of EIA.*'

In this LVA, effects are therefore appraised to be either 'minor,' 'moderate', 'major', or 'none', with no conclusion being formed on the significance of the effects. The level of effect is appraised through a combination of two considerations - the sensitivity of the landscape element, landscape character receptor or visual receptor, and the magnitude of change that would result from the Development. This evaluation is carried out for each of the receptors described within the baseline section of the report.

2.2.2 Guidelines

The LVA has been undertaken to identify key landscape and visual issues in accordance with the best practice guidance including the following guidance documents:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA3)[1];
- The Landscape Institute (2013), GLVIA3 Statement of Clarification 1/13[2];
- Siting and Designing Windfarms in the Landscape, SNH[3];
- Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments, SNH[4];
- Scottish Government, Onshore Wind Turbines: planning advice[5]
- Visual Representation of Wind Farms, Version 2.2, SNH[6]; and
- Visual Representation of Development Proposals, Technical Guidance Note 2019, The Landscape Institute[7].

[1] Landscape Institute and Institute of Environmental Management and Assessment (2013). *Guidelines for Landscape and Visual Impact Assessment (GLVIA3),* 3rd Edition, Routledge, London [Accessed 21/04/2023]

[2] Landscape Institute (2013). *GLVIA3 – Statement of Clarification* (Online) Available at: https://www.landscapeinstitute.org/technical-resource/glvia3-clarifications/ [Accessed 21/04/2023]

[3] Scottish Natural Heritage (August, 2017). *Siting and Designing Windfarms in the Landscape,* Version 3a (Online) Available at: https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a [Accessed 21/04/2023]

[4] Scottish Natural Heritage (2021) *Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments* (Online) Available at: https://www.nature.scot/guidance-assessing-cumulative-impact-onshore-wind-energy-developments [Accessed 21/04/2023]

[5] Scottish Government (May, 2014). Onshore Wind Turbines: Planning Advice (Online) Available at: https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/ [Accessed 21/04/2023]

[6] Scottish Natural Heritage (February, 2017). *Visual Representation of Wind Farms,* Version 2.2 (Online) Available at: https://www.nature.scot/doc/visual-representation-wind-farms-guidance [Accessed 21/04/2023]

[7] The Landscape Institute (17 September, 2019). *Visual Representation of Development Proposals, Technical Guidance Note 06/19* [Accessed 21/04/2023]

2.2.3 *Landscape & Visual Appraisal*

The two components of LVA referred to throughout the report are based on the following definitions:

- 'Assessment of landscape effects: assessing effects on the landscape as a resource in its own right'[8]; and
- 'Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people.'[9]

Development may have a direct (physical) effect on the landscape in which it is located as well as an indirect or perceived effect from landscape character areas surrounding it. The potential landscape effects, occurring during the construction and operation of the turbines may therefore include the following:

- Changes to landscape elements: the addition of new elements or the removal of vegetation, and buildings and other characteristic elements of the landscape character type;
- Changes to landscape qualities: degradation, erosion, or reinforcement of landscape elements and patterns, and perceptual characteristics, particularly those that form key characteristic elements of landscape character types;
- Changes to landscape character: landscape and character may be affected through the effect on characteristic elements (including perceptual characteristics), landscape patterns and attributes and the cumulative addition of new features, the magnitude and presence of which is sufficient to alter a notable part of the overall landscape character type of a particular area; and
- Cumulative landscape effects: where more than one development may lead to a potential landscape effect.

Visual effects are concerned wholly with the effect of development on visual receptors and general visual amenity. Visual effects are identified for different receptors (people) who would experience the view, such as at their places of residence, during recreational activities, at work, or when travelling through the area. Visual effects may include the following:

- Visual effect: change in the appearance of the landscape as a result of development. This may include changes to the quality of the view, ability of the visual receptor to appreciate the view, or changes to the characteristic elements within the view. These changes can be positive (i.e. beneficial or an improvement) or negative (i.e. adverse or a detraction); and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

A detailed description of the methodology used has been provided in Annex A – LVA Assessment, ZTV, Photography and Photomontage Methodology.

2.3 Cumulative Appraisal

The cumulative appraisal considers the extent to which the Development, in combination with other wind farms, may change landscape character through either incremental effects on characteristic elements, landscape patterns and quality, or by the cumulative addition of new features.

[8] Landscape Institute and Institute of Environmental Management and Assessment (2013). *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition, Routledge, London. Paragraph. 2.21, page 21. [Accessed 21/04/2023]
[9] Ibid. page 21.

Detailed guidance on the cumulative assessment of wind farm development is provided in the SNH (now NatureScot) document 'Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments'[10].

The search area for the Cumulative Landscape and Visual Appraisal (CLVA) is based on a 40 km radius circle from the proposed wind turbines, and identifies those wind energy developments already built, those consented but not yet built, and those for which a detailed planning application has been submitted but not yet determined.

A Detailed CLVA Study Area was established at 10 km radius from the site centre, focussing on those wind energy developments already built, consented or in planning, and which are most relevant to this application. The Cumulative effects are defined as follows:

- Cumulative Landscape Effects: Where more than one wind development may have an effect on a landscape designation or particular area of landscape character; and
- Cumulative Visual Effects: the cumulative or incremental visibility of similar types of development may accumulate and give rise to a combined visual effect with the Development adding an increment of change to a pre-defined baseline's presence. These can be:
    - Simultaneous or combined – where two or more developments may be viewed from a single fixed viewpoint simultaneously, within the viewer's field of view and without requiring them to turn their head. Note: A person's field of view is variable but is approximately 90° when facing in one direction;
    - Successive or repetitive – where two or more developments may be viewed from a single viewpoint successively as the viewer turns their head or swivels through 360°; and
    - Sequential – where a number of developments may be viewed sequentially; or repeatedly from a range of locations when travelling along a route.

The cumulative development of wind farms within a particular area may build up to create different types of cumulative effects, as follows:

- The wind farms are seen as separate isolated features within the landscape character type, too infrequent and of insufficient significance to be perceived as a characteristic of the area;
- The wind farms are seen as a key characteristic of the landscape, but not of sufficient dominance to be a defining characteristic of the area; or
- The wind farms appear as a dominant characteristic of the area, seeming to define the character type as a 'wind farm landscape character type.'

Those wind farms which have been included in the cumulative assessment of the Development are listed in Table 1.1 below.

Table 1.1: Wind Energy Developments Included within the CLVA

Wind Farms within 10 km of the Site	**Details**				
	No.	**HH**	**RD**	**BT**	**Distance (km)**
Existing Wind Farms					
Whitelee Wind Farm	140	65	90	110	1.27
Whitelee Wind Farm – Extension (Phase 1)	36	90	100	140	4.12

[10] NatureScot (2021). *Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments* (Online) Available at: https://www.nature.scot/guidance-assessing-cumulative-impact-onshore-wind-energy-developments [Accessed 21/04/2023]

Wind Farms within 10 km of the Site	Details				
	No.	HH	RD	BT	Distance (km)
Whitelee Wind Farm – Extension (Phase 2)	39	90	100	140	5.10
West Browncastle	12	80	93	126.5	10.87
Myres Hill	2	50	58	79	5.81
Ardoch & Over Enoch Wind Farm (Over Enoch)	2	65	52	91	5.21
Ardoch & Over Enoch Wind Farm (Ardoch)	3	63.3	93	109.8	6.69
Middleton Wind Farm	6	60	90	105	4.51
Neilston Wind Farm	4	65	90	110	7.78
Consented Wind Farms					
Neilston Additional Wind Turbine	1	65	90	110	7.53
Sneddon Law Community Wind Farm	15	80	100	130	5.82

Key:		HH	Hub Height (m)
No.	Number of turbines proposed (m)	RD	Rotor Diameter (m)
BT	Blade Tip (m)	Distance	Distance from the wind farm site centre

Please refer to Figures 1.14 – 1.19 (Annex B of this report) for the location of the wind farms listed above, and cumulative ZTVs.

2.4 Information Sources

A number of different sources of information are also used to help understand the Site and its surrounding context as follows:

- OS mapping at 1:50,000, 1:25,000 and 1:10,000;
- Aerial Photography;
- Google Earth, Street View and Maps;
- Suite of LVA Figures 1 to 28;
- Earlier LVIA dated June 2018 for the Soame Wind Farm appeal documents; (please refer to the Planning Statement for detailed information on this application); and
- Scottish Natural Heritage (2019) National Landscape Character Assessment[11].

2.5 Screening Response and Consultation

A Screening Request was submitted to East Renfrewshire Council (ERC) in July 2019, and the screening opinion (PREAPP/2019/0139) concluded the application did not require an Environmental Impact Assessment (EIA), therefore no scoping opinion was requested, and no formal consultee responses were received.

[11] NatureScot (2019). Landscape Character Types (LCTs) SNH 2019 [Online], Available from: "https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions [Accessed 24/04/2023]

At a meeting with ERC in October 2019 the study area, viewpoints and scope of the LVA were agreed.

2.6 Study Area

The NatureScot Guidance[12] advises that the LVA Study Area for wind turbines of the height of the Development should be based on an area of 40 km distance from each turbine location. The Landscape & Visual Study Area is illustrated in Figure 1.1 and covers an area of 40.4 km radius from the Development (based on a minimum 40 km distance from each of the proposed turbines).

A review of the planning history of the Site is helpful in determining the key landscape and visual sensitivities. Previous planning applications within the Site Boundary include:

- An application for nineteen wind turbines (126m tip height), was made to ERC on 16th April 2010 (Application Reference: 2010/0241/TP) under the name 'Moorhouse Farmers Wind Farm' and was refused on the 24th April 2012. Following the application's refusal, an appeal was lodged and later dismissed on 17th December 2012; and
- The 'Soame Wind Farm' comprising six wind turbines (126.5m tip height) with the same application site boundary was submitted to ERC on 18th December 2014 (Application Reference: 2014/0820/TP). It was refused on 14th March 2018. Following an appeal, the application was dismissed on 25th October 2018.
- An application for three wind turbines (149.9m tip height), was made to ERC on 4th May 2020 (Application Reference: 2020/0217/TP) under the name 'Moorshield Wind Turbines' and was refused on the 13th October 2022.

Following a review of the decisions for these three applications, a Detailed Study Area based on a distance of 5 km radius from the proposed turbines has been considered, as illustrated in Figure 1.6. The radius was primarily determined by a review of the previous viewpoints selected in the LVIA and the Appeal Statement for the Soame Wind Farm, and with specific reference to the Reporter's comments in the Appeal Decision Notice[13] for the Soame Wind Farm application, where the Reporter stated:

"I find that, in general, the proposed turbines would not have significant visual impact from locations that are around five kilometres or more from the appeal site.[14]

2.7 Surveys/Site Visits

Following the desk-based assessment, fieldwork was undertaken on the 1st and 29th October 2019, and 26th May 2023.

The key activities during baseline fieldwork were:

- To augment and verify the published descriptions of landscape character with fieldwork observations;
- To undertake an assessment of the quality or condition of baseline landscape and visual resources;
- To identify any significant features and elements in the landscape such as vegetation or built form that would screen the Development and thereby verify or refine the ZTV;
- To visit each viewpoint location identified during the desk study and screening report, and to microsite each viewpoint location in accordance with good practice guidance and obtain accurate coordinates;

[12] Scottish Natural Heritage (August, 2017). *Siting and Designing Windfarms in the Landscape,* Version 3a [Accessed 24/04/2023]

[13] Planning & Environmental Appeal Division (25 October 2018) Appeal Decision Notice, PPA-220-2048 Moorhouse Wind Farm Ltd v East Renfrewshire Council [Accessed 13/02/2020]

[14] Planning & Environmental Appeal Division(25 October, 2018). Appeal Decision Notice, PPA-220-2048 Moorhouse Wind Farm Ltd v East Renfrewshire Council, para 67 [Accessed 13/02/2020]

- To undertake photography using a digital SLR camera at each viewpoint location; and
- To identify landscape features and elements that may be altered or removed as a result of the Development.

The baseline fieldwork also allowed the study area to be refined and therefore the focus of the assessment stage of the LVA.

Fieldwork during the assessment stage included an assessment of effects on the following receptors:

- Landscape resources including landscape character, landscape sensitivity, landscape features and landscape elements;
- Residential and recreational receptors;
- Roads; and
- Core Paths and other footpaths / cycleways.

2.8 Zone of Theoretical Visibility (ZTV)

Following identification of the landscape components which define landscape character such as topography, vegetation, built form, infrastructure and land use and to help identify the landscape and visual receptors, the LVA has been informed by a blade tip height ZTV. ZTVs are computer generated from a digital terrain model of the 40 km LVA Study Area, and 5 km Detailed Study Area. They illustrate the theoretical visibility of the Development throughout the study areas based on the average eye height (1.5 m) of an adult person.

ZTVs do have some limitations which need to be considered when looking at the theoretical visibility illustrated. Firstly, they do not take account of screening elements such as buildings, vegetation which can substantially reduce visibility. Notwithstanding their limitations, ZTVs are currently the best tool for predicting the likely visibility of the proposed wind turbines and used to inform viewpoint selection and to refine the scope of the LVA.

2.9 Viewpoints

The viewpoints used within this LVA have been selected to reflect those viewpoints agreed in the Screening Opinion and illustrated within the previous Soame Windfarm LVIA (dated 2014), focussing on those viewpoints within a 5 km radius, the locally important viewpoint at Neilston Pad (to represent the cumulative baseline), and the M77 road corridor (to reflect the concerns raised by ERC and the Reporter in the previous Soame Wind Farm application).

The selected viewpoints illustrate the landscape context and views from local Core Paths, cycle routes, nearby residential properties/groups of properties, views from the local public road network, and to represent the local landscape character.

Viewpoints were selected by analysis of the ZTVs and confirmed through a site visit, and through consultation with ERC (refer to Figure 1.6, Annex B). Following the methodology established in GLVIA3, the viewpoints were chosen based on the following criteria:

- Viewpoints should be representative of the likely impacts;
- Viewpoints should show a range of different types of views;
- Viewpoints should be representative of a range of different receptor groups;
- Viewpoints should be representative of a range of distances and directions; and
- Viewpoints should be representative of the varying image of the Development within the landscape.

A summary of the illustrated viewpoints is provided in Table 1.2 below. The inclusion of Duncarnock Hill Fort (7km from the nearest Moorshield turbine) was discussed at a pre-application meeting with ERC and a decision was made to exclude this within the LVA on

the basis that the viewpoint is outwith the Detailed Study Area. All viewpoints are located in the public realm and focus on the indicative location of the Development. Site photography was undertaken during periods of fine weather and clear visibility. Refer to Figure 1.6 for Viewpoint Locations[15], and Figures 1.20 – 1.28 for the baseline landscape photographs presented with wireline images and photomontages of the proposed turbines.

Table 1.2: LVA Selected Viewpoints at Consultation Stage

Viewpoint Number	Viewpoint Name	Reason for selection	Distance to proposed turbines (km)
1	Kingswell Road, near Highfield	Viewpoint to illustrate the landscape context and views from the local road network near two residential properties at Highfield. The viewpoint is representative of views available for local road users and cyclists, and potential views from the rear elevations of the two residential properties, west of the Development.	0.91
2	Greenfield Hill Mast	Viewpoint to illustrate the landscape context from an elevated location along Eaglesham Moor Road, east of the proposed wind turbines and north east of the existing Whitelee Wind Farm.	1.64
3	Threap Knowe	Viewpoint to illustrate the landscape context and views from an A road on the local road network which links the residential properties and settlements. The viewpoint is representative of views available for local road users and cyclists using the local road network north of the Development.	1.70
4	Swan Cottages	Viewpoint to illustrate the landscape context and views from a cluster of residential properties north of the Development.	1.91
5	Mid Floak / M77	Viewpoint to illustrate the landscape context of the M77 and local Floak Quarry and forestry plantations. The viewpoint is representative of views from the local road network, an access track to a small settlement of properties.	2.28
6	Bonnyton Golf Club	Viewpoint to illustrate the views from the golf course entrance, where the club house is orientated south west. The viewpoint is representative of views experienced by golfers on southern parts of the course and users of the club house and car park, and users of the local road network.	3.17
7	Eastwood Golf Club	Viewpoint to illustrate the landscape context of the land south of the M77 & A77 corridor, and the golf course landscape. The viewpoint is representative of views experienced by local road users and residential receptors near Mearns Road.	4.00

[15] Please note that Viewpoint 6 is incorrectly labelled as Viewpoint 7 and vice versa.

Viewpoint Number	Viewpoint Name	Reason for selection	Distance to proposed turbines (km)
8	M77 East of Stewarton	Viewpoint to illustrate the landscape context from an elevated location on a bridge along the M77 road corridor, south west of the Development and the existing Whitelee Wind Farm. This viewpoint is representative of views experienced by local road users.	5.33
9	Neilston Pad	Viewpoint to illustrate the landscape context from a recreational viewpoint north west of Development. The viewpoint is representative of views experienced by recreational users of the small hill top location and Core Path B19 within the local footpath network.	6.74

3 LANDSCAPE PLANNING CONTEXT

The Development is located within the administrative boundary of ERC (See Figure 1.1, Annex B).

In landscape and visual terms, policies from National Planning Framework 4, the East Renfrewshire Local Development Plan 2 (ERLDP2) and Supplementary Guidance (SG) that are relevant to the Site are detailed in Table 1.3 below.

Table 1.3: Relevant Landscape Planning Policy

Landscape Planning Policy	Comments
National Planning Framework 4 (2022)[17] **Policy 4 (Natural Places)** *"a) Development proposals which by virtue of type, location or scale will have an unacceptable impact on the natural environment, will not be supported."*	The location and scale of the Development are appropriate in relation to the scale and character of the Plateau Moorland with Windfarms LCT.
Policy 11 (Energy) "*e) In addition, project design and mitigation will demonstrate how the following impacts are addressed:* *i. impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;* *ii. significant landscape and visual impacts, recognising that such impacts are to be expected for some forms of renewable energy. Where impacts are localised and/ or appropriate design mitigation has been applied, they will generally be considered to be acceptable;* *iii. public access, including impact on long distance walking and cycling routes and scenic routes...* *vii. impacts on historic environment…*	The design of the Development has incorporated embedded mitigation which addresses the concerns raised in previous applications on the site (see Section 7 of this LVA for further details). Impacts on residential amenity would generally be acceptable with only one residential property predicted to experience what might be considered an overbearing effect. However, the property in question, Shieldhill, is financially involved in the project. Landscape and visual effects beyond the local area are considered to be very limited due to the degree of coalescence between the Development and the existing Whitelee Wind Farm. This view was supported by ERC in the

[17] Scottish Government (2023). National Planning Framework 4 (Online) Available at: https://www.gov.scot/publications/national-planning-framework-4/ [Accessed 21/04/2023]

Landscape Planning Policy	Comments
xiii. cumulative impacts."	Report of Handling for the previous application (2020/0217/TP): *'When viewed from very long distances, such as from the north and east, the proposed turbines would be seen against or assimilated into views of the Whitelee Windfarm. In this context the visual effect is not considered to be significant. The visual impacts from very long distances are therefore considered to be relatively localised and contained for a development of this nature.'* The Development is located in the same landscape character type as Whitelee Windfarm and consequently its siting appears rational, and this limits the potential for cumulative effects.
Onshore Wind Policy Statement 2022[18] **3.6. Landscape & Visual Amenity and National Planning Framework 4 (NPF4)** *"3.6.1. Meeting our climate targets will require a rapid transformation across all sectors of our economy and society. This means ensuring the right development happens in the right place. Meeting the ambition of a minimum installed capacity of 20 GW of onshore wind in Scotland by 2030 will require taller and more efficient turbines. This will change the landscape."*	The Development would make a contribution to meeting the minimum installed capacity of 20GW of onshore wind in Scotland by 2030. Following the detailed design process, the Development is considered to be the right development in the right place.
East Renfrewshire Council Local Development Plan 2 (March, 2022)[19] **Policy D1: Placemaking and Design** *"Proposals for development within the urban and rural areas should be well designed, sympathetic to the local area and demonstrate that the following criteria have been considered, and, where appropriate, met…* *1. The development should not result in a significant loss of character or amenity to the surrounding area…* *6. Respond to and complement site topography and not impact adversely upon the green belt, landscape character and setting, green networks, features of historic interest, landmarks, vistas, skylines and key gateways. Existing buildings and natural features of suitable quality, should be retained and sensitively integrated into proposals including greenspace, trees and hedgerows…"*	The location and scale of the Development are appropriate in relation to the scale and character of the Plateau Moorland with Windfarms LCT. The Development would not impact upon areas of green belt, green networks and key gateways, and where visible in wider vistas and on skyline it will be experienced within a developed context that contains other commercial wind farms and major transport corridors.

[18] Scottish Government (2022) Onshore Wind Policy Statement 2022 [Online]. Available at: https://www.gov.scot/publications/onshore-wind-policy-statement-2022/documents/

[19] East Renfrewshire Council (2022). East Renfrewshire Council Local Development Plan 2 [Online]. Available at: https://www.eastrenfrewshire.gov.uk/ldp2 [Accessed 21/04/2023]

Landscape Planning Policy	Comments
Policy E2: Renewable Energy *"…Proposals for solar energy; wind farm developments; hydroelectric; biomass; district heating; and energy from waste technologies will be supported in principle. Proposals will be required to demonstrate that they do not result in unacceptable significant adverse effects giving due regard to relevant environmental, community and cumulative impact considerations. Where appropriate, applications will be required to demonstrate satisfactory mitigation measures to alleviate any unacceptable adverse effects.* *All proposals for low and zero carbon and renewable energy developments, including extensions and repowering of existing wind farms, will be assessed against the spatial framework for wind development (Figure 15) and heat maps (where appropriate), the Low and Zero Carbon Delivery Supplementary Guidance and the following criteria:* *1. Net economic impact;* *2. The scale of contribution to renewable energy generation targets;* *3. Effect on greenhouse gas emissions;* *4. Cumulative impacts - recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;* *5. Impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;* *6. Landscape and visual impacts, including effects on wild land…"*	Landscape and visual effects would be localised and of a magnitude that are expected from a commercial wind farm development. The planning history of the site illustrates a commitment to reduce landscape and visual effects through design improvements to address feedback from consultees. The scale of the design changes are substantial, and it is considered that the amended design is appropriate with respect to its landscape and visual effects. While the same sensitivities have been considered in the current iteration of the Development, the Council's Spatial Framework has been recently superseded by the introduction of NPF4, and consequently it is no longer relevant in the determination of this application. Consideration of the Council's Supplementary Guidance is provided in the next row of the table. While there would be some cumulative effects experienced primarily associated with the relationship of the Development with Whitelee and Middleton wind farms, it is considered that there is further capacity for the Development at this location, which is an opinion supported by the conclusions of the East Renfrewshire Council Wind Energy Study[21]. Impacts on the local community would be localised, while impacts on residential amenity would generally be acceptable with only one residential property predicted to experience what might be considered an overbearing effect. However, the property in question, Shieldhill, is financially involved in the project.
Supplementary Planning Guidance Renewable Energy (January 2017)[22] ***Part 2.6: Renewable Energy projects*** Further studies may be commissioned by the Council to determine Areas of Greatest Potential for alternative energy sources, with a focus on locational/environmental considerations such as scale, visual impact, landscape features, carbon rich soils etc. Any results of these potential studies will feature in subsequent versions of this SPG.	This guidance is noted, but is not yet of relevance to the Development given the absence of any updated wind energy guidance.

[21] LUC (2012). East Renfrewshire Council Wind Energy Study

[22] East Renfrewshire Council (2017). Supplementary Planning Guidance Renewable Energy [Online]. Available at: https://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=19383&p=0 [Accessed 21/04/2023]

Landscape Planning Policy	Comments
Part 4: Wind Energy Considerations National, Regional and Local considerations, including policy documents, relevant studies and strategies should guide the assessment of impact of the Development, including the impact on landscape.	The methodology for the LVA has been informed by national and local guidance produced by Councils located in the Study Area, NatureScot and the Landscape Institute.
Supplementary Planning Guidance Development Contributions (2015)[23] ***Part 3.6. Green Network and Access*** The Council seeks to protect and where possible enhance East Renfrewshire's natural heritage and landscape features. Wherever possible, the effects will be mitigated through planning conditions ensuring on site provision. Where this is not possible, an assessment for a development contribution will be made based on the environmental quality of the open space. Contributions will be based on the cost of replacing lost landscape features, habitats or amenity elsewhere in the locality.	The LVA has considered the impact of the Development on the East Renfrewshire's natural heritage and landscape features.
Supplementary Planning Rural Development Guidance (2015)[24]: The landscape character of East Renfrewshire has been assessed through two landscape character assessments, the Glasgow and Clyde Valley Landscape Assessment (1999)[25] which was further augmented by the East Renfrewshire Landscape Character Assessment (2016). The two landscape assessments mentioned above are key considerations when assessing the sensitivity of a location and the potential for visual impact that could result from any proposal.	The LVA accords with the advice in regional and local landscape assessments and analyses visual sensitivity of Landscape Character Areas.

Consideration has also been given to the relevant policies contained within the ERLDP2 during the design of the Development. The following documents are considered applicable to the Development:

- The East Renfrewshire Wind Energy Study (2012);
- Glasgow and the Clyde Valley Landscape Assessment (1999);
- Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley (2014); and

[23] East Renfrewshire Council (2015). Supplementary Planning Guidance Development Contributions [Online]. Available at: https://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=14075&p=0 [Accessed 21/04/2023]
[24] East Renfrewshire Council (2015). Supplementary Planning Rural Development Guide [Online]. Available at: https://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=14081&p=0 [Accessed 21/04/2023]
[25] Scottish Natural Heritage (1999). Glasgow and the Clyde Valley Landscape Assessment [Online]. Available at: https://www.nature.scot/sites/default/files/2018-01/Publication%201999%20-%20SNH%20Review%20116%20-%20Glasgow%20and%20Clyde%20Valley%20landscape%20character%20assessment.pdf [Accessed 21/04/2023]

- East Renfrewshire Greenbelt Landscape Character Assessment (2016).

3.1 Landscape Planning Designations

This section, which should be read in conjunction with Figure 1.11, (Annex B) and identifies landscape planning policies, designations and constraints relevant to this LVA. Table 1.4 summarises the constraints within the 40km radius study area.

Table 1.4: Landscape Designations and Protected Heritage Assets [31]

Landscape Designations & Protected Heritage Assets	Present Within Site	Present within Detailed Study Area (5 km radius)
National Scenic Areas	No	No
Wild Land Areas	No	No
Scheduled Monuments	No	Yes
Conservation Areas	No	Yes
Listed Buildings	No	Yes
Gardens and Designed Landscapes	No	No

4 BASELINE CONDITIONS

The following section describes the existing environment in terms of landscape character and visual amenity, the baseline against which the impacts of the Development will be assessed, including sensitivity of landscape or visual receptors.

- Landscape Character;
- Landscape Designations;
- Townscape Designations; and
- Visual Receptors.

4.1 National / Regional Landscape Character

The landscape character is considered at three levels:

- A national/regional setting defined within the NatureScot National Landscape Character Assessment[32]; and
- A regional/local setting, based on ERC local landscape character assessment as part of their Wind Energy Study[33]; and

[31] Historic Environment Scotland (2019). [Online]. Available at: https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/listed-buildings/search-for-a-listed-building/ [Accessed 21/04/2023]
[32] NatureScot (2019) Scottish Landscape Character Types Map and Descriptions (Online) Available at: https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions [Accessed 21/04/2023]
[33] East Renfrewshire Council (2015). Supplementary Planning Guidance: Renewable Energy [Online] Available at: https://www.eastrenfrewshire.gov.uk/spg [Accessed 21/04/2023]

- Field observations to confirm the key features and characteristics pertinent to the 5km radius Detailed Study Area and the Site.

At a national level there are five LCTs within the Detailed Study Area (refer to Figure 1.8, Annex B). The LCTs provide a detailed assessment and understanding of the landscape character. However, the following LCTs, whilst within the Detailed Study Area, are peripheral and only occupy very small areas 4 – 5 km from the Development:

- SNH Agricultural Lowlands - Ayrshire LCT 6 which occupies a very small area within the south west of the Detailed study area, 4.5 – 5 km distance from the Development;
- SNH Plateau Farmland LCT 201 which occupies a small area to the north east within the detailed study area with limited / fragmented predicted visibility as illustrated in the ZTV; and
- SNH Rugged Upland LCT 202 which occupies a very small area to the north of the Detailed Study Area, 4.5 – 5 km distance of the Development, with limited / fragmented predicted visibility as illustrated in the ZTV (Figure 1.6).

Given the limited predicted visibility, and limited extent of the above LCTs within the Detailed Study Area, the LVA will focus on the landscape effects on the Plateau Moorland with Wind Farms - Glasgow & Clyde Valley and Plateau Moorland with Wind Farms - Ayrshire LCTs (refer to Figures 1.7 & 1.8, Annex B).

4.1.1 Plateau Moorland with Wind Farms – Glasgow & Clyde Valley (NatureScot LCT 214)[34]

This is the 'host' landscape character type, with the Development located entirely in the Plateau Moorlands with Windfarms LCT.

- Key characteristics of the Plateau Moorland with Windfarms (Glasgow & Clyde Valley) LCT within the Detailed Study Area include: Large scale landform;
- Distinctive upland character created by the combination of elevation and exposure;
- Smooth, plateau landform, moorland vegetation;
- Extensive wind turbine development, including the largest wind farm in Scotland at Whitelee; and
- Sense of apparent naturalness and remoteness which contrasts with the farmed and settled lowlands, although this has been reduced by wind energy development.

4.1.2 Plateau Moorland with Wind Farms – Ayrshire (NatureScot LCT 79)[35]

The Plateau Moorland with Windfarms (Ayrshire) LCT is located on the southern side of the Development. This LCT lies in the north-eastern part of East Ayrshire and extends into South Lanarkshire and East Renfrewshire and forms an expansive open plateau, which has extensive operational windfarms.

Key characteristics of the Plateau Moorland with Windfarms (Ayrshire) LCT within the study area include:

- Comparatively level topography with extensive plateau rising to soft contoured ridges and flatter basins;
- Heather and grass moorland, with moss and lochs;

[34] NatureScot (2019). Plateau Moorland With Windfarms: Glasgow & Clyde Valley (n.d.) Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20214%20-%20Plateau%20Moorland%20with%20Windfarms%20-%20Glasgow%20&%20Clyde%20Valley%20-%20Final%20pdf.pdf [Accessed 21/04/2023]

[35] NatureScot (2019). Plateau Moorland with Windfarms: Ayrshire (n.d.) Available at: https://www.nature.scot/sites/default/files/LCA/LCT%20079%20-%20Plateau%20Moorland%20with%20Windfarms%20-%20Ayrshire%20-%20Final%20pdf.pdf [Accessed 21/04/2023]

- Extensive areas of conifer forest;
- Sparse network of minor roads;
- Infrequent farms and houses in valleys and on lower hill slopes on outer fringes;
- Extensive operational wind farm development, with associated infrastructure, reducing wild character and sense of remoteness; and
- Visible as largely horizontal backdrop skyline with wind turbines from the Ayrshire Basin, parts of the Irvine Valley and Glasgow.

4.1.3 Local Landscape Character Areas (LLCA)

The landscape character assessment, within the ERC Wind Energy Study (2012) (ERCWES)[36], defines a number of local level character areas (LLCA), and identifies how sensitive these areas may be to wind energy development. Table 1.4 within the ERCWES provides a definition of capacity:

- Higher landscapes of lower sensitivity, where large-scale wind farms may be acceptable, with reference to the scale and form of the landscape, and the likely visibility of the development from sensitive receptors. Landscapes where large-scale wind farm developments would have more limited cumulative impacts in addition to proposed and consented Developments; and
- Lower landscapes of higher sensitivity, where large-scale wind farms would not be easily accommodated within the scale and form of the landscape, or would be more visible from sensitive receptors. Landscapes where large-scale wind farm development may give rise to higher levels of cumulative impact in addition to proposed and consented Developments.[37]

However, the above definitions, and conclusions within the ERCWES refer specifically to wind farms of 20 megawatts (MW) and over. Despite the Development being 15 MW in generating capacity, and under the 20 MW threshold for developments assessed within the ERCWES, the assessment of landscape capacity is relevant to the Development. The landscape character and sensitivity assessment within the ERCWES has therefore been referenced in this appraisal.

The report identifies two discrete LLCAs which are relevant to the Moorshield Wind Turbines site area:

- Bennan (3a); and
- Ballageich Hill (6a).

Figure 1.8 (Annex B) Local Landscape Character Types illustrate the two local landscape character areas above, in relation to the NatureScot Landscape Character Types.

The ERCWES identifies the 3a Bennan LLCA with the following characteristics:

- Sensitivity - This is an area of smooth, gently undulating moorland forming part of the wider moorland plateau. Aside from Bennan Hill, there are no distinct landmarks. The area includes Bennan Loch, a coniferous plantation, and a small area of enclosed pasture at Shieldhill, but is otherwise open grass moorland. There are few houses, but the western edge of the area is affected by the presence of the M77. The area is visually enclosed. Bennan Hill and the adjacent forest are closer to the plateau edge and are more visible from the north. The area is not overlooked from the M77 and is not a recreational landscape. Bennan Hill offers some views of the wider landscape, but is not as elevated as nearby Ballageich;

[36] LUC (2012). East Renfrewshire Council Wind Energy Study
[37] LUC (2012). East Renfrewshire Council Wind Energy Study, Table 1.4, page 7

- Cumulative development - There is presently no wind energy development in this area, though Whitelee can be seen to the southeast, across the Eaglesham Road;
- Capacity - This area is considered to be less sensitive to wind turbines, as a visually enclosed area of largely undifferentiated smooth moorland. Developments in this area may give rise to cumulative effects alongside Whitelee, for example when viewed from the Eaglesham Road; and
- Overall, this area has a higher capacity to accommodate wind energy development of 20MW or over.[38]

The ERCWES identifies the 6a Ballageich Hill LLCA with the following characteristics:

- Sensitivity - This area of low, rounded hills is elevated above the surrounding smooth moorland. While still a simple, large-scale moorland landscape, it has more distinction as a group of upstanding hills with some topographical variety. The main human influence is the mast on Greenfield Hill, and the fast-moving traffic on the Eaglesham road. Skylines are mostly simple. The hills are local landmarks, particularly their steeper slopes viewed from the Eaglesham Road. Receptors are isolated residential properties and users of the road, including visitors to Whitelee. The hills offer broad views northward across East Renfrewshire;
- Cumulative development - This area is adjacent to Whitelee wind farm, and includes the visitor centre which overlooks the turbines to the southeast. Views of the wind farm are available from the Eaglesham Road, and from the higher parts of the hills, though looking north there are currently no turbines. Due to its elevated nature, this landscape will enable views to other wind energy developments in the wider area;
- Capacity - This more distinctive section of elevated landscape within the moors is considered to be of higher sensitivity, particularly on its steeper northern side, where turbines are likely to be more widely visible. Turbines may also affect scale perceptions of these low hills. The southern-facing slopes of the hills are considered to be of lower sensitivity as development would be more screened from the north, and this area is more associated with the lower-sensitivity smooth moorland. Development in this area would have cumulative interactions with Whitelee; and
- The northern parts of this landscape are considered to have lower capacity to accommodate wind farms of 20 MW or over, due primarily to visibility. The southern areas are considered to have higher capacity.[39]

The ERCWES identifies areas of 'higher capacity' and 'lower capacity' for wind energy development. Within the Bennan (3a) LLCA, the ERCWES states:

"This area is considered to be less sensitive to wind turbines, as a visually enclosed area of largely undifferentiated smooth moorland. Developments in this area may give rise to cumulative effects alongside Whitelee, for example when viewed from the Eaglesham Road. Development of the Moorhouse Farmers wind farm would physically limit available space, but may not affect the capacity of this landscape to accommodate further development. Overall, this area has higher capacity to accommodate wind energy development of 20MW or over." [40]

For the Ballageich Hill (6a) LLCA the ERCWES states:

"This more distinctive section of elevated landscape within the moors is considered to be of higher sensitivity, particularly on its steeper northern side, where turbines are likely to be more widely visible. Turbines may also affect scale perceptions of these low hills. The southern-facing slopes of the hills are considered to be of lower sensitivity as development be more screened from the north, and this area is more associated with

[38] LUC (2012). East Renfrewshire Council Wind Energy Study, Pages 14 - 15

[39] LUC (2012). East Renfrewshire Council Wind Energy Study, Page 17

[40] LUC (2012). East Renfrewshire Council Wind Energy Study, Pages 15 NOTE: The reference to the Moorshield Windfarmers scheme is a previous wind farm application at the site which comprised of 15 turbines.

the lower-sensitivity smooth moorland. Development in this area would have cumulative interactions with Whitelee and, if consented, Moorhouse Farmers wind farms…… The northern parts of this landscape are considered to have lower capacity to accommodate wind farms of 20MW or over, due primarily to visibility. The southern areas are considered to have higher capacity." [41]

4.1.4 Landscape Character of the Site

Site investigations and a review of the landscape character assessments have informed the assessment of the landscape character of the Site.

- Landform & Scale – the landscape form of the site is simple, and of medium scale, with diminutive hills to the east at Bennan Hill and Ballageich Hill, and south east at Queenseat Hill. The Site itself is relatively flat, and where there is a change in elevation, gradients are smooth, which is characteristic of the plateau;
- Land cover – the landcover of the Site comprises of heather and grass moorland with blanket bog. There is a notable absence of field boundaries, trees and hedgerow cover. To the west of the site there is a block of commercial forestry, and Bennan Loch Reservoir to the north east;
- Settlement / Man Made Influence - This is a man modified landscape, and this is especially evident where there are elevated views from nearby Core Paths and the local road network, where pylons, communication masts, commercial forestry plantations, Floak Quarry, the M77 road corridor, reservoirs with dams are all visible within the immediate landscape. Distant views across the Glasgow conurbation to the north and east, to the Campsie Fells to the north, and Isle of Arran to the west are available in clear weather;
- Movement – The Site has no current development and is still, with very limited movement. Eaglesham Moor Road is a busy local road which bounds the site to the south. Fast moving local traffic and cyclists use this road, which links the M77 / A77 to Eaglesham and scattered residential properties, including access to Whitelee Wind Farm Visitor Centre;
- Skylines & Key Views – there are a number of vertical features visible in proximity to the Site and in the wider landscape, including the existing wind turbines at Whitelee and Middleton Wind Farm, Greensfield Hill Mast, and pylons in the wider landscape. There are limited 'key views' within the Detailed Study Area, however, views across the plateau moorland area to Glasgow and the Plateau Farmland to the north and east, and Ayrshire Plateau Moorland with Wind Farms and Agricultural Lowlands are available from the Core Path ERC/D and elevated locations at Ballageich Hill;
- Inter-visibility – the closest adjacent landscape is the Plateau Moorland with Wind Farms (Ayrshire). Within 5km radius of the Development, the landscape is characterised as plateau moorland, and any visibility with neighbouring landscapes would be beyond 5km distance;
- Perceptual Aspects – the Site has an open, exposed, wind-swept character. There are panoramic views to urban and urban fringe areas to the north and east. The area is not tranquil, with traffic noise from the motorway corridor and local road network evident. Air traffic to Glasgow International Airport is also apparent; and
- Cumulative Wind Energy – Whitelee Wind Farm is visible to the south and east of the Development, Middleton Wind Farm is visible to the north west, and Neilston Wind Farm beyond. Single turbines are also visible within the Detailed Study Area, associated with individual farms. The existing and consented wind farms are largely contained within the Plateau Moorland with Wind Farms (Glasgow & Clyde Valley and Ayrshire).

[41] LUC (2012). East Renfrewshire Council Wind Energy Study, Pages 17

4.2 Landscape Designations

Within the LVA Detailed Study Area there are no landscape designations.The Development is not located within the ERC Green Belt.

4.3 Conservation Areas

Eaglesham Conservation Area (CA306) is situated 4.8km north east of the Development. Due to local tree cover there would be no view of the Development's proposed turbine blade tips from Eaglesham Conservation Area on the western boundary of the village. Therefore, the Conservation Area has not been considered any further within this LVA.

4.4 Dunwan Hill, fort (enclosure) SM12882 – Scheduled Monument

The monument comprises the remains of a fort[42]. Dunwan Hill is a prominent steep sided, flat topped hill within the existing Whitelee Wind Farm[43], situated 2.6km south east of the Development.

Given the location of the hill fort on the northern edge of Whitelee Wind Farm, the Development would not extend the proportion of the view occupied by wind energy development from the hill fort (the Moorshield turbines are situated beyond the existing Whitelee wind turbines), and therefore any predicted visual effects on visitors to the hill fort would be limited. Therefore, the Dunwan Hill Fort Scheduled Monument has not been considered any further within this LVA.

4.5 Listed Buildings

Figure 1.6 illustrates landscape planning designations, including listed buildings. The nearest listed buildings to the Development, within the 5 km Detailed Study Area, are:

- King's Well residential property (LB 12508; Category B);
- Lochgoyn Monument (LB 12509; Category B);
- Harelaw (LB13823; Category C); and
- A number of Category B & C listed buildings on the western edge of Eaglesham Village on the 5km radius boundary.

However, given the location of the Lochgoyn Monument within the existing Whitelee Wind Farm, the Development would not extend the proportion of the view occupied from the monument (they are situated behind the existing Whitelee wind turbines), and therefore any predicted visual effects on visitors to the monument would be limited. Therefore, the Lochgoyn Monument Listed Building has not been considered any further within this LVA. In addition, Harelaw Listed Building lies outwith the ZTV, and potential views of the Development from the properties on its western edge would also be screened by tree cover, therefore they have not been considered any further within this LVA.

The King's Well residential property is situated 2 km from the Development. Predicted visual effects on residential properties are considered in Section 9 of this LVA.

4.6 Visual Receptors

The visual appraisal draws from the ZTV, site visits and viewpoint analysis and appraises the potential visual effects on views and visual amenity likely to be experienced by receptors (people) within the landscape as follows:

- Views from residential properties and settlements;

[42] Historic Environment Scotland (2011). Dunwan Hill, Fort (SM12882) [Online]. Available at: http://portal.historicenvironment.scot/designation/SM12882 [Accessed 21/04/2023]

[43] East Renfrewshire Council (2022). Dunwan Hill [Online]. Available at: https://eastrenfrewshire.gov.uk/whitelee-history [Accessed 21/04/2023]

- Views experienced while travelling through the landscape (recreational road users, walkers, horse riders, cyclists for example); and
- Views from tourist and recreational destinations.

The visual appraisal focuses on those receptor areas where effects would be most notable, as detailed in the sections below.

Visual effects would be experienced by the people who live and work in the area, along with those enjoying recreational activities in this area or simply passing through. Whilst it is people who are the actual receptors of visual effects, it is the places they may occupy, and from which the proposed wind turbines may be seen, that are listed below.

4.6.1 Recreational Receptors

Whilst the potential visual effects on tourists, or those engaging in recreation activities, may be brief in nature by passing through the area by vehicle, or on horse, foot or bike, their sensitivity to landscape and visual change is high because their purpose/activity is to enjoy the landscape and surroundings.

The visual appraisal considers views from recreational receptors within 5 km of the Development. Nearby recreational receptors within the Detailed Study Area include:

- There are a number of Core Paths within the Detailed Study Area which are within the ZTV, where there would be potential views of the proposed turbines. Illustrated by views from Viewpoints 3, 4, 6 and 7. Core Paths ERC/E5 and ERC/E6 are located within the Whitelee Wind Farm;
- Regionally promoted off road mountain bike cycle routes at Whitelee Wind Farm, and local on road cycle routes promoted by ERC. As above, users of the off road cycle routes within the Whitelee Wind Farm have not been considered any further within this LVA;
- Fishing at Bennan Loch and Lochcraig Reservoir; and
- Visitors to Whitelee Wind Farm Visitor Centre.

4.6.2 Residential Properties & Settlements

Particular attention is dedicated to the effect of the Development on local residents because they would experience the turbines from different locations, at different times of the day, usually for longer periods of time, and in different seasons.

The visual appraisal considers views from individual residential properties within 2 km of the proposed turbines, (Figure 1.12, Annex B). Following a desk-based appraisal and site visit, an assessment of one property within a 1 km radius (illustrated by Viewpoint 1 Kingswell Road, near Highfield, Figure 1.20), and a further 12 properties within 1 - 2 km radius of the proposed turbines was undertaken in the LVA.

Visual effects experienced by residents of individual properties close to the Development, would be from individual isolated residential properties. Those residential receptors within 2 km of the Development include:

- Shieldhill property (an interested party to the Development);
- Highfield – two properties;
- South Moorhouse Farm (an interested party to the Development); South Moorhouse Lodge (2 properties);
- Swan Cottages (2 properties);
- Langlee Farm (2 properties);
- Bennan Farm;
- Greenfield property; and

- King's Well (Category B Listed Building).

The methodology for the appraisal of the impacts on residential properties is included within Annex A.

The appraisal of visual effects likely to be experienced from settlements includes consideration of residential areas, the public realm, and public open spaces within the settlement boundaries that would be frequented by people.

The only settlement within 5 km radius from the Development, included in the appraisal is Eaglesham.

4.6.3 Transport Routes

It is important to take account of how the Development would be experienced from the surrounding road network. The visual appraisal considers the potential visual effects likely to be experienced by people travelling through the landscape on main roads and the local road network. Views would vary depending on proximity to the road, the mode of transport, the angle of view, and intervening landscape features.

Figure 1.11. illustrates key roads and cycle routes, which are located within the 5 km Detailed Study Area from the Development, which include:

- B769 route that connects Glasgow and Kilmarnock;
- M77 motorway, which links Glasgow with Kilmarnock;
- A77 trunk road, that runs southwest from Glasgow to the town of Portpatrick on the Irish Sea, via Kilmarnock and Ayr.
- Also, 5 km Detailed Study Area consists of nine local cycle routes illustrated at Figure 1.12

4.7 Receptors Scoped Out of the LVA

Further to the information presented above, the following landscape and visual receptors have been scoped out of this appraisal:

- NatureScot Agricultural Lowlands LCT 6 which occupies a very small area within the Detailed study area with limited predicted visibility as illustrated in the ZTV;
- NatureScot Plateau Farmland LCT 201 which occupies a very small area within the Detailed study area with limited predicted visibility as illustrated in the ZTV;
- NatureScot Rugged Upland LCT 202 which occupies a very small area within the Detailed study area with limited predicted visibility as illustrated in the ZTV;
- Eaglesham Conservation Area (CA306) whilst being within the ZTV, local tree cover screens views towards the Development to the west;
- Dunwan Hill Fort Scheduled Monument (SM12882) which is situated within Whitelee Wind Farm;
- Lochgoyn Monument (LB 12509), which is situated within Whitelee Wind Farm;
- Harelaw (LB13823), which lies outwith the ZTV;
- Listed buildings at the edge of Eaglesham village where local tree cover screens views towards the Development to the west;
- Cycle Routes – 1 and 4 which lie outwith the ZTV, and Route 13 within the Whitelee Wind Farm; and
- Roads – B769 to the north west of the Detailed Study Area, and lies outwith the ZTV.

5 ZTV ANALYSIS

Given the plateau moorland topography, the ZTV illustrates extensive visibility of the Development within 5 km of the Site, within the central, western and southern areas of the Detailed Study Area. Fragmented, or partial visibility, in the north and north east of the Detailed Study Area reflects the change in topography, with small hills, and a gentle fall in gradient to Eaglesham and to the east and north east, and north west beyond the M77 corridor.

Comparative ZTVs have been used to illustrate the theoretical visibility between the existing wind farms and the Development (as illustrated in Figures 1.16 & 1.19, Annex B). Within the 40 km cumulative study area, and the Detailed Study Area, there is no indication that the Development would extend the visibility of wind turbines, with the exception of some highly localised areas north of the Development (refer to Figures 1.16 – 1.19, Annex B). The ZTV illustrates that the theoretical visibility of the Development lies within the existing extent of visibility of the existing operational wind farm sites.

Comparative ZTVs have been used to illustrate the theoretical visibility between the consented wind farms and wind farms which are currently planning applications, including the Development (as illustrated in Figures 1.17 – 1.19, Annex B).

Within the 40 km cumulative study area, and the Detailed Study Area, the cumulative pattern is generally similar, and there is little difference in the theoretical visibility of the Development and those currently wind farm application sites (circa 25 – 40 km distance to the north east, east and south of the Development).

In addition, there is very little difference in the theoretical visibility of the Development and those currently consented wind farm sites (circa 18 – 40 km distance to the north east, east and south of the Development).

5.1 Weather Conditions

In reality, changing weather patterns and local climatic conditions would influence the visibility of the Development in terms of the extent of view, the colour and contrast of the turbines and the number of turbines visible and thus the perceived visual impact. There would be periods of low visibility (i.e. fog, precipitation, low cloud, and bright sunny conditions that are accompanied by haze) as well as periods of high visibility in clear weather.

In some instances, and from some locations, the turbines may be ‘back-lit’ (i.e. appearing darker in colour during sunset / sunrise and periods of pale or white blanket cloud) and in other circumstances may appear to be ‘up-lit’ (i.e. during stormy periods that combine dark clouds and bright sunshine).

6 APPRAISAL OF LIKELY EFFECTS

In order to understand the likely effects of the Development, it is first necessary to understand the construction processes involved, and the components of the Development which would be present during the operational life of the Development (as outlined in the Supporting Statement). The likely effects that would arise as a result of the Development can be attributed to either the short-term construction works or the long-term presence of the wind turbines. Planning Drawing 2 – Site Layout Plan (Planning Document) shows an illustrative plan of the Development.

6.1 Effects of Construction

The construction, operation and decommissioning of the Development are anticipated to cover a period of up to 31 years in total, 30 years of which would be for the operation of the Development.

6.1.1 Landscape Effects During Construction

The construction phase would result in localised and direct landscape effects on the plateau moorland with wind farm landscape and the landscape elements within the Site itself. Table 1.5 below provides a list of the construction activities to be undertaken together with an appraisal of the level and type of effect predicted.

Construction activities could result in temporary landscape and visual effects during the construction period, specifically:

- Effects on landscape character, based on a current and future baseline, from construction and plant activities within 5 km radius; and
- Effects on visual amenity of surrounding visual receptors, including residential properties, users of the local Core Paths and the local road network, based on a current and future baseline, from construction and plant activities within 5 km radius.

Please refer to Planning Drawing 2 – Site Layout Plan (Planning Document) for the location of the proposed temporary construction compound, substation, laydown areas and turbine locations.

Table 1.5: Landscape Effects during Construction

Construction Activity and Assessment	**Landscape Appraisal**		
	Sensitivity	**Magnitude**	**Level of Effect**
Temporary Construction Compound Temporary construction compound (45 x 40m) situated located next to the substation centrally within the site. This would occupy an area of existing rough grassland / moorland (of low landscape sensitivity). Given the limited area affected, the magnitude of change would be small and the temporary landscape effect would be Negligible - Minor, temporary (reversible), direct, and negative.	Low	Small	Negligible - Minor
Access Tracks Approximately 1.6 km of new and upgraded access track will be required at a minimum width of 6 m with some localised widening on bends. The access track will affect areas of rough grassland and one new water crossing would be required in the northern part of the Site. As the works commence on site the magnitude of change would increase from zero to small affecting localised areas. The effects on landscape elements overall will be None – Negligible - Minor and temporary (reversible), direct, and negative.	Low	Zero to Small	None to Negligible - Minor
Control Building and Substation The Control Building and Substation will be established adjacent to the access track within the Site occupying an area of rough grassland (of low landscape sensitivity). It will be a 14m long x 9m wide x 5m high single storey building, housing the switchgear and control equipment, plus secure storage space. Given the limited area affected, the magnitude of change would increase from zero to medium and the landscape effect will be None - Minor, temporary (reversible), direct, and negative.	Low	Zero to Medium	None to Minor

Construction Activity and Assessment	Landscape Appraisal		
	Sensitivity	Magnitude	Level of Effect
Turbines As the works commence on site the magnitude of change associated with the construction of the hard standing, foundations and proposed turbines will increase from zero to large, directly affecting localised areas of rough grassland and landscape character of the Site as a whole. The landscape effect on the Site (low landscape sensitivity) would be None to Minor - Moderate. The nature of these effects will be long term (reversible), direct, and negative to neutral.	Low	Zero to Large	None to Minor - Moderate

Taking all the factors above together, including the low sensitivity of the landscape and the predicted small - medium (with limited large) magnitude of change, the overall predicted effect on the wind farm's landscape during construction would be minor – moderate, long term (reversible), direct, and negative during the construction process.

6.1.2 Visual Effects During Construction

The visual effects of the Development during the construction period would be most noticeable from 'close-range views' of the turbine erection, dismantling and movement of the crane, layout areas, temporary compound, control building and construction vehicles using the site access track and entrance.

The crane would only be discernible for a relatively short period of time and the areas where the greatest effect would be experienced would be those within or immediately adjacent to the Development where there are already wind farm attributes.

The Site is visually open to the north, east and south, with no notable boundary features to screen many of the views of the ground based activities from the Eaglesham Moor Road and Core Paths surrounding the Site. The woodland to the west of the Site would provide screening from road receptors to the west.

Overall the sensitivity of visual receptors is medium (road users) and high (recreational receptors). The magnitude of visual change would vary over the course of the construction phase in line with the extent of infrastructure present on Site. The magnitude would therefore be negligible to small initially and the level of effect (Minor – Minor Moderate) before gradually increasing in relation to the progressive increase in turbine height and numbers. However, the level of visual effect towards the end of the period of turbine erection would not exceed that assessed for the operational period where all three turbines would be at their full height and exert their maximum visual influence.

6.2 Effects of Operation

Compared to the construction phase, the Development would gain a more 'settled' appearance during the operational period when construction activity ceases. This appraisal has considered the operation of the Development in comparison to the existing plateau moorland site, with neighbouring Whitelee Wind Farm.

The Development would be visible over a limited area with potential for indirect effects on the surrounding landscape.

The photomontages accompanying this report (Figures 1.20 – 1.28) are presented to illustrate the Development in the context of the existing wind farms, and local landscape character.

7 MITIGATION MEASURES EMBEDDED WITHIN THE DEVELOPMENT DESIGN

Mitigation is embedded within the design of the Development and reflects the comments of the Reporter[45] on the Moorhouse Farmers scheme. Following a review of the decision, the design of the Development is based on the following principles (as presented in the Screening Report for this Development, with supporting Landscape & Visual Appraisal[46]).

A key objective in the design was to reduce the number of turbines from six to three to achieve a simple, compact and coherent group which would address the Reporter's concerns in relation to the previous Soame scheme.

Following a review of this decision, the resulting design objectives have been identified for the Development, which are detailed in Table 1.6 below.

Table 1.6: Scheme Design Objectives

Scheme Design Objective	Comments
Turbines to be separated from the B764 by at least 500m	The previous Soame scheme turbines were situated 235m (T5) from the B764. The turbines are now separated from the B764 by a distance of 563m (T3), thereby reducing the visual effect of the turbines from the road, and cycle route, users of the B764.
Turbines to be located within, or on the boundary of, the East Renfrewshire Council's 'Area of Higher Capacity' zoning LLCA 3a Bennan (refer to Figure LVA 1.8, Annex B)	The previous Soame scheme comprised of three turbines within the 3a Bennan LLCA and three turbines within the 6a Ballageich Hill LLCA. The ERCWES identifies the 3a Bennan LLCA is *"less sensitive to wind turbines, as a visually enclosed area of largely undifferentiated smooth moorland".* [47] The ERCWES identifies the 6a Ballageich Hill LLCA as *"a more distinctive section of elevated landscape within the moors [which] is considered to be of higher sensitivity, particularly on its steeper northern side, where turbines are likely to be more widely visible. ….. The southern-facing slopes of the hills are considered to be of lower sensitivity as development be more screened from the north, and this area is more associated with the lower-sensitivity smooth moorland."*[48] The layout has been revised, and the proposed turbines within the 6a Ballageich Hill LLCA have been removed. Of the three proposed turbines, two are located within the 3a Bennan LLCA, and one turbine located on the boundary of the two LLCAs. They are also located within, and on the boundary of, the 'Area of Higher Capacity Zone' as identified within the ERCWES (Figure 6 of the ERCWES). The revised layout reduces the landscape effects of the Development on the local landscape character by avoiding the higher ground and rolling landform of Ballageich Hill, and siting the proposed turbines within an area identified as having landscape capacity to accommodate wind turbines.

[45] Planning & Environmental Appeal Division (25 October, 2018). Appeal Decision Notice, PPA-220-2048 Moorhouse Wind Farm Ltd v East Renfrewshire Council (Accessed 05/11/19)

[46] Request for an EIA Screening Opinion under Part 2 Regulation 8, Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 for a three turbine wind farm approximately 5km south west of Eaglesham, East Renfrewshire, dated 15.07.19, Atmos Consulting Ltd & OPEN: Optimised Environments (Annex A) (Accessed 12.11.19)

[47] LUC (2012). East Renfrewshire Council Wind Energy Study, Pages 14 - 15

48 LUC (2012). East Renfrewshire Council Wind Energy Study, Page 17

Scheme Design Objective	Comments
Avoid the siting of turbines on Ballageich Hill	The previous Soame scheme proposed a turbine at an elevation of 294m AOD on the western slopes of Ballageich Hill, and two at the foot of the hillside (273m and 267m AOD respectively). The layout has been revised, removing any proposed turbines from Ballageich Hill. There is one turbine (T3) proposed at the foot of the hillside, at an elevation of 272m AOD. As above, the revised layout reduces the landscape effects of the Development on the local landscape character, and also reduces wider visibility, by avoiding the higher ground. The proposed turbines are sited within an area identified as having landscape capacity to accommodate wind turbines.
Increase separation from the property identified as 'Highfield'	The previous Soame scheme turbines were situated 1040m (T1) from the Highfield property. The proposed turbines are now separated from the Highfield property by a distance of 1,167m (T1).
Increase separation from the M77	The previous Soame scheme turbines were situated 1,534m (T1) from the M77. The proposed turbines are now separated from the M77 by adistance of 1,751m (T1).
Increase separation from Bennan Loch Reservoir	The previous Soame scheme turbines were situated 104m (T2) from Bennan Loch. The proposed turbines are now separated from Bennan Loch by a distance of 135m (T1).

8 APPRAISAL OF RESIDUAL LANDSCAPE EFFECTS

8.1 Appraisal of Effects on Landscape Character

An appraisal of the baseline landscape character has been undertaken to determine the sensitivity of the landscape and its capacity to accommodate the Development.

The landscape character is considered at two levels:

- National/regional setting, in relation to the NatureScot National Landscape Character Assessment;
- Discrete landscape character areas as identified within the ERC Supplementary Planning Guidance, Landscape Capacity Study[49] & Wind Energy Study[50] documents; and
- Local setting, based on field observations to confirm the key features and characteristics pertinent to the study area and the application site.

At a national level, the study area falls two Landscape Character Types (LCT).

[49] LUC (2014). Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley [Online]. Available at: https://www.clydeplan-sdpa.gov.uk/docman/current-plan-july-2017-other-reports/56-additional-supporting-material-background-report-10-gcv-landscape-capacity-study-january-2016/file [Accessed 24/04/2023]
[50] LUC (2012). East Renfrewshire Council Wind Energy Study

8.1.1 National Landscape Character Types

8.1.1.1 NatureScot Plateau Moorland with Wind Farms (Glasgow & Clyde Valley) LCT 214

The Plateau Moorland with Wind Farms (Glasgow & Clyde Valley) is the host LCT for the Development. This LCT is extensive within the Detailed Study Area, and the Development lies within the Western Plateau area.

The appraisal of effects on landscape character includes a review of the conclusions presented in the Landscape Capacity Study and Wind Energy Study documents, and professional judgement from field observations.

The Plateau Moorland with Wind Farms (Glasgow & Clyde Valley) LCT has been appraised as having:

- Landscape value – the area within the Detailed Study Area is an undesignated landscape, the Plateau Moorland with Wind Farms is considered to be of a low landscape value;
- Landscape quality – there is an overall positive landscape quality within the LCT, but there are some areas of alteration/degradation/erosion of features along the M77 & A77 road corridor, within a modified landscape. Overall, the LCT is considered to be of a low - medium landscape quality;
- Capacity to change – there is a high capacity for the LCT to accommodate the Development, which would not detract from the overall existing landscape quality, features and characteristics of the LCT, nor adversely affect the setting of historic or distinctive features within the LCT. This results in a low susceptibility to the Development because the landscape would be able to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape, and neighbouring wind farms within the LCT.
- The Landscape Capacity Study for Wind Turbines in Glasgow & the Clyde Valley Report identifies opportunities for wind farm development where, "*Extensions to existing developments, or establishment of new, discrete clusters, will assist in concentrating cumulative effects, as opposed to dispersing development across the area*"[51].
- The ERC SPG Renewable Energy document[52] provides a summary of sensitivity and capacity for the LCTs within East Renfrewshire, and highlights there is a moderate capacity for large or very large sized turbines, and there may be capacity for development which is 'set back from the ridge'[53]; and
- Landscape sensitivity – this is an undesignated landscape, and the LCT is considered to be of a low landscape sensitivity overall. However, further studies[54] in relation to the capacity of the LCT related to wind farm development, have considered the landscape sensitivity low – medium overall, with higher sensitivity related to inter-visibility of the LCT with adjacent landscapes, and perceptual aspects of wildness in the higher exposed areas of moorland (whilst acknowledging there are visible signs of human activity in most areas of the LCT).

Further detail on the landscape sensitivity of the Plateau Moorland in relation to wind turbines is detailed in the Landscape Capacity Study for Wind Turbines in Glasgow & the

[51] LUC (2014). Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley [Online]. Available at: https://www.clydeplan-sdpa.gov.uk/docman/current-plan-july-2017-other-reports/56-additional-supporting-material-background-report-10-gcv-landscape-capacity-study-january-2016/file, para 5.277, page 108 [Accessed 13/02/2020]

[52] East Renfrewshire Council (2017). Supplementary Planning Guidance Renewable Energy [Online]. Available at: https://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=19383&p=0 [Accessed 13/02/2020]

[53] East Renfrewshire Council (2017). Supplementary Planning Guidance Renewable Energy [Online]. Available at: https://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=19383&p=0, Table 1, page 10, [Accessed 13/02/2020]

[54] LUC (2014). Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley [Online]. Available at: https://www.clydeplan-sdpa.gov.uk/docman/current-plan-july-2017-other-reports/56-additional-supporting-material-background-report-10-gcv-landscape-capacity-study-january-2016/file, Table 5.32, page 108 [Accessed 13/02/2020]

Clyde Valley (LUC, 2014)[55]. The report identifies that the landscape of the LCT is lower in landscape sensitivity than visual sensitivity, and the Western Plateau (location of the Development), is more remote, containing fewer visual receptors. The report also identifies that the Plateau Moorlands LCT has a High – Medium sensitivity to 'very large turbines' of over 120m to blade tip.

The magnitude of change arising from the Development within the LCT would be small for the LCT overall, and small within the Detailed Study Area of 5 km radius. There would be a barely discernible change to aesthetic and / or perceptual attributes of the landscape character and any indirect landscape changes would occur across a very limited geographical area within the LCT given the number of existing turbines (and proposed) within the LCT.

There would be little, or no, undue consequences for the maintenance of the baseline situation and/or achievement of relevant planning policies / strategies given the presence of the existing Whitelee and Middleton Wind Farms in this LCT. This results in a low susceptibility to the Development. The landscape would be able to accommodate the Development without undue adverse effects, taking account of the existing character and quality of the landscape.

The landscape effects within the LCT overall would be ***Negligible - Minor***, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the Plateau Moorland with Wind Farms (Glasgow & Clyde Valley) LCT.

8.1.1.2 SNH Plateau Moorland with Wind Farms (Ayrshire) LCT 79

The Plateau Moorland with Wind Farms (Ayrshire) neighbours the Development, with the boundary 500m to the south west. This LCT occupies the west and south western extents of the Detailed Study Area. Whilst the Development is not situated within the LCT, indirect landscape effects are anticipated given the proximity of the Development to the LCT.

The operational Whitelee Wind Farm, comprising of 215 turbines (110m to 140m high) is located in this LCT. The consented Sneddon Law Wind Farm comprising of 15 turbines (130m high) is also located in this LCT, bordering Whitelee Wind Farm to the south west.

The appraisal of the effects on landscape character includes a review of the conclusions presented in the East Ayrshire Landscape Wind Energy Capacity Study[56], and professional judgement from field observations.

The landform of the LCT is described as *"a gently undulating plateau with a simple landform of broad rounded hills and flatter mosses and occasional loch and reservoir basins…. The predominantly simple, gently undulating landform of this landscape reduces sensitivity[57]"*

The Plateau Moorland with Wind Farms (Ayrshire) LCT has been appraised as having:

- Landscape value – the area within the Detailed Study Area is an undesignated landscape. The Plateau Moorland with Wind Farms (Ayrshire) LCT is considered to be of a low landscape value;
- Landscape quality – there is an overall positive landscape quality within the LCT, but there are some areas of alteration/degradation/erosion of features along the M77 & A77

[55] LUC (2014) Landscape Capacity Study for Wind Turbine Development in Glasgow and the Clyde Valley [Online]. Available at: https://www.clydeplan-sdpa.gov.uk/docman/current-plan-july-2017-other-reports/56-additional-supporting-material-background-report-10-gcv-landscape-capacity-study-january-2016/file, Table 5.34, page 109 [Accessed 13/02/2020]

[56] Carol Anderson Landscape Associates (2018). East Ayrshire Landscape Wind Energy Capacity Study Available at: https://www.east-ayrshire.gov.uk/Resources/PDF/L/Landscape-wind-capacity-study.pdf [Accessed 24/04/2023]

[57] Carol Anderson Landscape Associates (2018). East Ayrshire Landscape Wind Energy Capacity Study, Page 101 Available at: https://www.east-ayrshire.gov.uk/Resources/PDF/L/Landscape-wind-capacity-study.pdf [Accessed 24/04/2023]

road corridor to the west and north west, Whitelee Wind Farm and commercial forestry, within a modified landscape. Overall, the LCT is considered to be of a low - medium landscape quality;

- Capacity to change – given the presence of existing wind turbines within the LCT, and neighbouring LCT, there is a high capacity for the LCT to accommodate the Development, which would not detract from the overall existing landscape quality, features and characteristics of the LCT, nor adversely affect the setting of historic or distinctive features within the LCT. This results in a low susceptibility to the Development taking account of the existing character and quality of the landscape; and
- Landscape sensitivity – this is an undesignated landscape, and the LCT is considered to be of a low landscape sensitivity overall. However, further studies[58] in relation to the capacity of the LCT related to wind farm development, have considered the landscape sensitivity high – medium sensitivity to the very large turbine typologies of over 130m to blade tip.

"*Turbines <150m high would fit with the size of existing/consented wind farm developments. This typology would need to be similarly associated with core upland areas with a simpler character in order to present a clear design rationale and minimise cumulative effects...*" [59]

The report also suggests there may be opportunities in sparsely settled areas of moorland and forestry within the upland core of the LCT where very limited number of large typology wind turbines could be sited, minimising effects on adjacent settled lower hill slopes.

The magnitude of change arising from the Development within the LCT would be small for the LCT overall, and small within the Detailed Study Area of 5 km radius. There would be a barely discernible change to aesthetic and / or perceptual attributes of the landscape character and any indirect landscape changes would occur across a very limited geographical area within the LCT given the number of existing turbines (and proposed) within the LCT.

There would be little, or no, undue consequences for the maintenance of the baseline situation and/or achievement of relevant planning policies / strategies given the presence of the existing and consented Whitelee and Sneddon Wind Farms in this LCT. This results in a low susceptibility to the Development. The landscape would be able to accommodate the Development without undue adverse effects, taking account of the existing character and quality of the landscape.

The landscape effects within the LCT overall would be ***Minor to Moderate - Minor***, adverse but reversible, and there would be no discernible improvement or deterioration to the existing landscape character of the Plateau Moorland with Wind Farms (Ayrshire) LCT.

8.1.2 Local Landscape Character Areas (LLCA)

The ERCWES (2012) sub-divided the LCTs into discrete LLCAs. At a regional / local level, the landscape character of the site and immediate surrounding area is within the Bennan (3a) and Ballageich Hill (6a) LLCAs.

8.1.2.1 Bennan (3a) LLCA

This LLCA is located within the Plateau Moorland with Wind Farms (Glasgow & Clyde Valley LCT). It is characteristic of the smooth and gently undulating open grass moorland with rough grazing and coniferous plantation as land cover, with a small reservoir and limited land cover. The plantation woodland to the west of the Site, and the Bennan & Ballageich Hills to the north east and east provide visual containment. There are scattered residential properties, and the M77 / A77 corridor is evident bordering the LLCA to the north.

[58] Carol Anderson Landscape Associates (2018). East Ayrshire Landscape Wind Energy Capacity Study, Page 101-104 Available at: https://www.east-ayrshire.gov.uk/Resources/PDF/L/Landscape-wind-capacity-study.pdf [Accessed 13/02/2020]

[59] Carol Anderson Landscape Associates (2018). East Ayrshire Landscape Wind Energy Capacity Study, Page 102 Available at: https://www.east-ayrshire.gov.uk/Resources/PDF/L/Landscape-wind-capacity-study.pdf [Accessed 13/02/2020]

Turbines 1 & 2 of the Development are located within the Bennan (3a) LLCA, and Turbine 3 is located on the boundary of the LLCA.

Whilst there are no existing wind turbines within the LLCA, Whitelee Wind Farm is a dominant presence bordering the south east of the LLCA, with the closest wind turbines 1.2 km distance from the LLCA, and Middleton Wind Farm visible 4 - 4.5 km to the north.

The Bennan 3a LLCA has been appraised as having:

- Landscape value – the area within the Detailed Study Area is an undesignated landscape. The LLCA is considered to be of a low landscape value;
- Landscape quality – there is an overall positive landscape quality within the LCT, but there are some areas of alteration/degradation/erosion of features along the M77 & A77 road corridor to the west and north west, Whitelee Wind Farm and commercial forestry, within a modified landscape. Overall, the LLCA is considered to be of a low - medium landscape quality;
- Capacity to change – there is a high capacity for the LLCA to accommodate the Development. It would not detract from the overall existing landscape quality, features and characteristics of the LLCA, due in part to the existing influence of wind farm development in neighbouring character areas. This results in a low susceptibility to the Development taking account of the existing character and quality of the landscape; and
- Landscape sensitivity – this is an undesignated landscape, and the LLCA is considered to be of a low landscape sensitivity overall.

"This area is considered to be less sensitive to wind turbines, as a visually enclosed area of largely undifferentiated smooth moorland. Developments in this area may give rise to cumulative effects alongside Whitelee, for example when viewed from the Eaglesham Road…. Overall, this area has higher capacity to accommodate wind energy development of 20MW or over".[60]

The magnitude of change arising from the Development within the LLCA would be large. There would be a large scale change to the key characteristics of the LLCA and the aesthetic and / or perceptual attributes of its landscape character. While the Development would only occupy a small portion of the LLCA, its impact would be perceptible across the entire area due to its open nature. However, considering the proximity of the existing Whitelee wind turbines, the LLCA would have the capacity to accommodate the Development without undue adverse effects, taking account of the existing character and quality of the landscape.

The landscape effects within the LCT overall would be ***Moderate***, adverse but reversible, to the existing landscape character of the Bennan (3a) LLCA.

8.1.2.2 Ballageich Hill (6a) LLCA

Turbine 3 of the Development is located on the boundary of this LLCA (as indicated by Figure 1.8, Annex B).

This LLCA is characteristic of the smooth, open grass moorland upon low, rounded hills which are elevated above the surrounding plateau moorland (whilst remaining characteristic of the plateau moorland in land cover and scale).

Whilst there are no existing wind turbines within the LLCA, Whitelee Wind Farm has a strong influence, bordering the south of the LLCA, with the closest wind turbines 0.7 km distance from the LLCA, and Middleton Wind Farm visible 3.7 km to the north west.

The Ballageich (6a) LLCA has been appraised as having:

[60] LUC (2012). East Renfrewshire Council Wind Energy Study, paras 3.39 – 3.40, page 15

- Landscape value – the area within the Detailed Study Area is an undesignated landscape. The LLCA is considered to be of a low landscape value;
- Landscape quality – there is an overall positive landscape quality within the LLCA, despite its simple, rough grazing grass and moss land cover. The LLCA is considered to be of a low - medium landscape quality;
- Capacity to change – there is some limited capacity for the LLCA to accommodate the Development. Whilst it would not detract from the overall existing landscape character, landscape quality, features and characteristics of the LLCA, and the shared landscape characteristics of the surrounding plateau moorland landscape, there would be lower capacity for wind turbines within this LLCA due to the elevated positions upon Ballageich Hill. This results in a medium susceptibility to the Development taking account of the existing character and quality of the landscape; and
- Landscape sensitivity – this is an undesignated landscape, and the LLCA is considered to be of a low landscape sensitivity overall.

The magnitude of change arising from the Development would be large within the Ballageich (6a) LLCA. There would be a large-scale change to the key characteristics of the LLCA, and aesthetic and / or perceptual attributes of the landscape character.

Turbine 3 would be located on the boundary of the LLCA, as the land rises at the foot of Ballageich Hill and given the open nature of the LLCA, the Development would be perceptible across the whole of the LLCA. However, considering the similar proximity of the existing Whitelee Wind Farm, the proposed wind turbines would not introduce a new defining characteristic into the majority of this landscape unit.

The landscape effects within the LLCA overall would be ***Minor to Moderate and Moderate***, adverse but reversible, to the existing landscape character of the Ballageich (6a) LLCA.

The design objectives of the Development, to address the comments raised in the Soame scheme, result in a reduction of the potential landscape effects on the local landscape character of the Bennan and Ballageich Hill LLCAs.

Separating the turbines from the B764 by at least 500m (the closest turbine is situated 563m from the B764 road), is similar to that of the neighbouring Whitelee Wind Farm, and reduces the landscape effects experienced along the road corridor.

The B764 road follows a relatively consistent north-east to south-west alignment across the plateau with some short, subtle deviations along the route. These changes in direction alter visibility to the north and south, and therefore influences the experience of the local landscape. This, combined with the increased separation from the B764 road, and compact turbine layout of the three turbines, means that the proposed turbines would be viewed obliquely, rather than in direct views when travelling west and east along the closest sections of the B764.

The variation in the local topography north and south of the route of the B764 road, including Greenfield Hill and Queenseat Hill restricts views of existing Whitelee turbines to the south of the road, and would also restrict views of the proposed turbines north of the road, and reduces the effects on the landscape experienced along the road corridor.

Where there are available views of the Development, when travelling west to east along the B764 road, the proposed turbines would be seen as a compact group, within a local landscape of plateau moorland, a medium to large scale landscape with a panoramic view comprising of many elements in the background.

The local landscape is also experienced from local roads and footpaths, and views of the Development would be within the context of the plateau moorland landscape, with its communications masts, commercial forestry plantations, the existing Whitelee Wind Farm, and the M77 corridor.

Whilst the local landscape is undesignated, the direct and indirect landscape effects, would be restricted and would be ***Minor to Moderate*** and ***Moderate*** adverse but reversible, to

the existing local landscape character overall, with indirect landscape effects reduced where views of the Development are screened by local topography and commercial forestry.

To the north and west of the Development the predicted indirect landscape effects would also reduce with distance The proposed turbines viewed within a peri – urban, working rural landscape, the M77 motorway corridor, and to the south, within the Whitelee Wind Farm landscape.

8.1.3 Landscape Character of the Site

The landscape character of the Site has been assessed as having:

- Landscape value – the area within the D-etailed Study Area is an undesignated landscape. The landscape of the Site is considered to be of a low landscape value;
- Landscape quality – the rough grazed moorland is considered to be of a low - medium landscape quality;
- Capacity to change – there is a high capacity for the landscape character of the Site to accommodate the Development. This is because it would not detract from the overall existing landscape character, landscape quality, features and characteristics of the site, which are currently strongly influenced by nearby wind farm development, and due to the visually enclosed nature of the Site. This results in a low susceptibility to the Development taking account of the existing character and quality of the landscape; and
- Landscape sensitivity – this is an undesignated landscape, and the Site is considered to be of a low landscape sensitivity overall.

The magnitude of effect arising from the Development within the Site would be large where there would be an addition of large-scale landscape elements within the Site.

Indirect landscape effects of the existing nearby wind turbines are already evident in the landscape character of the Site, and the addition of the proposed wind turbines would reflect the key characteristics of the landscape character of the Site, and the surrounding Plateau Moorland with Wind Farms LCT within which the Site is located.

There would be little, or no, undue consequences for the maintenance of the baseline situation and/or achievement of relevant planning policies / strategies given the presence of the existing wind farms nearby. This results in a low susceptibility to the development. The landscape would be able to accommodate the Development, taking account of the existing character and quality of the landscape.

The landscape effects would be ***Moderate*** adverse but reversible, and there would be no discernible improvement or deterioration to the existing character of the local landscape.

9 APPRAISAL OF RESIDUAL VISUAL EFFECTS

Visual effects are concerned wholly with the effect of the Development on views, and the general visual amenity as experienced by people.

Visual effects are appraised by considering the sensitivity of the receptor (people) against the proposed magnitude of change to determine a level of visual effect. The import of this effect largely relates to the activity and the experience of the viewer and the visual composition, character, context, and the overall ability of the landscape in that view to accommodate the Development in design terms. Visual effects are appraised in relation to the agreed viewpoints, properties and settlements, tourist and recreational destinations including tourist routes as well as main transport routes.

9.1 Viewpoint Appraisal

An appraisal of visual effects was undertaken from nine viewpoints, which were selected to replicate those viewpoints from the previous landscape and visual assessments, and the viewpoints represent typical views from key receptors at varying distances and orientations from the site. The selected viewpoints were agreed in consultation with ERC.

From each viewpoint the following information is provided, and presented in accordance with NatureScot Guidance[61]:

- A representative baseline photograph (90 / 180 / 360 degree horizontal angle of view) to show the context of location of the viewpoint;
- A wireline illustration (53.5 degree horizontal angle of view);
- A photomontage illustration (53.5 degree horizontal angle of view);
- A description of the existing view;
- A qualitative appraisal of the potential visual effects considering the sensitivity of the receptor and magnitude of change in view.

It is recognised that different receptors would appreciate the landscape in many different ways, depending on whether they live in, work in, or are holidaying in the area and how they are travelling through e.g. on road, foot, water etc. Those on holiday would experience the landscape in its broader sense forming an opinion on scenic quality based on first impression and would appreciate the landscape for its distinctiveness at a high level. Conversely visitors may cast a more critical eye over the introduction of visual detractors in the landscape.

Those living within, or travelling through, the landscape of the study area on a regular basis may appreciate it beyond the perception of a visitor and may appreciate familiarity of landscape and views, based on their experience of viewing it in a certain way, over time and in its present state without intervention. Therefore, those who notice change within the landscape may be more acutely affected by change, irrelevant of the scale of the Development. There may also be a different appreciation for change where such change for instance brings social or economic benefits, and as such it is difficult to interpret how such changes would be interpreted by various users other than as set out in the methodology in Annex A. On this basis we have assessed all such receptors as being of medium - high sensitivity to change and as such have assessed any such effects on a worst-case basis.

The viewpoint locations are shown on Figure 1.11 (Annex B). Photographs and photomontages of the existing baseline and the Development from each viewpoint are shown in Viewpoints 1 – 9, Figures 1.20 to 1.28 (Annex B).

Viewpoint selection and micro-siting of each viewpoint location accord with technical guidance[62].

9.1.1 Viewpoint 1 – Kingswell Road, near Highfield

9.1.1.1 Baseline

This viewpoint is representative of views from the local road network on Kingswell Road, west of the Development, situated at the end of the private driveway to two residential properties at 'Highfield'.

[61] Scottish Natural Heritage (February, 2017). *Visual Representation of Wind Farms,* Version 2.2, [Accessed 24/04/2023]

[62] Landscape Institute (2011). Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment, and Scottish Natural Heritage (2018) Visualisations for Aquaculture (Accessed 18.10.19).

The Plateau Moorland with Wind Farm landscape in the view extends east and south, with the M77 / A77 road corridor evident to the north. The land cover is rough grassland used for grazing. Shieldhill Farm is visible to the south east.

The existing Whitelee Wind Farm turbines are visible in the horizon 2.06 km distance to the south and east, and Middleton Wind Farm is visible on the horizon 3.75 km north.

Refer to Figure 1.20, Annex B.

9.1.1.2 Sensitivity

Visual receptors would include residents of the two detached properties at Highfield (Highfield Farm and Highfield Cottage), and users of the local road network, and cyclists following the Route 6 Mearns & Moor locally promoted cycle route. Some receptors would be of a medium sensitivity as cyclists on this locally promoted cycle route and road users in this location, and residents would be of a high sensitivity.

9.1.1.3 Magnitude of Change

Given the direct view of the Development at a distance of 0.91 km, within the open plateau moorland landscape, the predicted magnitude of change arising from the Development would be large, where all three turbines could be visible from this location. Turbine 3 would be viewed to the rear of Turbine 1 in this location. All three hubs, and all blades of the turbines would be visible.

9.1.1.4 Level of Visual Effect

The nature of these effects would be ***Moderate – Major (local road users & cyclists) and Major (residents)***, long-term (reversible), cumulative, and adverse given the proximity of the proposed turbines at 0.91 km from this location.

9.1.2 Viewpoint 2 – Greenfield Hill Mast

9.1.2.1 Baseline

This viewpoint is representative of local landscape context along Eaglesham Road, south east of the Development, situated at an elevated location above the local road which links Eaglesham and the M77 / A77 corridor. The road is a popular cycle route, Route 13 (Waterside and back through Whitelee), which leads to the Whitelee Visitor Centre. In addition, a Core Path follows a route along Eaglesham Road.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, with distant views of the Glasgow & Clyde Valley evident to the east. The land cover is rough grassland used for grazing. Ballageich Hill forms the near horizon to the south, where the smaller hills east of the site provide enclosure south of the road.

To the south of the viewpoint there are open and extensive views across Whitelee Wind Farm (0.5 km distance), Ardoch and Over Enoch Wind Farms (4.8 and 3.3 km distance respectively).

Refer to Figure 1.21, Annex B.

9.1.2.2 Sensitivity

Visual receptors would include users of the local road network, Core Path users and cyclists following the locally promoted cycle route. Road users would be of a medium sensitivity, and cyclists would be of a high sensitivity.

9.1.2.3 Magnitude of Change

Given the direct view of the Development at a distance of 1.64 km within the open plateau moorland landscape, the predicted magnitude of change arising from the Development

would be large. All three turbines could be visible as a small cluster from this location. All three hubs, and all blades of the turbines would be visible.

9.1.2.4 Level of Visual Effect

The nature of these effects would be ***Moderate – Major (Local road users) and Major (recreational receptors)***, long-term (reversible), cumulative, and adverse given the proximity of the proposed turbines at 1.64 km from this location.

9.1.3 Viewpoint 3 – Threap Knowe

9.1.3.1 Baseline

This viewpoint is representative of views from the local road network along the A77 Ayr Road / M77 corridor at the junction with Highfield Road, north west of the Development. The viewpoint is representative of the view from Route 6 Mearns & Moor locally promoted cycle route.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, with views to the west screened by coniferous plantation, and views to the south restricted by road side vegetation along the M77.

The land cover is rough grassland used for grazing. Bennan Hill forms the horizon to the east.

To the south of the viewpoint there are open and extensive views towards Whitelee Wind Farm (3.1 km distance) on the horizon.

Refer to Figure 1.22, Annex B.

9.1.3.2 Sensitivity

Visual receptors would include users of the local road network and cyclists following the locally promoted cycle route. Road users and cyclists would be of a medium sensitivity.

9.1.3.3 Magnitude of Change

Given the direct view of the Development at a distance of 1.7 km within the open plateau moorland landscape, the predicted magnitude of change arising from the Development would be large. All three turbines would be visible from this location, evenly spaced on the horizon. All three hubs, and all blades of the turbines would be visible.

9.1.3.4 Level of Visual Effect

The nature of these effects would be ***Moderate – Major***, long-term (reversible), cumulative, and adverse given the proximity of the proposed turbines at 1.7 km from this location.

9.1.4 Viewpoint 4 – Swan Cottages

9.1.4.1 Baseline

This viewpoint is representative of views from residential properties, Core Path ERC/D, and from Route 4 Back of Ballageich & Humbie Road cycle route, north east of the Development.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, with views to the west and south screened by coniferous plantations on the north and eastern slopes of Bennan Hill.

The land cover is grassland used for grazing in the foreground, and rough pasture and forestry at higher elevations. Bennan Hill forms the horizon to the east.

To the north of the viewpoint there are views towards Middleton Wind Farm (3.8 km distance) on the horizon.

Refer to Figure 1.23, Annex B.

9.1.4.2 Sensitivity

Residential receptors would be of a high sensitivity.

9.1.4.3 Magnitude of Change

Given the direct view of the Development at a distance of 1.91 km within the open plateau moorland landscape, the predicted magnitude of change arising from the Development would be small. Only Turbine 3 would be visible in part (partial views of the turbine blades), with the conifer plantation screening views of the blade tips of Turbines 1 & 2.

9.1.4.4 Level of Visual Effect

The nature of these effects would be ***Moderate (residential receptors)***, long-term (reversible), cumulative, and adverse given the proximity of the proposed turbines at 1.91 km from this location.

9.1.5 Viewpoint 5 – Mid Floak /M77

9.1.5.1 Baseline

This viewpoint is representative of views from the local road network near residential properties at Mid Floak, north west of the Development and in close proximity to the M77.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, however views are dominated by coniferous plantations and the access bridge to Floak Quarry which crosses the M77.

The land cover is coniferous plantation rising to the top of Drumboy Hill south of the viewpoint, with the quarry access road in the foreground.

Refer to Figure 1.24, Annex B.

9.1.5.2 Sensitivity

Visual receptors, as local road users accessing the residential properties in this location, would be of a medium sensitivity.

9.1.5.3 Magnitude of Change

Given the direct view of the Development at a distance of 2.28 km within the M77 road corridor, the predicted magnitude of change arising from the Development would be medium. All turbines would be visible in part, with only the blades of Turbine 2 visible, at an elevated location from the viewpoint location, behind the conifer plantation. The hubs and blades of Turbines 1 & 3 would be visible in part, and blade tips of Turbine 2.

9.1.5.4 Level of Visual Effect

The nature of these effects would be ***Moderate***, long-term (reversible), and adverse given the proximity of the proposed turbines at 2.28 km from this location.

9.1.6 Viewpoint 6 – Bonnyton Golf Club Car Park

9.1.6.1 Baseline

This viewpoint is representative of views from the car park and club house of Bonnyton Golf Club, north east of the Development.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, however views are strongly influenced by the golf course in the foreground, and partially screened by coniferous plantation to the north of the viewpoint.

Whitelee Wind Farm is theoretically visible to varying degrees on the horizon to the south and southeast (3.24 km distance), but in reality large parts are screened by intervening forestry in views to the southeast.

Refer to Figure 1.25, Annex B.

9.1.6.2 Sensitivity

Visual receptors, as recreational receptors in this location, would be of a medium sensitivity.

9.1.6.3 Magnitude of Change

Given the direct view of the Development on the horizon to the west at a distance of 4 km, the predicted magnitude of change arising from the Development would be small with only blade tips of the turbines visible beyond the golf course in the near and middle distance.

9.1.6.4 Level of Visual Effect

The nature of these effects would be ***Minor*** long-term (reversible), cumulative, and neutral due to the significant landform screening, the views of existing turbines within the landscape, and the distance of the proposed turbines at 4 km from this location.

9.1.7 Viewpoint 7 – Eastwood Golf Club Car Park / Mearns Road

9.1.7.1 Baseline

This viewpoint is representative of views from the local road network, Mearns Road, near to the currently closed Eastwood Golf Club (since 2019), and north east of the Development. The viewpoint is also representative of the view from the Route 6 Mearns & Moor locally promoted cycle route.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, however views are influenced by the golf course in the foreground and midground, and extensive coniferous plantations to the south east of the viewpoint.

Refer to Figure 1.26, Annex B.

9.1.7.2 Sensitivity

Visual receptors including road users and cyclists on this locally promoted cycle route would be of a medium sensitivity.

9.1.7.3 Magnitude of Change

Given the direct view of the Development at a distance of 4 km on the horizon to the west, the predicted magnitude of change arising from the Development would be small with only partial views of the turbines in the form of blade tips above the conifer plantation on the horizon beyond the golf course.

9.1.7.4 Level of Visual Effect

The nature of these effects would be ***Minor***, long-term (reversible), and adverse given the distance of the proposed turbines at 4.01 km from this location.

9.1.8 Viewpoint 8 – M77 East of Stewarton

9.1.8.1 Baseline

This viewpoint is representative of views from the local road network within the M77 corridor and is representative of the views from the M77 road when driving north, south west of the Development.

The Plateau Moorland with Wind Farm landscape in the view extends in all directions, however views are strongly influenced by the M77 in the foreground, with Whitelee Wind Farm on the horizon to the east of the viewpoint.

Refer to Figure 1.27, Annex B.

9.1.8.2 Sensitivity

Visual receptors, as road users in this location, would be of a low sensitivity.

9.1.8.3 Magnitude of Change

Given the direct view of the Development at a distance of 5.33 km on the horizon to the east, the predicted magnitude of change arising from the Development would be small with partial views of the turbines, and blade tips of the turbines visible above the the M77 road corridor and the conifer plantation on the horizon .

The effect of the Development, although limited in scale and extent, would be further moderated by its partially developed, rural context, which includes a busy dual carriageway, conifer forestry plantations, and Whitelee Wind Farm. Given this context, the Development would not exert a defining influence on the view.

9.1.8.4 Level of Visual Effect

The nature of these effects would be ***Negligible - Minor***, long-term (reversible), cumulative and adverse given the distance of the proposed turbines at 5.33 km from this location.

9.1.9 Viewpoint 9 – Neilston Pad

9.1.9.1 Baseline

This viewpoint is representative of views from a locally promoted recreational route, at an elevated location within the Rugged Upland Farmlands LCT, North West of the Development.

The Plateau Moorland with Wind Farm landscape in the view extends to the south east of the viewpoint, however views are strongly influenced by livestock grazing fields in the foreground and Middleton Wind Farm (1.55 km distance) and Harelaw Dam in the midground, and to a lesser extent the more distant Whitelee Wind Farm on the horizon (8.22 km distance) to the south east of the viewpoint.

Refer to Figure 1.28, Annex B.

9.1.9.2 Sensitivity

Visual receptors, as recreational in this location, would be of a medium-high sensitivity.

9.1.9.3 Magnitude of Change

Given the direct view of the Development at a distance of 6.74 km on the horizon to the east, the predicted magnitude of change arising from the Development would be negligible, with only partial views of the turbines, two hubs and blades of three turbines visible beyond Middleton Wind Farm. The wind turbines would be clearly located in an expansive moorland with wind farms landscape beyond the smaller scale, rural landscape in the foreground. Their impact would be moderated by the Middleton turbines at closer range, and the broad

backdrop of Whitelee Wind Farm that extends across a large portion of the view. The introduction of the Moorshield wind turbines would therefore not exert a defining influence on the wider view from Neilston Pad.

9.1.9.4 Level of Visual Effect

The nature of these effects would be ***Negligible***, long-term (reversible), cumulative and adverse given the distance of the proposed turbines at 6.74 km from this location.

9.2 Visual Effects on Views from Residential Receptors & Settlements

9.2.1 Residential Properties

The effect of the Development on the visual amenity and living conditions of local residents requires particular attention because they would experience the proposed wind turbines from different locations, at different times of the day, usually for longer periods of time, and in different seasons.

The Reporter, when assessing the previous six-turbine Soame scheme, concluded that when considering the visual effects on residential amenity, there would only be one case where a significant visual effect would arise at a property, Highfield. The Reporter noted that Shieldhill was an 'involved' property, and found that the impact on Shieldhill was acceptable (paragraph 62)[63].

Paragraph 80 states that *"Regarding visual impact on residential properties, the one significantly adverse effect would be at Highfield. I find that this on its own would not be sufficient to justify refusal of planning permission."*[64]

It should be noted that this Appraisal does not determine the significance of effects, because it is based on a non-EIA methodology, making a direct comparison with the Reporter's findings difficult. What can be inferred from this appraisal is that smaller number of turbines, at greater distance from Highfield, are likely to reduce the overall magnitude of change on the amenity of the property, notwithstanding the taller turbines proposed.

All of the residents within and visitors to settlements and residential properties are considered to be of high sensitivity in accordance with the GLVIA3.

Whilst individual or specific observations are made concerning views or potential views in the direction of the Development in respect of the relevant properties, a 'summation' is offered based on an opinion 'in the round' i.e. taking all relevant factors into account which could include the various potential views from the house, the surrounding amenity ground, the access/egress points and the immediately adjacent highway taking the views in the direction of the Development into account along with alternative views which may be available.

In all, 13 properties (including four groups of two properties) have been assessed within 2 km (a couple of properties on the boundary of the 2 km radius have been included where direct views of the Development may occur) via a combination of a site visit to the closest public location in the vicinity of that property (usually the highway), desk based assessment, the production of wireframes and the use of Google Earth. The 2km radius accords with the suggested distance for wind turbines in the Landscape Institute's Residential Visual Amenity Assessment Technical Guidance Note 2/19[65].

[63] Planning & Environmental Appeal Division (25 October, 2018). Appeal Decision Notice, PPA-220-2048 Moorhouse Wind Farm Ltd v East Renfrewshire Council (Accessed 05/11/19)
[64] Planning & Environmental Appeal Division (25 October, 2018). Appeal Decision Notice, PPA-220-2048 Moorhouse Wind Farm Ltd v East Renfrewshire Council (Accessed 05/11/19)
[65] Landscape Institute (2019). Residential Visual Amenity Assessment (RVAA), Technical Guidance Note 2/19. Available at: https://www.landscapeinstitute.org/technical-resource/rvaa/ [Accessed 25/04/2023]

A description of the baseline visual amenity at these 13 properties (illustrated in Figure 1.13, Annex B) and any predicted changes to it are provided in Table 1.7 below. Where a large magnitude of visual change has been assessed, consideration has then been given to whether the visual effects likely to be experienced as a result of the Development would lead to the 'Residential Visual Amenity Threshold' being reached.

Table 1.7: Visual Effects on Residential Properties

Property	Description of Effect
1 - Shieldhill	Nearest proposed turbine: Turbine 2 – 438 m Description: There are open and oblique views to the existing Whitelee Wind Farm from the rear of the two-storey farm property which is orientated north west. The property is isolated, within the plateau moorland. There is an open and south facing garden area to the rear of the property, and long access track leading from Kingswell Road to the east. Barns / outbuildings are situated to the east of the property. Cumulative Developments: The Whitelee Wind Farm is visible from the access track and from the rear of property at a distance of 1.42 km to the south, and Middleton Wind Farm is visible on the horizon 4.4 km to the north where it is visible from the main elevation of the property facing north, and from the access track. Magnitude of Change: The predicted magnitude of change arising from the Development would be large. Level of Effect: ***Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse. RVAA Threshold: Given the distance of this property from the closest proposed wind turbine, the Development could be considered overbearing, such that the threshold is met. However the Reporter did not consider that this effect was unacceptable in the Soame SoA. (NOTE: This is a financially interested party to the Development).
2 – Highfield (2 properties)	Nearest proposed turbine to Highfield Bungalow: Turbine 1 – 1.19 km Nearest proposed turbine to Highfield House: Turbine 1 – 1.24 km Description: There are open and oblique views to the existing Whitelee Wind Farm from the rear of the two properties at Highfield. The properties are accessed by a private drive, within the plateau moorland, with views to the west screened by conifer plantation. There is an open and south east facing garden area, and rear elevations, to the rear of the properties, and long access track leading from Kingswell Road to the west. The properties are orientated north to the access track. Both properties have established garden vegetation which filters views to the south. Cumulative Developments: The Whitelee Wind Farm is visible from the access track and from the rear of properties at a distance of 2.2 km to the south and south east, where it is visible from the rear elevation of the properties, and from the access track to the properties. Magnitude of Change: The predicted magnitude of change arising from the Development would be large. Level of Effect: ***Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse. RVAA Threshold: The Development would be located at a slightly higher elevation than the two properties, but not to such a degree that it would be overbearing, given the intervening distance. While the wind turbines would appear as prominent, large scale elements, they would occupy a relatively narrow sector of the available views from the residential properties. As a result, it is not considered that the RVAA threshold is reached in respect of these two properties.

Property	Description of Effect
	Refer to Viewpoint 1, Figure 1.20, Annex B.
3 – South Moorhouse Farm	Nearest proposed turbine: Turbine 3 – 1.78 km Description: There are filtered views to the existing Middleton Wind Farm from the rear of the South Moorhouse Farm. The two storey, stone and render farm property is within a farm yard, surrounded by farm buildings / barns, and mature trees. There is an open and south east facing garden to the property. There is mature deciduous tree cover within the garden to the rear which may filter views to the south. The property is orientated north to the farm yard and access road (Muirshield Road), which is used by traffic visiting the Scottish Water buildings, and fishing club access for the two lochs south of the farm. Cumulative Developments: The Middleton Wind Farm is visible from the access track when leaving the property at a distance of 4.4 km to the north. Magnitude of Change: The predicted magnitude of change arising from the Development would be medium, due to the mature tree cover which would filter views to the south west towards the Development. Where views of the Development would be available within the curtilage of the property the turbines would be partially screened by topography, and Turbine 3 visible on the horizon. Level of Effect: ***Moderate - Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse. (NOTE: This is a financially interested party to the Development).
4 – South Moorhouse Lodge (2 properties)	Nearest proposed turbine: Turbine 3 – 1.92 km Description: These are two, two storey properties of recent construction. There are open views to the existing Middleton Wind Farm from the main north facing elevations of the South Moorhouse Farm Lodges. There are open and north facing front gardens and drive access to the properties from Muirshield Road. Gardens to the rear are enclosed, with the land rising to the rear of the properties. Cumulative Developments: The Middleton Wind Farm is visible from the access track when leaving the property at a distance of 3.7 km to the north. Magnitude of Change: Views of the Development would be from the side elevations of the properties, and from the driveway, when exiting the properties. The predicted magnitude of change arising from the Development would be small, due to the partial screening by coniferous tree cover on Bennan Hill which would filter views of Turbines 1 & 2, and Turbine 3 would be partially visible to the south. Level of Effect: ***Moderate*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse. Refer to Viewpoint 4, Figure 1.23, Annex B.
5 – Swan Cottages (2 properties)	Nearest proposed turbine: Turbine 3 – 1.93 km Description: These are two, two storey semi-detached properties of mid-century construction. There are open and oblique views to the existing Middleton Wind Farm from the main north east facing elevations of Swan Cottages. There are open and north facing front gardens and drive access to the properties from Muirshield Road. Gardens to the rear are open, with the grazing land to the rear of the properties, rising in gradient with coniferous plantation woodland on higher elevations. Cumulative Developments: The Middleton Wind Farm is visible from the driveways and front of the properties at a distance of 3.7 km to the north. Magnitude of Change: Views of the Development would be from the rear garden and elevations of the properties. The predicted magnitude of change arising from the Development would be small, due to the partial screening by coniferous tree cover on

Property	Description of Effect
	Bennan Hill which would filter views of Turbines 1 & 2, and Turbine 3 would be partially visible to the south. Level of Effect: ***Moderate*** The nature of these effects would be adverse, long-term (reversible), cumulative, indirect and adverse.
6 – Bennan Farm	Nearest proposed turbine: Turbine 1 – 1.75 km Description: This property is accessed by a private driveway from Langlee Road, within the plateau moorland. Aerial photography reveals that the property is orientated to the south, with a garden area to the south and east, and little garden vegetation to filter views to the south. Coniferous plantation surrounds the property to the south and west on the lower slopes of Bennan Hill. Cumulative Developments: Neither Whitelee or Moorshield Wind Farms are visible from this property. Magnitude of Change: The predicted magnitude of change arising from the Development would be small, due to the partial screening by coniferous tree cover on Bennan Hill which would filter views of Turbines 1 & 2, and Turbine 3 would be partially visible to the south. Level of Effect: ***Moderate*** The nature of these effects would be long-term (reversible), indirect and adverse.
7 – Langlee Farm (2 properties)	Nearest proposed turbine to Langlee Bungalow: Turbine 1 – 2.05 km Nearest proposed turbine to Langlee Farmhouse: Turbine 1 – 2.10 km Description: The properties are accessed by a farm track, within the plateau moorland. They comprised of a south facing farm house which is surrounded by farm buildings around a small farm yard. The second property is a bungalow, of modern construction, with an open rear garden and west and south elevations. Both properties are orientated towards the access track, Langlee Road. Cumulative Developments: Neither Whitelee or Moorshield Wind Farms are visible from these properties. Magnitude of Change: The predicted magnitude of change arising from the Development would be small, due to the coniferous tree cover on Bennan Hill which would filter views of Turbines 1 & 2, and Turbine 3 would be partially visible to the south. Level of Effect: ***Minor - Moderate*** The nature of these effects would be long-term (reversible), indirect and adverse.
8 – Greenfield	Nearest proposed turbine: Turbine 3 – 2.01 km Description: This property is accessed by a private driveway from Eaglesham Road, within the plateau moorland. There are open views to the existing Whitelee Wind Farm from the access driveway to the property. Aerial photography reveals that the property is orientated to the north, with a garden area to the north, and tree cover to filter views to the south towards Whitelee Wind Farm and Ardoch and Over Enoch Wind Farms to the south east. The land surrounding the property is open, exposed rough grazing land Cumulative Developments: The Whitelee Wind Farm is the closest wind farm to the property and visible from the access track and from the rear of property at a distance of 0.7 km. Magnitude of Change: There is no predicted visibility of the Development from Greenfield property, due to the rising topography of Ballageich Hill which would screen views of the turbines to the north west. However, the blade tips of Turbine 3 would be visible from the driveway when exiting the property with negligible effects would arise. Level of Effect: ***Negligible***

Property	Description of Effect
	The nature of these effects would be long-term (reversible), indirect, cumulative and adverse.
9 – King's Well (Listed Building 12508, Category B)	Nearest proposed turbine: Turbine 2 – 2.15 km. This property is on the boundary of the 2 km radii, but has been included in the assessment due to potential views from the property, which is also a listed building. Description: This property is accessed by a driveway from Kingswell Road, within the plateau moorland. Aerial photography reveals that the property is orientated to the north west, with a garden area surrounding all sides of the property, including mature trees screening the garden to the east and south along Moor Road and Kingswell Road. Available views are limited to the driveway when entering / exiting the property. Cumulative Developments: Whitelee Wind Farm is largely screened by plantation woodland east of the property, but there are views of the blades along Moor Road where the plantation woodland has been cleared. Magnitude of Change: The predicted magnitude of change arising from the Development would be small, due to the partial screening provided by coniferous tree cover to the east of the property, which would screen the towers of the Turbines 2 and 3 with the hubs and blades visible above the trees. However, Turbine 1 would be visible within the plateau moorland. Oblique views of the wind turbines may be available from the side elevations during winter months when there are no leaves on the trees. Level of Effect: ***Moderate*** The nature of these effects would be long-term (reversible), indirect, cumulative and adverse. The property is a listed building. Whilst there are predicted moderate visual effects for the visitors / residents when entering and existing the property, there would be no effects on the setting of the listed building due to the extensive garden & perimeter planting, the property is at a lower elevation then the nearby roads, and is orientated to the north.

Whilst it is accepted that several properties would experience a large magnitude of change to a view or views, considering the proximity, grouping and composition of the Development, it is considered that the majority of these properties would not suffer unduly from negative visual effects such as visual over-dominance, over-bearance, or blocking of light, which collectively may affect the overall visual amenity, and associated living standards. However, the financially involved property 'Shieldhill' would be subject to effects that could be considered overbearing. Planning precedence indicates that financial involvement of this type means that the owners of a financially involved property may be expected to tolerate a higher magnitude of visual effect, given they stand to gain financially if the Development is constructed. This was confirmed and accepted by the Reporter for a previous appeal decision (PPA-220-2048) on the site.

9.2.2 Settlements

The appraisal of visual effects likely to be experienced from settlements includes consideration of residential areas, the public realm, and public open spaces within the settlements that would be frequented by people. The sensitivity of residential receptors within settlement is considered to be high, and also other receptors given the high proportion of recreational visitors in this location.

Those settlements within 5 km of the Development have been illustrated in Figure 1.6 (Annex B) and described and assessed in Table 1.8 below.

Table 1.8: Visual Effects on Settlements

Property	Description of Effect
Eaglesham	Nearest proposed turbine: Turbine 3 – 4.84 km Description: Eaglesham is a small village, and Conservation Area, on the edge of the Detailed Study Area. Most of the village lies outwith the ZTV for the Development, where there would be no available views of the Development as the land falls to the east, and any potential screening by the built environment of the village. However, there are potential views of blade tips of the Development from the western edge of the village. Cumulative Developments: Whitelee Wind Farm and Ardoch and Over Enoch Wind Farms are visible to the south and south west. Magnitude of Change: the local topography for Picketlaw Reservoir and pumping house screen views west from the edge of Eaglesham. The land rises as the B764 follows a route west, and tree cover screens the horizon and potential views of blade tips of the Development. Level of Effect: None

9.3 Visual Effects on Views from Core Paths & Regionally Promoted Routes & Whitelee Visitor Centre

There are a number of Core Paths in the local landscape, and local cycle routes within the Detailed Study Area (refer to Figure 1.12, Annex B).

The visual effects that would be experienced by the walkers, riders and cyclists using these routes are described below in Table 1.9. The appraisal of the potential effects on these routes has been assisted by the use ZTV maps during the site evaluation. The sensitivity of all these receptors is considered to be high.

Table 1.9: Visual Effects on Core Paths

Route	Description of Effect
Core Path ERC/D	Nearest proposed turbine: Turbine 3 – 0.75 km Description: The route of the Core Path follows an off road route ascending from Moor Road, across Ballageich Hill (plateau) and descends to Bennan Loch, from where it continues on a track along the reservoir, through South Moorhouse Farm, and on to Langlee and Mearns Road (near the A77). The Core Path is situated within the Plateau Moorland with Wind Farms LCT. At its closest point the Core Path passes within 1.09 km of the proposed turbines. The elevated route of the Core Path in its southern section on Ballageich affords panoramic views of the Glasgow & Clyde Valley conurbation to the Lomond Hills beyond to the north, east and south east and south across the plateau moorland and Whitelee Wind Farm and other wind farm sites beyond, and to the west and north there are views to the coast, and the Isle of Arran on a clear day. Cumulative Developments: Whitelee, Ardoch and Over Enoch, Middleton Wind Farms and individual farm turbines are all visible from the Core Path within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change arising from the Development would be large at Ballageich Hill (for a 1 km section of the Core Path). Whilst the Development would only occupy a small proportion of the 360 degree views from the Core Path in this location, the Development is closer to the Core Path than neighbouring wind farm development, with no land cover or screening from woodland at the elevated locations, clear and uninterrupted views would be available. When travelling in a northerly direction along this route from the cairn on Ballageich Hill, the turbines would be viewed obliquely, and then behind the viewer from Bennan Loch as the Core Path descends towards South Moorhouse Farm.

Route	Description of Effect
	When travelling south on the Core Path, ascending from Langlee, the Development would be visible at an elevated location on the horizon, and partially screened by plantation woodland. Once at Bennan Loch, there would be a clear view of all three turbines across the water (in a compact and balanced composition for a 1.5 km section of the Core Path). The Core Path ascends Ballageich Hill, with oblique views of the Development at a distance of 800 m at its closest point. Once the steep north western slope of Ballageich Hill has been climbed, then the turbines would be behind the viewer, and the route continues north to join Eaglesham Road. Level of Effect: ***Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
ERC/E	Nearest proposed turbine: Turbine 3 – 1.76 km Description: The route of the Core Path follows a combination of an off road and on road route ascending from Eaglesham, to East Moorhouse Farm and west towards South Moorhouse Farm, where it joins ERC/D Core Path. The Core Path is situated within the Plateau Moorland with Wind Farms LCT. At its closest point the Core Path passes within 1.76 km of the proposed turbines. Views from the eastern section of the Core Path to the affords panoramic views of the Glasgow & Clyde Valley conurbation to the Campsie Fells beyond to the north, east and south east and south across the plateau moorland and Whitelee Wind Farm and other wind farm sites beyond. As the route continues west, towards East Moorhouse Farm, there are small hills which enclose the views to the south, partially screening the Development, but the terrain opens out and there are clear and uninterrupted views of the Development across Lochcraig Reservoir and Bennan Loch. The Development would be visible at the head of Bennan Loch, as a simple, compact and balanced composition. Cumulative Developments: Whitelee and Middleton Wind Farms and individual farm turbines are all visible from the Core Path within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change arising from the Development would be large between East Moorhouse and Bennan Loch (for a 2 km section of the Core Path). Whilst the Development would only occupy a small proportion of the 360 degree views from the Core Path at locations along the route, the Development is closer to the core path than neighbouring wind farm development, with no land cover or screening from woodland at the elevated locations, clear and uninterrupted views would be available. When travelling in a westerly direction along this route the Development would be behind the viewer. Level of Effect: ***Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
ERC/5	Nearest Proposed Turbine: Turbine 3 – 0.92 km Description: The Core Path route commences at the entrance to the Whitelee Wind Farm Visitor Centre, and follows a route within the turbines. The Core Path is situated within the Plateau Moorland with Wind Farms LCT. It is also a promoted cycle route. Cumulative Developments: Whitelee and Middleton Wind Farms are visible from the Core Path within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change arising from the Development would be small for the majority of the Core Path route, then increasing to large at the junction of ERC/5 with Eaglesham Road. At its closest point the Core Path passes within 0.92 km of the proposed turbines. The Development would be

Route	Description of Effect
	visible in part, with hubs and blades visible over the small hill from Eaglesham Road at the entrance to the Whitelee Visitor Centre, and then the Development would be behind the viewer when travelling south on the path, towards Whitelee Wind Farm. When travelling along the Core Path within Whitelee Wind Farm the proposed turbines would be visible behind the existing turbines of Whitelee Wind Farm, and would not extend the view of wind turbines beyond the existing baseline. When travelling north, along the Core Path, leaving the Whitelee Wind Farm, and approaching Eaglesham Road, the Development would be visible on the horizon to the north west. Initially, from the car park of the Visitor Centre blade tips of the Development would be visible, increasing to three hubs and blades of the development above the small hill, and rising terrain to the west. Level of Effect: ***Minor to Moderate – Major (junction with Eaglesham Road)*** The nature of these effects would be long-term (reversible), cumulative, indirect and neutral (within the Whitelee Wind Farm).
ERC/6	Nearest Proposed Turbine: Turbine 3 – 1.95 km Description: The Core Path route follows a route within the turbines of Whitelee Wind Farm, leading off from EDC/5 in a westerly direction to Topfaulds Hill. The Core Path is situated within the Plateau Moorland with Wind Farms LCT. It is also a promoted cycle route. Cumulative Developments: Whitelee and Middleton Wind Farms are visible from the Core Path within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change arising from the Development would be small for the majority of the Core Path route. At its closest point the Core Path passes within 1.95 km of the proposed turbines. The Development would be visible in full, in the middle distance to the north west, behind the Whitelee Turbines, and in front of the Middleton Wind Farm 6.25 km distance from the Core Path. When travelling along the Core Path in both an east and west direction, within Whitelee Wind Farm, the proposed turbines would be visible behind the existing turbines of Whitelee Wind Farm, and would not extend the view of wind turbines beyond the existing baseline. Level of Effect: ***Minor to Moderate*** The nature of these effects would be long-term (reversible), cumulative, indirect and neutral (within the Whitelee Wind Farm).
E1 Eaglesham to Queen's Seat (Moor Road)	Nearest proposed turbine: Turbine 3 – 0.92 km Description: The route of the Core Path follows the B764 road / Eaglesham Road ascending from Eaglesham, to Queenseat Hill, and the entrance to the Whitelee Wind Farm Visitor Centre. The Core Path is situated within the Plateau Moorland with Wind Farms LCT. It is also a promoted cycle route, and local road linking Eaglesham and the M77 / A77 roads. At its closest point the Core Path passes within 0.92 km of the proposed turbines. There are panoramic views along the route from Eaglesham of the Glasgow & Clyde Valley conurbation to the Campsie Fells beyond to the north, east and south east and south across the plateau moorland and Whitelee Wind Farm and other wind farm sites beyond. As the route continues west there are small hills which enclose the views to the north, partially screening the Development, but the terrain opens out and there are clear and uninterrupted views of the Development at the entrance to Whitelee Wind Farm. The Development would be visible in part, with hubs and blades visible over the small hill as the road rises travelling west. Cumulative Developments: Whitelee and Middleton Wind Farms and individual farm turbines are all visible from the Core Path within the Detailed Study Area.

Route	Description of Effect
	Magnitude of Change: The predicted magnitude of change arising from the Development would be none to negligible for a large proportion of the Core Path between Eaglesham and Queenseat Hill (for a 4 km section of the Core Path) due to the undulating plateau and rising topography south of the road (Ballageich Hill), with views opening out only at the termination of the Core Path at the entrance of the Visitor Centre. The Development would only occupy a small proportion views from the Core Path at locations along the route, and at this location the magnitude of change would be large. When travelling in a westerly direction along this route the Development would be behind the viewer. Level of Effect: ***None to Major*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
Whitelee Wind Farm Visitor Centre	Nearest Proposed Turbine: Turbine 3 – 0.93 km Description: The Whitelee Wind Farm Visitor Centre is situated to the north of the Whitelee Wind Farm turbines, accessed from Eaglesham Road. It is a busy information centre, café and hub for cyclists and visitors using the Core Paths and locally promoted cycle routes within the wind farm. In this instance, the sensitivity of the recreational visitors to the Visitor Centre would be low, and are likely to be positively disposed to wind energy given their interest in visiting Whitelee Wind Farm visitor centre. Cumulative Developments: Whitelee Wind Farm and individual farm is visible from the Core Path within the detailed study area. Magnitude of Change: The predicted magnitude of change arising from the Development would be small from the views afforded from the Visitor Centre. At its closest point the proposed turbines are 0.93 km distance to the north west. The Development would be visible in full, with three hubs and blades of the turbines visible from the picnic area / decking to the south and west of the building, and also limited views from the car park area (where the building does not screen views). The siting of the Development extends the proportion of the view, from the visitor centre, which occupies turbines approximately 90 degrees to the north west. Level of Effect: ***Negligible - Minor*** The nature of these effects would be long-term (reversible), cumulative, indirect and neutral.

9.4 Visual Effects on Views from Transport Routes & Cycle Routes

This section considers the views from the main transport routes and the likely visual effects on receptors, visual experience whilst using the M77, A77 and B local road network within the Detailed Study Area. The views from these routes would be experienced transiently by road and the sensitivity of all these receptors is considered to be low - medium - high (low for motorway users where potential views are fleeting and travelling at speed, medium for users of the local road network, and high for recreational users). The key routes were driven in both directions to assess the potential effects on the routes and the appraisal has been assisted with the use of ZTV maps. Those routes outside the ZTV have not been appraised.

Table 1.10: Visual Effects on Transport Routes & Cycle Routes

Receptor	Description of Effect
M77	Nearest proposed turbine: Turbine 1 – 1.76 km. The sensitivity of visual receptors using the M77 road are considered to be low.

Receptor	Description of Effect
	Description: The M77 is a 32 mile motorway which links Glasgow to Kilmarnock. The M77 is situated within the Plateau Moorland with Wind Farms LCT within the detailed study area. At its closest point the M77 passes within 1.76 km of the proposed turbines. Cumulative Developments: Whitelee and Middleton Wind Farms and individual farm turbines are all visible from the M77 within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change arising from the Development would be medium to large from the M77 between Junction 5 when travelling south bound, and the section of the road near Floak Quarry, for a distance of 3.5 km. Whilst the Development would only occupy a small proportion of the open views from the M77 at locations along the route, the Development would be viewed obliquely when travelling at speed on the motorway, and in the context of the Whitelee and Middleton Wind Farms. The predicted magnitude of change when travelling north on the M77 would be medium, and anticipated for 4.5 km of the route from the A719 overbridge to near Floak Quarry. The Development would be viewed both directly ahead of the traveller on the M77 or obliquely at close distance. In both instances the turbines would be visible alongside the existing Whitelee Wind Farm. Level of Effect: ***Minor to Minor - moderate*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
A77	Nearest proposed turbine: Turbine 1 – 1.7 km. The sensitivity of visual receptors using the A77 road are considered to be medium and medium for cyclists along the cycle path. Description: The A77 road runs parallel with the M77 within the Detailed Study Area. The A77 is situated within the Plateau Moorland with Wind Farms LCT within the detailed study area. At its closest point the A77 passes within 1.7 km of the proposed turbines (refer to Viewpoint 3, Figure 1.22, Annex B). Cumulative Developments: Whitelee Wind Farm and individual farm turbines are all visible from the A77 within the detailed study area. Magnitude of Change: The predicted magnitude of change arising from the Development would be medium to large from the A77 when travelling east - west, for a distance of 3 km. Whilst the Development would only occupy a small proportion of the open views from the A77 at locations along the route, the Development would be viewed obliquely when travelling along the road, with the turbines visible at an elevated location on the southern horizon. The predicted magnitude of change when travelling west on the A77 would be small - medium, and anticipated for 2 km of the route from near Floak Quarry to Threap Knowe. The Development would be partially screened by conifer plantations on the rising land to the south of the A77, and they would viewed both obliquely at close distance. In both instances the turbines would be visible alongside the existing Whitelee Wind Farm. Level of Effect: ***Minor*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
B764 / Eaglesham Road	Nearest proposed turbine: Turbine 2 – 0.58 km. The sensitivity of visual receptors using the local road are considered to be medium and medium for cyclists along the cycle path. Description: The B764 crosses the moorland plateau moorland characterised by large numbers of wind turbines and extensive areas of coniferous plantations. Turbines at Whitelee Wind Farm are dominant within the panoramic views to the south and east

Receptor	Description of Effect
	and in close proximity to the road. Views of Middleton and Neilston Windfarms are also visible across the plateau, to the north west beyond the M77 corridor. The B764 is situated within the Plateau Moorland with Wind Farms LCT within the detailed study area. Cumulative Developments: Whitelee and Middleton Wind Farms and individual farm turbines are all visible from the B764 within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change when travelling east on the B764 would be medium, and anticipated for 1 km of the route from Soame Bridge to Queenseat Hill. The Development would introduce turbines within to the plateau moorland north of the B764, and they would be viewed both directly and obliquely at close distance. The predicted magnitude of change when travelling west would increase from zero (near Eaglesham) to medium and high from Queenseat Hill, for a distance of 2 km, along which the turbines would be visible obliquely and then behind the viewer when approaching Soame Bridge. Level of Effect: None ***- Moderate*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.
Kingswell Road	Nearest proposed turbine: Turbine 2 – 0.84 km. The sensitivity of visual receptors using the local road are considered to be medium and medium for cyclists along the cycle route. Description: The local road links the A77 and Moor Road, and crosses the moorland plateau moorland characterised by large numbers of wind turbines and extensive areas of coniferous plantations. Turbines at Whitelee Wind Farm are dominant within the open views to the south and east as Kingswell Road travels south and south west. Views of Middleton and Neilston Windfarms are also visible across the plateau, on the horizon to the north west beyond the M77 corridor. The B764 is situated within the Plateau Moorland with Wind Farms LCT within the Detailed Study Area. Cumulative Developments: Whitelee Wind Farm and individual farm turbines are all visible from Kingswell Road within the Detailed Study Area. Magnitude of Change: The predicted magnitude of change when travelling south on Kingswell Road would be high, and anticipated for 2 km of the route from Threap Knowe to Drumboy Hill near Shieldhill property, after which conifer plantations would screen views and the Development would be behind the viewer. The magnitude of change when travelling north on Kingswell Road would be high, for a short 0.5 km section of the route where the Development would be visible, 0.85 km distance and viewed obliquely from the road. Level of Effect: ***Moderate.*** The nature of these effects would be long-term (reversible), cumulative, indirect and adverse.

10 CUMULATIVE EFFECTS

The predicted cumulative effects of the Development and existing wind farms are embedded within the landscape and visual appraisal as a whole. There is no separate cumulative impact appraisal.

The consolidation of wind farms within an existing wind farm landscape, in this instance in the Plateau Moorland, provides opportunity to reduce pressure elsewhere, and meet renewable energy targets.

The main cumulative effects are associated with the relationship of the Development with Whitelee and Middleton wind farms, as the closest existing wind farm developments to the Development. The appraisal has concluded that the Development would contribute towards

cumulative landscape and visual effects, however, these would not exceed the capacity of the landscape to accommodate three additional turbines in this location.

In the majority of viewpoints there is inter-visibility between the Development and Whitelee Wind Farm due to the proximity of the Development on the western side of the B764 road. Whilst the Development is visually contained to the west and east, wider views of the Development across the Plateau Moorland with Wind Farms reveal the Development to be viewed in an open, simple, Moorland Wind Farm landscape.

In summary, however, potential cumulative effects are limited within 2 km radius within the Detailed Study Area where the visual influence of the wind farms is restricted by the local tree / hedgerow cover along the roadsides and local topography, which reduces the extent the wind farms are viewed cumulatively, either statically from one location, or sequentially along the local road and Core Path networks.

11 SUMMARY & CONCLUSION

11.1 Summary of Predicted Landscape Effects

The Development would comprise of three wind turbines. Although long term in nature, the Development would result in ***minor-moderate*** and ***moderate***, adverse, direct and indirect, and reversible effects on landscape character.

The Development is situated within an area of Plateau Moorland with Wind Farms LCT. As such the siting of the Development within this landscape is rational, set with a backdrop of Whitelee Wind Farm, which helps 'absorb' the proposed turbines within the 'Plateau Moorland with Wind Turbines' landscape. The Development is located within a sheltered, but expansive, working rural landscape.

The Development is also situated within the Bennan (3a) LLCA, a discrete landscape area, with an identified capacity for wind turbines. The ERCWES identifies opportunities for the siting of wind turbines within the LLCA where the shared landscape characteristics of the plateau moorland provide opportunity for the landscape to accommodate the Development.

Within the Study Area the landscape is experienced from the local road network, scattered residential properties, and a small number of Core Paths / cycle routes from which panoramic views are afforded across the plateau and to the Glasgow & Clyde Valley conurbation to the north and east, and to the Coast and Arran beyond to the west.

Therefore, it is considered that the combination of the Development's setting within the context of the Whitelee Wind Farm, the characteristics of the plateau moorland with wind farms, and medium to large scale of the receiving landscape, the landscape would have the capacity to accommodate the Development.

11.2 Summary of Predicted Visual Effects

The visual appraisal indicates that views of the Development, from the surrounding areas, would predominantly be ***Moderate*** *to* ***Moderate - Major***. This is due to:

- the location of the Development, which forms a continuation of wind turbines within the Plateau Moorland with Wind Farms LCT, within an area which is characterised by wind farms;
- The location takes advantage of the gentle rolling plateau landform. The siting and design of the Development allows for visual effects to be concentrated within a 5 km radius, within this lightly settled landscape;
- There would be ***Moderate – Major and Major*** visual effects from the Development on viewpoints in proximity to the Development with clear and open views of the turbines including from Highfield, Threap Knowe, and the Greenfield Hill Mast;

- There would be ***Negligible, Minor - Moderate, and Major*** visual effects from the Development for those recreational receptors using the Core Paths within 5 km of the Development;
- There would be a range of visual effects on those residential properties within 2 km of the Development, ranging from ***Negligible, Minor - Moderate, and Major***. This variation is as a result of distance, localised screening by plantation woodland and local topography within the local landscape; and
- There would be a range of visual effects on the road users and cyclists within the surrounding landscape of the Development, ranging from ***Negligible*** *to* ***Minor - Moderate***. This variation is as a result of localised screening by plantation woodland and local topography within the local landscape.

11.3 Conclusion

The addition of the Development would not exceed the cumulative capacity of the Plateau Moorland with Wind Farms landscape, nor would it become the dominant characteristic of the landscape within the Study Area. This is largely due to the compact group of three turbines, relative to the scale and character of the receiving landscape, and the existing cumulative baseline of wind farms within the landscape.

The Development would not form a direct extension to Whitelee Wind Farm because it is located 1.25 km north, but it would reflect the established landscape character and the turbines would form a clustered, closely grouped, yet reasonably balanced, simple composition, set within an existing landscape with wind farms.

ANNEX A: METHODOLOGY

1 LVA METHODOLOGY

1.1 Guidance

The appraisal methodology follows the 'Guidelines for Landscape and Visual Impact Assessment' Third Edition (GLVIA3)1. As recommended by GLVIA3, this is not a generic LVA methodology, but has been tailored to be proportionate to the nature and location of the proposed Scheme. The methodology also considers the following guidance:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA3)[2];
- The Landscape Institute (2013), GLVIA3 Statement of Clarification 1/13[3];
- Siting and Designing Windfarms in the Landscape, SNH[4];
- Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments, NatureScot[5];
- Scottish Government, Onshore Wind Turbines: planning advice[6];
- Visual Representation of Wind Farms, Version 2.2, SNH[7]; and
- Visual Representation of Development Proposals, Technical Guidance Note 2019, The Landscape Institute[8].

This appraisal does not constitute a Landscape and Visual Impact Assessment (LVIA) as the proposed Development does not require an EIA to be provided.

The appraisal methodology draws upon the established guidance in the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment (GLVIA), 3rd edition 2013.

The following extract, taken from the GLVIA Statement of Clarification (Jan 2013), gives guidance on the terminology to be used in non-EIA Landscape and Visual Impact Appraisals, such as this LVA:

'*In carrying out appraisals, the same principles and process as LVIA may be applied but, in so doing, it is not required to establish whether the effects arising are or are not significant given that the exercise is not being undertaken for EIA purposes. The reason is that should a landscape professional apply LVIA principles and processes in carrying out an appraisal and then go on to determine that certain effects would be likely be significant, given the term 'significant' is enshrined in EIA Regulations, such a judgement could trigger the requirement for a formal EIA. The emphasis on likely 'significant effects' in formal LVIA stresses the need for an approach that is proportional to the scale of the project that is being assessed and the nature of its likely effects. The same principle - focussing on a*

[1] Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Routledge, London.

[2] Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment (GLVIA3), 3rd Edition, Routledge, London [Accessed 13/02/2020]

[3] https://www.landscapeinstitute.org/technical-resource/glvia3-clarifications/ [accessed 13/02/2020]

[4] Scottish Natural Heritage (August, 2017). Siting And Designing Windfarms In The Landscape, Version 3a [Accessed 13/02/2020]

[5] NatureScot (2021). Guidance: Assessing The Cumulative Impact Of Onshore Wind Energy Developments [Accessed 24/04/2023]

[6] Scottish Government (May, 2014). Onshore Wind Turbines: Planning Advice https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/ [Accessed 13/02/2020]

[7] Scottish Natural Heritage (February, 2017). Visual Representation Of Wind Farms, Version 2.2 [Accessed 13/02/2020]

[8] The Landscape Institute (17 September, 2019) Visual Representation Of Development Proposals, Technical Guidance Note 06/19 [Accessed 13/02/2020]

proportional approach – also applies to appraisals of landscape and visual impacts outside the formal requirements of EIA.'

In this LVA, effects are appraised to be either 'minor,' 'moderate', 'major', or 'none'. The level of effect is appraised through a combination of two considerations - the sensitivity of the landscape element, landscape character receptor or visual receptor, and the magnitude of change that would result from the proposed Development. This evaluation is carried out for each of the receptors described within the baseline section of the report.

1.2 Introduction

The level of landscape and visual effect is determined through consideration of the 'sensitivity' and 'susceptibility' of the landscape or visual receptor to the proposed wind turbines and the 'magnitude of change' that would be brought about by the proposed wind turbines were they to be constructed.

The time period for the appraisal covers the construction of the proposed wind turbines and associated infrastructure, to completion of the works and the operational phase.

The appraisal has involved a process of iterative design and re-appraisal of any remaining, residual effects that could not otherwise be mitigated or 'designed out'. The type of effect is also considered and may be direct or indirect; temporary or permanent (reversible); cumulative; and positive, neutral or negative. The landscape and visual appraisal unavoidably involves a combination of both quantitative and qualitative appraisal and wherever possible a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

1.3 Terminology

A description of the terms used in this LVA are provided below.

1.3.1 Sensitivity of Receptor

This is established by considering the value of the receptor and its susceptibility to change. Both these two aspects inform the sensitivity of landscape and visual receptors as set out in Sections 1.5.1 and 1.6.1 below. For the purposes of this LVA, receptor sensitivity is classified on a four-point scale of: negligible, low, medium, and high (refer to Tables A1.4 and A1.11).

1.3.2 Resource / Receptor Value

For the landscape resource this is related to the value that is attached to different landscapes by society. A landscape may be valued by different people for different reasons. For visual receptors this relates to the recognition attached to a particular view (for example in relation to heritage assets or through planning designations) and indicators of value attached to views by visitors (for example through appearances in guidebooks or on tourist maps and the provision of facilities such as car parking and interpretation). For the purposes of the LVA a receptor value is classified on a four-point scale of: negligible, low, medium, and high (refer to Tables A1.1, A1.2 and A1.9).

1.3.3 Susceptibility to Change

For landscape receptors this means the ability to accommodate a proposed development without undue consequences for the maintenance of the baseline situation and/or achievement of landscape planning policies and strategies

For visual receptors this is a product of the occupation or activity of people experiencing the view and the extent to which their attention or interest may therefore be focused on the views and visual amenity they experience.

For the purposes of this LVA, susceptibility to change is classified on a three-point scale of: low, medium, and high (refer to Tables A1.3 and A1.10).

1.3.4 Magnitude of Change

This is gauged by appraising the type and amount of change predicted to occur in relation to the landscape or visual receptor. Factors influencing the magnitude of change include: size, scale and nature of change; geographical extent; and duration and reversibility of effect as set out in Sections 1.5.2 and 1.6.2 and associated tables.

For the purposes of the LVA, magnitude of change is classified on a four-point scale of: negligible, small, medium, and large (refer to Table A1.8 and A1.14)

Where there is no change to the receptor, or indeed no view of the wind turbines, the magnitude of change is assessed as No Change / None which would result in No Effects.

1.3.5 Level of Effect

The level of landscape and visual effect is gauged by considering the magnitude of change along with the sensitivity of the receptor using professional judgement. For the purposes of the LVA, level of effect is classified on a six-point scale of: negligible, minor, minor to moderate, moderate, moderate to major and major (Tables A1.15 and A1.16).

In line with best practice guidance set out in GLVIA3, in addition to assessing level, effects are classified as: beneficial, adverse or neutral, as well as direct and indirect. An effect is understood to be neutral when the predicted residual change would, on balance, result in neither an improvement, nor a deterioration of the landscape and visual resource compared with the existing situation.

1.4 Baseline

The landscape and visual baseline of the appraisal was established by undertaking a detailed desk study, fieldwork, and analysis of findings to create a detailed understanding of the existing landscape and visual context of both the site and surrounding landscape within the study area.

Establishing the landscape baseline included gathering data on the landscape character and how this varies through the study area; together with its geographic extent; and how it is experienced and valued.

The visual baseline establishes the areas from where the new components of the development can be seen, who can see them, the places where those who see them would be affected and the nature of views and visual amenity.

Together the established baseline provides an understanding of the components of the landscape and visual resource that may be affected by the development, which includes the identification of key receptors and viewpoints which represent such receptors. The baseline is of sufficient detail to enable a well-informed assessment of the likely landscape & visual effects on the baseline conditions of the Scheme.

The desk-based appraisal has involved the following key activities:

- Familiarisation with the landscape and visual resources of the area within which the development would be located;
- Identification of landscape and visual resources likely to be significantly affected by the development;
- Preparation of Zone of Theoretical Visibility (ZTV) maps;
- Identification of the location of viewpoints, informed by the ZTV, that were used to inform the assessment of effects of both landscape and visual resources; and
- Identification of suitable study areas for the LVA.

The desk-based appraisal began with a review of legislation, policy and guidance including published landscape character assessments of the area and its wider context. This developed an understanding of the baseline environment within which the 40km radius study area, and 5 km radius detailed study area is located and has formed the basis of LVA fieldwork. For individual properties, a Residential Visual Amenity Assessment (RVAA) has been carried out within a 2 km Study Area, in accordance with Landscape Institute (LI) guidance[9].

Viewpoints identified through consultation and during desk studies were ground-truthed through fieldwork and their positions fixed prior to photography being undertaken. Landscape character types (LCTs) were reviewed during fieldwork and the descriptions contained in the published landscape character assessment were augmented where necessary. Landscape and visual receptors were also assessed to ensure they are accurately represented through desk-based appraisal.

1.5 Appraisal of Landscape Effects

In accordance with GLVIA3 the appraisal of landscape and visual effects are separate but linked procedures; the landscape is appraised as an environmental resource in its own right, whereas visual effects are appraised on views and visual amenity experienced by people.

Both landscape and visual effects have been appraised at construction stage and during operation of the wind turbines.

1.5.1 Sensitivity

As noted above, the sensitivity of landscape receptors is assessed through consideration of their value and susceptibility to change. The process for determining landscape sensitivity is set out below.

1.5.1.1 Landscape Value

For landscape receptors, value concerns the importance of the landscape resource as evidenced by the presence of landscape designations and professional judgement. Susceptibility is concerned with the landscapes ability to absorb change brought about by the development.

Table A1.1 illustrates how the value has been determined.

Table A1.1: Landscape Value Criteria

Value	Landscape Designations	Description
International / High	World Heritage Site	Internationally valued and designated landscapes.
National / High	National Park; AONBs; Registered Parks and Gardens of Special Historic Interest; Ancient Woodland	Nationally valued and designated landscapes.
Regional / Medium	Green Belt; Conservation Areas; Areas of High Landscape Value, Tree Preservation Orders (TPO)	Local authority landscape designations
Local / Low	Undesignated Landscape	Landscapes which are not designated nationally or locally.

[9] Landscape Institute (2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment.

The European Landscape Convention promotes the need to take account of all landscapes, with less emphasis on the special and more recognition that ordinary landscapes, such as community landscapes also have their own value. The criteria used to appraise undesignated (community value) landscapes are set out using Box 5.1 in GLVIA3[10], as per Table A1.2.

Table A1.2: Factors for Appraising the Value of Undesignated Landscapes

Factor	Criteria
Landscape Quality (condition)	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
Scenic Quality	The term used to describe landscapes that appeal primarily to the senses (primarily but not wholly the visual senses).
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type.
Representative ness	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
Conservation interests	The presence of features of wildlife, earth science or archaeological or historical and cultural interest can add to the value of the landscape as well as having value in their own right.
Recreation value	Evidence that the landscape is valued for recreational activity where experience of the landscape is important.
Perceptual aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquility.
Associations	Some landscapes are associated with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area.

1.5.1.2 Susceptibility of the Landscape Receptors to Change

This means the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies[11].

Susceptibility of landscape receptors to change has been assessed using the criteria set out in Table A1.3.

Table A1.3: Landscape Receptor Susceptibility to Change

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the development because the key characteristics of the landscape have no or very limited ability to accommodate it without undue adverse effects taking account of the existing character and quality of the landscape.

[10] Landscape Institute (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Box 5.1, Page 84.
[11] Landscape Institute (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Paragraph 5.40, Page 88.

Medium	The landscape receptor is moderately susceptible to the development because the relevant characteristics of the landscape have some ability to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the development because the relevant characteristics of the landscape are generally able to accommodate it without undue adverse effects, taking account of the existing character and quality of the landscape.

1.5.1.3 Landscape Sensitivity

Table A1.4 sets out the sensitivity rating and criteria to be used in the LVA, which results from a combination of value and susceptibility.

As has been noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to change.

Table A1.4: Landscape sensitivity criteria

Landscape sensitivity criteria		**Value of Receptor**		
		International/ National	**Regional**	**Local**
Susceptibility to change	**High**	High	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Medium or Low	Low
	Negligible	Low	Negligible	Negligible

1.5.2 Magnitude of Landscape Effects

The determination of the magnitude of landscape and visual effects combines an appraisal of the size or scale of change likely to be experienced as a result of each effect[12], the geographical extent of the area likely to be influenced and the duration and reversibility of effects.

1.5.2.1 Size or Scale

Judgements are needed about the size or scale of change in the landscape that is likely to be experienced as a result of each effect. GLIVIA3 states that 'judgements should, for example, take account of:

- The extent of the existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape – in some cases this may be quantified;
- The degree to which aesthetic and perceptual aspects of the landscape are altered either for example, removal of existing components of the landscape or by addition of new ones; and

[12] Guidelines for Landscape and Visual Impact Assessment (page 90)

- Whether the effect changes the key characteristics of the landscape, which are critical to its distinctive character.

Table A1.5 Magnitude of Landscape Change: Size/Scale of Change

Category	Description
Large	A large extent of existing landscape elements would be lost / adjusted, the proportion that this represents within the landscape is considerable and the resultant change to the landscape character resulting from such a loss is large. Large scale alteration of the aesthetic and perceptual aspects of the landscape such as the removal of existing components of the landscape or by addition of new ones – for example, removal of hedges may change a small scale, intimate landscape into a large-scale, open one, or introduction of new buildings or tall structures may alter open skylines. The effect changes the key characteristics of the landscape & landscape, which are critical to its distinctive character.
Medium	A medium extent of existing landscape elements would be lost / adjusted, the proportion that this represents within the landscape is medium and the resultant change to the landscape character resulting from such a loss is medium. Medium scale alteration of the aesthetic and perceptual aspects of the landscape such as the, removal of existing components of the landscape or by addition of new ones. The effect changes some of the key characteristics of the landscape & landscape, which are critical to its distinctive character.
Small	A small extent of existing landscape elements would be lost / adjusted, the proportion that this represents within the landscape is low and the resultant change to the landscape character resulting from such a loss is low. Small scale alteration of the aesthetic and perceptual aspects of the landscape such as the, removal of existing components of the landscape or by addition of new ones. The effect changes a small number of the key characteristics of the landscape & landscape, which are critical to its distinctive character.
Negligible	A barely perceptible extent of landscape features and elements of importance to the character of the baseline are lost / adjusted. There is a barely discernible change to aesthetic and / or perceptual attributes of landscape & landscape character and such changes occurs across a very limited geographical area and / or proportion of the landscape receptor. The effect changes a barely discernible number of the key characteristics of the landscape, which are critical to its distinctive character.
No Change / None	The proposals would not cause any change to the landscape & landscape character/ elements/features/characteristics.

1.5.2.2 Geographical Extent

The geographical area over which the landscape effects would be felt is also considered. This is dependent upon the nature of the proposal and the scale of effects upon the receiving landscape / landscape; however, in general effects may have an influence at the following scales:

- At the site level, within the Wind turbines site itself;
- At the level of the immediate setting of the site;

- At the scale of the landscape type or character area within which the proposal lies; or
- On a larger scale, influencing several landscape types or character areas.

Table A1.6 Magnitude of Landscape Change: Geographical Extent

Category	Description
Large	The change would affect all of the landscape receptors being assessed, as the development would occupy a large geographical extent, e.g., the change would be on a large scale, influencing several landscape types or character areas.
Medium	The change would affect a medium extent of the landscape receptors being assessed, as the development would occupy a moderate geographical extent, e.g., at the scale of the landscape type or character area within which the proposal lies.
Small	The change would affect a small part of the landscape receptors being assessed, as the development would occupy a small geographical extent, e.g., at the level of the immediate setting of the site.
Negligible	The change would affect only a negligible part of the landscape receptors being assessed, as the development would occupy a limited geographical extent, e.g., the site level, within the development site itself.
No Change	The proposals would not affect any of the landscape receptors being assessed

1.5.2.3 Duration and Reversibility of the Landscape Effects

Duration and Reversibility are separate but linked considerations.

Duration can usually be simply judged on a scale such as:

- Short-term: 0-5 years;
- Medium-term: 5-10 years; and
- Long-term: 10-40 years.

For the purposes of this appraisal this Scheme has been appraised as long term.

Reversibility is a judgement about whether or not a development can be removed, and once removed can the landscape / landscape be fully restored. The examples in Table A1.7 indicate the type of land use and the respective appraisal of reversibility defined in GLVIA3. Tables A1.5 to A1.8 set out the criteria used to appraise the magnitude of landscape effects. Not all aspects of a criterion need to be met for an evaluation to be given.

Table A1.7 Magnitude of Landscape Change: Reversibility

Category	Description
Permanent	Permanent, is irreversible change to the landscape, for example housing development, as it not possible to remove the Wind turbines and restore the land to the original state.
Partially Reversible	Partially Reversible, change to the landscape, where the landscape can be restored to something similar to the landscape that was removed. For example, mineral developments, as it is possible to restore the land to something similar to the original state, but not the same state.
Reversible	Reversible, change to the landscape where the landscape can be fully restored. For example, a marine fish farm development, as it is possible to wholly remove the remove the Wind turbines and to restore the landscape to the original state. This also includes construction activities which are of temporary nature.

1.5.2.4 Overall Magnitude of Landscape Change

The overall magnitude combines size and scale, geographical extent, duration and reversibility as set out in Table A1.8.

Table A1.8: The Appraisal of Overall Magnitude of Change

Category	Description
Large	A large extent of existing landscape elements would be lost, the proportion that this represents within the landscape is considerable and the resultant change to the landscape character resulting from such a loss is large. The effect changes the key characteristics of the landscape, which are critical to its distinctive character. Large scale alteration of the aesthetic and perceptual aspects of the landscape and becomes a key additional aspect. The change would affect all of the landscape receptors been appraised as the development would occupy a large geographical extent. The effects are either of a long duration, permanent, or irreversible /reversible change to the landscape.
Medium	A medium extent of existing landscape elements would be lost, the proportion that this represents within the landscape is medium and the resultant change to the landscape character resulting from such a loss is medium. The effect changes some of the key characteristics of the landscape, which are critical to its distinctive character. Medium scale alteration of the aesthetic and perceptual aspects of the landscape. The change would affect a medium extent of the landscape receptors been appraised as the development would occupy a moderate geographical extent. Partially Reversible, change to the landscape, where the landscape can be restored to something similar to the landscape that was removed. The effects are either of a long / or medium duration, permanent, or irreversible /reversible change to the landscape.
Small	A small extent of existing landscape elements would be lost, the proportion that this represents within the landscape is low and the resultant change to the landscape character resulting from such a loss is low. The effect changes a small number of the key characteristics of the landscape, which are critical to its distinctive character. Small scale alteration of the aesthetic and perceptual aspects of the landscape such as the, removal of existing components of the landscape or by addition of new ones. The change would affect a small part of the landscape receptors been appraised as the development would occupy a small geographical extent. The effects are either of a Medium / or short duration and reversible change to the landscape.
Negligible	A barely perceptible extent of landscape features and elements of importance to the character of the baseline are lost. There is a barely discernible change to aesthetic and / or perceptual attributes of landscape character and such changes occurs across a very limited geographical area and / or proportion of the landscape receptor. The change would affect only a negligible part of the landscape / landscape receptors been appraied as the development would occupy. The effects are of short duration and reversible.

1.6 Appraisal of Visual Effects

GLVIA3 defines the assessment of visual effects as:

" …the effects of change and development on the views available to people and their visual amenity. The concern here is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views as a result of the change or loss of existing elements of the landscape and/or the introduction of new elements".

Visual receptors are defined in GLVIA3 as:

"…people within the area who would be affected by the changes in views and visual amenity – usually referred to as 'visual receptors'. They may include people living in the area, people who work there, people passing through on road, rail or other forms of transport, people visiting promoted landscapes or attractions, and people engaged in recreation of different types".

The viewpoints themselves are not visual receptors.

People have different responses to views which are dependent upon context such as the:

- Location;
- Time of day;
- Season; and
- Degree of exposure to views.

Responses to views are also dependent upon the purpose of people being in a particular place such as:

- Recreation;
- Residence;
- Employment; and
- Passing through on roads, rail or other forms of transport.

As people move through the landscape, certain activities or locations may be specifically associated with the experience and enjoyment of the landscape, such as:

- The use of paths such as core paths, footpaths, bridleways, byways open to all traffic (BOATs) and National Trails;
- National or local cycle routes; and
- Tourist or scenic routes, and associated viewpoints on land or water.

1.6.1 Sensitivity of Visual Receptors

Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, should be appraised in terms of both the value attached to particular views and to their susceptibility to change in views and visual amenity.

1.6.1.1 Value of Views

The value attached to views should be made on judgements based on the following:

- Recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and
- Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature or art.

The criteria used to assess the value of views are summarised in Table A1.9.

Table A1.9 Value Attached to Views

Value	Criteria
High	Views from and within landscapes / viewpoints of national importance, highly popular visitor attractions where the view forms an important part of the experience, or heritage assets, or through planning designations such as conservation areas, listed buildings, Gardens & Designed Landscapes / Registered Parks & Gardens or with important cultural associations, or where the view is deemed by the appraiser to be of a high value.
Medium	Views from landscapes / viewpoints of regional/district importance, or visitor attractions at regional or local levels where the view forms part of the experience, or local planning designations, or with local cultural associations, or where the view is deemed by the appraiser to be of a medium value.
Low	Views from landscapes / viewpoints with no designations, and not particularly popular as a viewpoint, with minimal or no cultural associations, or where the view is deemed by the appraiser to be of a low small value.

1.6.1.2 Susceptibility of Visual Receptors to Change

The susceptibility of visual receptors to changes in views depends upon:

- "The occupation or activity of people experiencing the view at particular locations; and
- The extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations." [13]

The criteria used to assess the susceptibility of a visual receptor are summarised in Table A1.10.

Table A1.10 Visual Receptor Susceptibility to Change

Susceptibility	Type of Receptor
High	Residents at home; People whether residents or visitors, who are engaged in outdoor recreation, including the use of public rights of way, whose attention or interest is likely to be focused on the landscape and on particular views; Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience; Communities where views contribute to the landscape setting enjoyed by residents in the area; and Travellers on road, rail or other transport routes along scenic routes, where the appreciation of the view contributes to the enjoyment and quality of the journey.
Medium	Travellers on road, rail or other transport routes. Users of public rights of way where the view is of moderate interest.

[13] ibid. 1. Paragraph 6.32

Susceptibility	Type of Receptor
Low	People engaged in, outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape; People at their place of work, whose attention may be focussed on their work or activity, not on their surroundings; and where the setting is not important to the quality of working life. Road users, where the view is fleeting and incidental to the journey.

1.6.1.3 Sensitivity of Visual Receptors

The sensitivity of visual receptors is defined in terms of the relationship between the value of views and the susceptibility of the different viewers to the proposed change. Table 1.11 summarises the nature of the relationship but it is not formulaic and only indicates general categories of sensitivity. Professional judgements are made on the merit of the view based on the visual receptor, with Table A1.11 serving as a guide.

Table A1.11 Visual sensitivity criteria

Visual sensitivity criteria		Value of Receptor		
		High	**Medium**	**Low**
Susceptibility to change	**High**	High	Medium	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low
	Negligible	Low	Negligible	Negligible

1.6.2 Magnitude of Visual Change

The magnitude of change to visual receptors is assessed in terms of the following:

- The 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;
- The 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; and
- The nature of the view of the proposed development, in terms of the relative amount of time over which it would be experienced and whether views would be full, partial or glimpses.

Tables A1.12 to A1.14 set out the criteria used to assess the magnitude of visual change. Not all aspects of a criterion need to be met for an evaluation to be given.

1.6.2.1 *Size or Scale*

Table A1.12 Magnitude of Visual Change: Size /Scale

Criteria	Category
Large	The proposals would cause a complete or very large change in the view, resulting from the loss of important features in or the addition of significant new ones, to the extent that this would substantially alter the composition of the view and the visual amenity it offers. Views are often full or sequential.
Medium	The proposals would cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small	The proposals would cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible	The proposals would cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposals would cause no change to the existing view.

1.6.2.2 *Geographical Extent*

The geographical extent of the visual change identified at viewpoints is assessed by reference to a combination of the ZTV and field work. The following factors are considered:

The geographical extent of a visual effect reflects:

- The angle of view in relation to the main activity of the receptor;
- The distance of the viewpoint from the Wind turbines; and
- The extent of the area over which the changes would be visible.

Table A1.13 Magnitude of Visual change: Geographical Extent

Criteria	Description
Large	The angle of view in relation to the main activity of the receptor is wide; The distance of the viewpoint from the development is close; and The extent of the area over which the changes would be visible is large.
Medium	The angle of view in relation to the main activity of the receptor is moderate; The distance of the viewpoint from the development is moderate; and The extent of the area over which the changes would be visible is moderate.

Small	The angle of view in relation to the main activity of the receptor is small; The distance of the viewpoint from the development is far; and The extent of the area over which the changes would be visible is small.
Negligible	The angle of view in relation to the main activity of the receptor is negligible; The distance of the viewpoint from the development is distant; and The extent of the area over which the changes would be visible is barely perceptible.
No Change / None	There are no changes to the existing view.

1.6.2.3 Duration and Reversibility of Visual Change

The following terminology, which considers whether views would be permanent and irreversible or temporary and reversible, is used to describe the duration of the visual change at representative viewpoints:

- Short-term: 0-5 years;
- Medium-term: 5-10 years; and
- Long-term: 10 to 40 years.

For the purposes of this appraisal the wind turbines has been appraised as long term.

Reversibility is a judgement about whether or not a development can be removed, and once removed can the view be fully restored.

1.6.2.4 Overall Magnitude of Visual Change

The three factors that contribute to the appraisal of the magnitude of visual change are combined as shown in Table A1.14.

Table A1.14 Appraisal of Magnitude of Visual Change

Magnitude evaluation	**Description of criterion**
Large	The proposals would cause a complete or very large change in the view, resulting from the loss of important features in or the addition of significant new ones, to the extent that this would substantially alter the composition of the view and the visual amenity it offers. Views are often full or sequential. The angle of view in relation to the main activity of the receptor is wide. The distance of the viewpoint from the development is close. The extent of the area over which the changes would be visible is large.
Medium	The proposals would cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent. The angle of view in relation to the main activity of the receptor is moderate. The distance of the viewpoint from the development is moderate The extent of the area over which the changes would be visible is moderate.

Magnitude evaluation	Description of criterion
Small	The proposals would cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would partially alter the composition of the view and the visual amenity it offers. Views may be partial only. The angle of view in relation to the main activity of the receptor is slight. The distance of the viewpoint from the development is slight. The extent of the area over which the changes would be visible is slight.
Negligible	The proposals would cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this would barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only. The angle of view in relation to the main activity of the receptor is negligible. The distance of the viewpoint from the development is distant. The extent of the area over which the changes would be visible is barely perceptible.
No Change / None	There are no changes to the existing view.

1.7 Nature of Effect

The nature of an effect is also appraised. This is dependent on a number of criteria which vary between effects upon the landscape/landscape and effects on visual amenity. Effects are classified as beneficial, neutral or adverse according to the following definitions:

- Beneficial effects contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, positive attributes. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components;
- Neutral effects occur where the development neither contributes to nor detracts from the landscape and visual resource or where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation; and
- Adverse effects are those that detract from or weaken the landscape and visual resource through the introduction of elements that contrast in a detrimental way with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its positive characterisation.

The LVA describes the overall effects on receptors and explains the justification for each assessment. For each effect, a conclusion has been drawn on whether the effect is beneficial, neutral or adverse.

1.8 Level of Effect and Criteria

The level of landscape and visual effect has been appraised based on the sensitivity of the affected resource / receptor, and the magnitude of change caused by the proposed Wind turbines, as set out for each above in the preceding tables.

The combined sensitivity and magnitude used to determine the level of effect is summarised within Table A1.15 below. Note that effects can be either positive or negative, and in some cases neutral (neither positive, nor negative).

Table A1.15 - Matrix for Determining Level of Effect

		Sensitivity (value / importance)			
		High	**Medium**	**Low**	**Negligible**
Magnitude of change	**Large**	Major	Moderate – Major	Minor – Moderate	Negligible
	Medium	Moderate – Major	Moderate	Minor	Negligible
	Small	Minor – Moderate	Minor	Negligible – Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

It should be noted that the above matrix is intended as a framework for appraisal only and that the level of effect will vary depending on the circumstances, the type and scale of development proposed, the baseline context and other factors. The gradations of magnitude of change and level of effect used in the appraisal represent a continuum; the appraiser has used professional judgement when gauging the level of effect.

Table A1.16 provides a more detailed summary of the categories of effect.

Table A1.16- Categories of Landscape and Visual Effect

Level of Effect	Description of Landscape Effect	Description of Visual Effect
Major	Considerable change over an extensive area of a highly sensitive landscape, fundamentally affecting the key characteristics and the overall impression of its character.	The development would become a prominent feature and would result in a very noticeable change to an existing highly sensitive and well composed view.
Moderate	Small or noticeable change to a highly sensitive landscape or more intensive change to a landscape of medium or low sensitivity, affecting some key characteristics and the overall impression of its character.	The development would introduce some enhancing or detracting features to an existing highly sensitive and well composed view, or would be prominent within a less well composed and less sensitivity view, resulting in a noticeable improvement or deterioration of the existing view.
Minor	Small change to a limited area of landscape of high or medium sensitivity or a more widespread area of a less sensitive landscape, affecting few characteristics without altering the overall impression of its character.	Where the proposed development would form a perceptible but not enhancing or detracting feature within a view of high or medium sensitivity or would be a more prominent feature within a poorly composed view of low sensitivity, resulting in a small improvement or deterioration of the existing view.
Negligible	No discernible improvement or deterioration to the existing landscape character.	No discernible improvement or deterioration in the existing view.
No Effect	The development would not affect the landscape receptor.	The development would not affect the view

Major	Considerable change over an extensive area of a highly sensitive landscape, fundamentally affecting the key characteristics and the overall impression of its character.	The development would become a prominent feature and would result in a very noticeable change to an existing highly sensitive and well composed view.

1.9 Residential Visual Amenity Assessment Methodology

The Residential Visual Amenity Assessment goes a stage beyond the LVA by appraising the impact on the visual component of the amenity and enjoyment of dwellings and their gardens which may reasonably be expected. The threshold of reasonable expectation adopted in this, and all such cases is that impacts should not be overwhelming or overbearing. It has been prepared in accordance with the Landscape Institute's Technical Guidance Note 2/19 'Residential Visual Amenity Assessment' (RVAA). This guidance sets out the 'Steps' to be followed when undertaking a RVAA and highlights how it should be informed by the principles and processes of GLVIA3. The purpose of the RVAA is to identify those properties where the effect of the Development leads to the 'Residential Visual Amenity Threshold' being reached or, in other words, where the effect could be described as overwhelming or overbearing.

This RVAA appraises the likely effects of the Development on the visual component of residential amenity relating to individual properties within a localised study area. The term 'residential amenity' refers to the living conditions at a house, including its gardens and domestic curtilage, which are commonly interpreted to include visual amenity, noise amenity and other factors such as shadow flicker. In a RVAA, such as this the LVA deals only with the visual amenity aspect of residential amenity, as this is the author's area of expertise.

The purpose of the RVAA is to inform the planning process. It is in this context that the Technical Guidance makes the following statement: 'It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence as a result of introducing a new development into the landscape. In itself this does not necessarily cause particular planning concern. However, there are situations where the effect on the outlook / visual amenity of a residential property is so great that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before.'

The approach set out in the Technical Guidance is based on the four following Steps:

- Step 1: Definition of the study area and scope of the assessment, informed by the description of the Development, defining the study area extent and scope of the assessment with respect to the properties to be included.
- Step 2: Evaluation of baseline visual amenity at properties to be included having regard to the landscape and visual context and the Development proposed.
- Step 3: Assessment of likely change to visual amenity of included properties in accordance with GLVIA3 principles and processes.
- Step 4: Further assessment of predicted change to visual amenity of properties to be included forming a judgement with respect to the Residential Visual Amenity Threshold.

In order for the Residential Visual Amenity Threshold to be reached, the magnitude of effect must be to such a degree that a property would become widely regarded as an unattractive place in which to live. This approach is commonly applied to the appraisal of visual effects on residential amenity. The approach has been refined through decisions for Inquiries and Appeals into wind farm applications across the United Kingdom and recognises that, given no person is entitled to a view in law, it is not sufficient for a property to simply sustain a Major visual effect for its residential amenity to be unacceptably harmed. For residential visual amenity to be harmed a higher threshold requires to be triggered, whereby the

turbine(s) are at such proximity to a house, or in such number, that they lead to an overwhelming or overbearing effect on the property to the extent that it becomes an unattractive place in which to live. Where this occurs, the matter affects the public interest as such an outcome would be considered to harm the provision of good housing stock.

1.10 Cumulative Effects Methodology

The Cumulative LVA (CLVA) appraises the cumulative effects of the development in combination with other developments. In line with NatureScot guidance, and outlined in GLVIA3, cumulative effects for the purpose of this appraisal are based on the following definitions:

- Cumulative Effects are defined as the additional changes caused by a proposed development in conjunction with other similar development or as the combined effect of a set of developments, taken together (SNH, 2012:12);
- Cumulative Landscape Effects are defined as effects that 'can impact on either the physical fabric or character of the landscape or any special values attached to it' (SNH, 2012:10);
- Cumulative visual effects are defined as effects that can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint' and/or sequential effects which 'occur when the observer has to move to another viewpoint to see different Wind turbines' (SNH, 2012:11);

A search has been undertaken using publicly available online data sources (http://aquaculture.scotland.gov.uk/map/map.aspx) and information on planning authority planning portals of all cumulative sites within a 40km radius of the Wind turbines site. All developments likely to impact landscape and visual receptors has been considered. The search included:

- Development under construction;
- Consented but not yet constructed development;
- Development for which a valid planning application has been submitted; and
- Development which has been refused planning permission and which is subject of an appeal.

In order to ensure the LVA assessment focuses on likely significant effects, the ZTV – Local Context was utilised and the study area limited to 5km in line with section 1.2.2 'Study Areas' and section 7.21 (item 2) of GLVIA3. In line with paragraph 7.32 of GLVIA3, distance is also a determining factor in appraising the appropriate study area and professional judgement, knowledge of the study area and a review of the types of development beyond 5 km have also been applied to determine the extents of the likely significant cumulative effects (Figure 9.1).

The appraisal of effects considered all development types within 5km of the development at various stages in the planning process as prescribed above.

An appraisal of the combined effects of all cumulative developments was undertaken to understand the cumulative effects on landscape and visual receptors.

1.10.1.1 Cumulative Landscape Effects

Cumulative landscape effects are determined using the same methodology as prescribed above in landscape effects in line with paragraph 7.27 of GLVIA3.

1.10.1.2 Cumulative Visual Effects

Cumulative visual effects are determined using the same methodology as prescribed above in landscape effects in line with paragraph 7.37 of GLVIA3. An appraisal of whether the

effects are combined (in combination/in succession, or sequential (frequently or occasionally) as per box 7.1 of GLVIA3 was used where such appraisal was appropriate.

2 VIEWPOINTS AND VISUALISATIONS METHODOLOGY

Viewpoint selection followed good practice guidance and in particular paragraphs 6.18 to 6.20 of GLVIA. The viewpoints chosen were used to aid the description of effects on both landscape and visual resources.

The selection of viewpoints was made on the basis of the following types of publicly accessible viewpoints, as follows:

- Representative viewpoints (for example, representing views of users of a particular footpath);
- Specific viewpoints (for example, a key view from a specific visitor attraction);
- Illustrative viewpoints (chosen to demonstrate a particular effect/specific issue);
- Any important sequential views, for example, along key transport routes; and
- Any additional viewpoints that have been requested by consultees at Scoping.

For the purposes of the LVA, all of the viewpoints were taken from publicly accessible land.

Baseline photographic panoramas have been produced for each viewpoint to illustrate the nature of existing views in the direction of the wind turbines. A baseline photographic survey has been undertaken using a digital SLR camera in accordance with current good practice guidance[14].

For all nine viewpoints, computer rendered images (photomontages) and model have been prepared. These show the wind turbines superimposed on to the baseline photographic view to more accurately convey the appearance of the wind turbines in the view. These photomontage locations have been selected as they provide views of key users for a number of different receptors and users which would have varying degrees of interest and which demonstrate a particular view from vantage points, and core paths, recreational routes, or sequential views.

The methodology for photography follows GLVIA3 and the Landscape Institute's TGN 06/19 Visual Representation of development proposals. A full methodology for photomontage preparation is included in Technical Appendix 1.

Photographs were taken in RAW format using both a Nikon D3 and Canon 5D Mark 3 Digital SLR camera for viewpoint photography and visualisations. The time, date, altitude and grid coordinates for each frame were recorded.

3 ZTV METHODOLOGY

Ordnance Survey Terrain 5 dataset was used as the Digital Terrain Model (DTM) for the Bare Earth ZTV. This DTM is a 5 m by 5 m raster dataset that is representative of the land form across Great Britain.

The ZTV was produced using ArcGIS Pro 2.1 software, and the calculations were based on the proposed infrastructure. The ZTV is created by highlighting areas on the DTM where a potential piece of infrastructure may be visible, based on the DTM. The height value given to the infrastructure was dependent on the flood depth value per field within the Wind turbines, plus the height of solar panels.

Viewpoint Photography

[14] Landscape Institute, 2019, Technical Guidance Note 06/19 Visual Representation Of Development Proposals Https://Landscapewpstorage01.Blob.Core.Windows.Net/Www-Landscapeinstitute-Org/2019/09/Li_Tgn-06-19_Visual_Representation.Pdf [Accessed 13/02/2020]

The viewpoints are prioritised based on their location in relation to the proposed site. This is so that viewpoints east of the site are visited in the morning and viewpoints west of the site are visited in the afternoon to guarantee where possible that the sun is behind the photographer at the time of any viewpoint photography being captured. Viewpoint location maps at 1:25,000 are printed for each viewpoint to aid location once on site.

Upon arrival at each proposed viewpoint location, minor adjustments to position are made in order to obtain as clear a view to the site centre as possible, avoiding trees, landscape or man-made obstructions where possible.

The tripod is set up. The camera is placed on the panoramic head in a portrait orientation where its height is confirmed and set at 1.6 m (please note: a portrait camera orientation is sometimes used in situations where the viewpoint is very close to a development in order that the top of the development is not cut off by the image boundaries). The head is then levelled followed by levelling of the camera itself using a hot-shoe spirit level. With the camera's viewfinder centred on the perceived site centre, exposure and focus settings are taken. These are then fixed manually on the camera so that they cannot be inadvertently altered. The head is rotated 90o to the left where the first frame of the 360o sequence is then taken. Each subsequent frame is taken using a 50% overlap of the previous frame until the full 360o sequence is captured.

The camera is then removed from the tripod and a viewpoint location photograph is captured showing the tripod in its position.

The camera and tripod configuration used is as follows:

Nikon D3 –Photography and Visualisations

- Camera body: Nikon D3 professional specification digital SLR (full frame CMOS sensor)
- Camera lens: Nikon AF 50mm f1.8 prime
- Tripod: Manfrotto 055MF4 with Manfrotto 438 ball leveller
- Panoramic head: Manfrotto 303SPH

Camera settings used for all photography:

- Camera mode: Manual Priority
- ISO: 200
- Aperture: f13
- Image format: RAW

The single frame photographs are opened in Adobe Photoshop CC2018 where they are checked and any dust spots are removed before being saved as a high-resolution TIFF image.

Photos are stitched together to create panoramas from the individual images making up the required field of view. Stitching is done in PTGui Pro version 10.0.12 professional photographic stitching software using the required projection settings. They are then checked and any further dust spots are removed before being saved as a high-resolution TIFF image.

4 PHOTOMONTAGE METHODOLOGY

In producing the computer model and verified view, the following methodology has been used:

- The wind turbines are located according to the scheme design and XYZ coordinates supplied;

- The arrangement and size of the wind turbines is modelled in accordance with the application;
- Viewpoint locations are inputted using GPS data collected on-site. 3DS max standard cameras are correctly positioned in virtual space;
- The viewpoint photography is loaded and aligned into the environment background;
- The cameras field of view is overwritten in 3DS max to match the field of view of the single photo the direction and viewing angle of each camera is aligned using GPS data and matched up to the surveyed reference points (provided by the surveyors);
- The rendered images have been stitched in cylindrical projection using the PTGui Software;
- The lighting in the model is matched as closely as possible to the lighting within the day and time of the photography for each viewpoint;
- The stitched images are rendered for each viewpoint and merged with the full resolution base photographs using Adobe Photoshop; and
- Any foreground elements within the panorama are masked out.

ANNEX B: FIGURES

[Uploaded separately]