4 Landscape and Visual Impact Assessment

Executive Summary

4.1 This chapter is a Landscape and Visual Impact Assessment (LVIA) of the proposed Carnbuck Wind Farm (hereinafter referred to as 'the Proposed Development'). An LVIA is a formal part of the Environmental Impact Assessment (EIA) process and the methodology used to prepare this chapter is defined by the requirements of the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 (hereinafter referred to as the 'EIA Regulations') and best practice guidance publications relating both to the LVIA process in general and in specific relation to wind farm developments (refer to Volume 4 Technical Appendix 4.1 for further details).

4.2 The Proposed Development comprises 12 three-bladed turbines each with overall heights to blade tip of 180 m. It would be located in the townlands of Carnbuck, Magheraboy and Moneyneagh, approximately 1.8 km to the east of Corkey village, County Antrim. The majority of the site is located beyond the western boundary of the Antrim Coast and Glens Area of Outstanding Natural Beauty (AONB) although a very short section of track on the north eastern site boundary would be located within the AONB. The Proposed Development would be located on upland grazing land between the existing Gruig wind farm and Skerry Hill and is also in close proximity a number of other existing and consented wind farms which are, for ease of reference, referred to throughout this LVIA as the 'Gruig cluster'. The Study Area for this LVIA covers an area that extends to a 30 km radius from the Proposed Development and is further described from paragraph 4.78. The relationship between the Proposed Development, the AONB and other wind farms in the 'Gruig cluster' are key issues that are considered throughout this chapter. Ancillary works associated with the turbines are also considered briefly in this Chapter. A detailed description of these elements is contained in Chapter 1.

The Purpose of this Chapter

4.3 The aims of an LVIA are to:

- Present an objective analysis of the landscape and visual character of a defined area (i.e. the baseline conditions within the Study Area) in so far as they relate to the Proposed Development;
- Identify the potential effects of the Proposed Development on these baseline conditions including direct, indirect, permanent, temporary and cumulative effects;
- Clearly distinguish between landscape effects and visual effects which although closely related are also distinct from each other. The former

relates to the effects on the physical landscape as a resource in its own right. The latter relates to the effects on specific views and general visual amenity as experienced by people (hereinafter referred to as visual receptors);

- Propose appropriate mitigation measures to address likely significant effects, where possible, and to assess any residual effects that would remain following the implementation of these measures;
- Present all information clearly and objectively with a well-reasoned methodology that is in accordance with best practice guidance and in a manner that will inform the decision-making process.

Statement of Authority

4.4 This LVIA has been prepared by Shanti McAllister Landscape Planning & Design Limited (hereinafter referred to as SMc Ltd) on behalf of the applicant, RES Limited (hereinafter referred to as RES). Shanti McAllister is an independent consultant and Chartered Landscape Architect with over 20 years' experience of preparing LVIAs for major development proposals including a large number of wind farms in Northern Ireland.

4.5 All information presented in this LVIA has been prepared in accordance with a methodology that is derived from a suite of best practice guidance (see Technical Appendix 4.1). A summary of the LVIA process and the key elements of this methodology are provided from paragraph 4.33 and are described in full detail in Technical Appendix 4.2. The identification and objective analysis of the landscape and visual effects of the Proposed Development is made using professional expertise and impartial judgement. The conclusions of the LVIA are based on whether or not the Proposed Development is likely to result in significant effects on the landscape and visual elements of the Study Area. The appropriate weight to be attached to these effects, when weighed against the other effects analysed in the ES, is the responsibility of the relevant planning authority, which in this case is the Strategic Planning Division (SPD) of the Department for Infrastructure (DFI).

Feasibility Appraisal and Design Iterations

4.6 The nature of the Proposed Development has evolved through an iterative design process that has been informed by a careful analysis of the constraints and opportunities presented by the site location and the characteristics of the Proposed Development itself. This process is further detailed from paragraph 4.25 of the LVIA and in Chapter 3: Design Evolution and Alternatives. The final choice of turbine model for the Proposed Development will be selected before construction, with a maximum tip height of 180 m. In this assessment turbine hub heights of 111 m and rotor diameters of 138 m have been assumed for the purpose of preparing visualisations (see Volume 2 Figures 4.5 onwards) but the application as a whole relates to the overall height above ground level only (180 m).

Establishing Baseline Conditions and Analysing Effects

4.7 The Baseline Assessment considers statutory landscape designations covering the Study Area which are contained within current planning policy. The primary policy guidance on the assessment of landscape and visual effects of wind farm development is the Strategic Planning Policy Statement for Northern Ireland (SPPS) which should be read in conjunction with Planning Policy Statement 18: Renewable Energy (PPS 18) and its accompanying Best Practice and Supplementary Planning Guidance (BPG and SPG). In addition there are a number of guidance documents and extant Development Plans, which contain some relevant statutory planning designations. These are analysed in the Baseline Assessment where applicable.

4.8 It is noted that changes in planning policy and updates to Development Plans are expected to take place over the coming months and years as Planning Policy Statements, supplementary guidance and existing Development Plans become superseded by emerging Local Development Plans. These must be primarily informed by the SPPS. The site falls partly within Causeway Coast and Glens Council area (CCG) and partly within Mid and East Antrim Council area (MEA) and neither Council currently have adopted Local Development Plans in place. The SPPS is clear that a transition period will operate until the adoption of a Plan Strategy and, until the adoption of such, the planning authority (in this case DfI) will apply existing regional policies and those contained in the SPPS.

4.9 The Baseline Assessment also considers non-statutory landscape classifications and the information gleaned through driving and walking surveys of the Study Area to amplify and enhance the understanding of its landscape and visual character.

4.10 Twenty-six viewpoints have been shortlisted for detailed analysis in this LVIA as a result of the viewpoint selection process which identifies parts of the Study Area and key groups of visual receptors that may be potentially affected by the Proposed Development. A detailed description of this selection process and a full list of Provisional Viewpoint Locations (PVPs) are provided in Technical Appendix 4.4. Detailed descriptions of the final Viewpoints are an integral part of the Visual Impact Assessment section of this LVIA chapter. Viewpoint locations are indicated on all map-based Figures (Figures 4.1 – 4.9). Visualisations to accompany the detailed written analysis of these Viewpoints are provided in Figures 4.10 – 4.31.

Overall Significance of Landscape and Visual Effects

4.11 In terms of both landscape and visual effects the Proposed Development conforms to the general principles laid out in the policy and best practice guidance which are broadly promotive of renewable energy developments as a means of mitigating against the effects of climate change. It also conforms to the majority of the landscape and visual character issues that are the relevant policy guidance documents require consideration of. The Proposed Development is not located within a designated landscape and would have very limited visibility from either of the two AONBs which are located within the Study Area. Furthermore, its visibility

from key parts of the Study Area such as the coast and within glens, and also from locations beyond approximately 5 km is particularly limited.

4.12 In relation to landscape character the Proposed Development is located in conformance with planning policy guidance for the Landscape Character Area (LCA) within which it is located. The proposed site location is within part of the LCA which is noted as being of least sensitivity due to the convex nature of the topography, the current land uses, the limited extent of visibility and physical influence on the AONB, elevated upland areas and coastline and also its capacity to utilise the existing infrastructure of the adjacent Gruig wind farm. Therefore, whilst the Proposed Development would have a direct physical effect on the part of the LCA within which it is located, it would be well located and its overall effect on landscape character would not be significant. Furthermore, the Proposed Development may have indirect effects on the landscape character of some other parts of the Study Area amounting to small areas of seven other LCAs which are in proximity to it, or which contain viewpoints used in this LVIA. However, with the exception of the LCAs which form the central pastoral lowlands directly to the south and west of the Proposed Development, the majority of these LCAs are located beyond 10 – 15 km away and are unlikely to experience any discernible effects on their physical landscape character resulting from the Proposed Development. In no instances are the physical effects on landscape character deemed to be significant.

4.13 The Proposed Development is located on the western-facing side of the Antrim Plateau between the higher ground formed by Slievenahanaghan and Skerry Hill directly to the north and south. These topographical features would effectively prevent views of the turbines from the majority of the AONB. The higher ground of Long Mountain Ridge on the western side of the Study Area has a similar effect by preventing visibility further to the west. Areas of clear visibility are typically located in the central part of the Study Area on upland areas adjacent to the Proposed Development and in the pastoral lowlands between the two upland areas to the east and west.

4.14 Of the 26 Viewpoints which have been selected to represent typical views of the Proposed Development within the Study Area only four would experience significant visual effects resulting from the Proposed Development. All of these are located within approximately 5 km and from where the Proposed Development would be both prominent and visible in its entirety or near-entirety from rural roads and areas of settlement. These viewpoints are also all located to the west of the Proposed Development in the uplands adjacent to the site of the Proposed Development. There are no significant effects from close range Viewpoints located to the south or east of the Proposed Development, although this includes locations within and adjacent to the Antrim Coast and Glens AONB. From the majority of the Study Area and the majority of the AONB the Proposed Development would either have no visibility or no significant visual effects.

4.15 In relation to cumulative effects the overall magnitude of cumulative effects on landscape character is deemed to be of low magnitude and not significant and this is due to the existing character of the site and immediate surroundings which are already largely characterised by a number of man-made influences. The Proposed Development would have a significant cumulative visual effect on three Viewpoints arising from its relationship with other wind farms in the Gruig cluster. These viewpoints are located within approximately 5 km of the Proposed Development where it, and other wind farms in this cluster, would be clearly visible and prominent. The Proposed Development would have no significant cumulative visual effect on the remaining 23 representative viewpoints in this LVIA. This includes several other viewpoints within 5 km of the Proposed Development and all four representative viewpoints within the Antrim Coast and Glens AONB. Across the majority of the Study Area and from the majority of representative viewpoints the Proposed Development's location as an integral part of an established cluster of wind farms means that its effects on the wider Study Area and in conjunction with other wind farms would not be significant. It is also noted that wind farms are not an uncommon feature in approaches to the AONB and there is already a repeating pattern of wind farms and single turbines across other parts of the Study Area and around the edges of other AONBs.

4.16 The Proposed Development would have no significant effects on landscape character and limited visibility across the wider Study Area as a whole. This is expressed by only four of the 26 representative viewpoints experiencing significant visual effects, and only three experiencing significant cumulative visual effects. Therefore, the LVIA concludes that the Proposed Development is acceptable in landscape and visual terms.

Description of the Proposed Development

4.17 The Proposed Development comprises 12 three-bladed turbines each with overall heights to blade tip of 180 m. The turbines are located on a convex site that is funnelled by rising ground to the north and south. The current land use on this site is rough upland grazing. There are a number of agricultural and wind farm tracks across the site but no public access.

4.18 The Proposed Development overall would be closely related to a number of existing and consented wind farms located within the same part of the Study Area and which are sufficiently close together that they form visually distinct cluster. For ease of reference these wind farms will be referred to as the 'Gruig cluster' which is considered to include the existing Gruig, Corkey, Corkey Extension and Altaveedan wind farms and a consented re-power of Corkey (which will replace the existing Corkey wind farm) which are all located to the north-west of the Proposed Development. A more detailed description of the wind farms in this cluster and the relationship with the Proposed Development is included in the cumulative section of

this LVIA starting at paragraph 4.174. The existing Gruig and Corkey wind farms are located on Slievenahanaghan hill to the north. Skerry Hill and Slieverush physically and visually contain the site to the south.

4.19 The layout of the Proposed Development essentially comprises of two radiating rows of turbine (turbines T4 – T12) which reflects the layout of the neighbouring wind farm, Gruig and also the typical positioning of turbines in the Gruig cluster on side slopes. This is already the case with Gruig, Corkey Extension and Altaveedan wind farms but it is noted that Corkey and Corkey Re-Power are more prominently located across the summit of Slievenahanaghan. Turbines T1 – T3 in the Proposed Development are positioned to the south west of the existing Gruig wind farm on the lowest part of the site between 255 – 291 m AOD (T3 is the lowest turbine at 255 m AOD) and fan around the base of Gruig and the other turbines in the Proposed Development. Turbines T4 – T12 are positioned between 281 - 364 m AOD with T12 occupying the highest position at the north eastern end of the southern-most row of turbines. There is a distance of approximately 2.3 km between the lowest turbine (T3) on the south western side of the Proposed Development and the highest turbine (T12) at the north eastern end.

4.20 Ancillary works associated with the turbines include: external electricity transformers; underground cabling; access tracks; turning heads; crane hardstandings; control building and substation compound; energy storage containers; off-site areas of widening to public roads; other ancillary works. A detailed description of these elements is contained in Chapter 1.

4.21 During construction and commissioning, over an anticipated 18-month period, there would be a number of temporary works including a construction compound with car parking, temporary storage areas and welfare facilities. Construction traffic would utilise the existing Gruig wind farm entrance on Altarichard Road and existing access tracks. The site entrance is visually contained by higher ground on all sides and is not widely visible from the surrounding area. The visual effects of construction traffic and work on site will be short term and experienced only in close range views, primarily located on the Altarichard Road which runs along the north eastern site boundary (see Viewpoint 2, Category A Viewpoints described from paragraph 4.129).

4.22 During the operational phase of the Proposed Development, anticipated to be 35 years, the landscape and visual effects would primarily relate to the presence of the turbines themselves as described and analysed in this LVIA. Day-to-day site activity would be minimal and there would be no further discernible changes to the landscape or visual character of the site resulting from site maintenance activities.

4.23 In addition to the turbines, there will be a sub-station and control building and energy storage compound located in the north eastern part of the site between turbines T10 and T12. Both compounds would be approximately the same size - 100 m x 45 m - and would be positioned on either side of the track leading to T9. The substation and control building would be on a permanent hardstanding located on

the northern side of the track. The energy storage compound would be located on the southern side of the track. It would contain 23 battery containers with heights of 2.89 m, 7 power conversions units of similar heights and an auxiliary transformer that would be 2.1 m high. These would be evenly spaced in a grid layout. The compound would be surfaced in crushed rock or asphalt and surrounded by a 2.5 m high weld mesh fence. The overall height of the proposed compounds would be small in relation to the scale of the proposed turbines. The representative viewpoints selected for detailed analysis in this LVIA (Figures 4.10 – 4.31) also illustrate that the bases and lower parts of turbines T10 and T12 are rarely visible from the surrounding Study Area. Therefore, in most instances the compounds are unlikely to be visible due to the screening effects of the site topography and the adjacent Slievenahanaghan and Skerry hills. Visibility of the ground in proximity to T10 and T12 is only indicated on the visualisations produced for Viewpoint 7, 10 and 23 which are located between 5.14 km and 15.43 km. In no instances would visibility of this part of the site be clearly discernible and therefore the proposed energy storage compound and substation are unlikely to be clearly visible either.

4.24 Following decommissioning of the wind farm all above-ground structures would be dismantled and removed from site (unless further consent is given to extend the operational life of the wind farm or replace the turbines) in accordance with a decommissioning and restoration plan which will be agreed with the local planning authority prior to decommissioning.

Feasibility Appraisal, Design Evolution and Iteration

4.25 The nature of the Proposed Development has evolved through an iterative design process that has been informed by a careful analysis of the constraints and opportunities presented by the site location and the characteristics of the Proposed Development itself. This process is further detailed in Chapter 3: Design Evolution and Alternatives. The turbine layout that is presented in the EIA is the result of this iterative design process.

4.26 Zone of Theoretical Visibility diagrams (ZTVs) were initially prepared to compare the difference in theoretical visibility for blade tip heights of 150 m versus 180 m. Comparative wirelines were prepared from twenty provisional viewpoint locations in key parts of the Study Area (PVPs 1 – 20 as detailed in Technical Appendix 4, Table 4.4.1) to compare and assess the appearance of the turbines at both heights, in relation to the layout generally and also the visual relationship between the Proposed Development and adjacent Gruig cluster of wind farms. The comparative wirelines are not reproduced in the LVIA but a comparative ZTV illustrating the difference between the two blade tip height options is included at Figure 4.5.

4.27 The findings of this initial review of layouts and potential turbine dimensions were as follows:

- Some viewpoints located within approximately 5 km would experience clear views of all / most of the turbines in the Proposed Development. In

these instances, whilst the comparative wirelines showed a clear difference in the scale of 150 m versus 180 m high turbines, it is noted that there would in practice be no comparison between the two tip heights. Given that there would be clear visibility of the Proposed Development regardless of tip height it was concluded that the choice of a lower or higher tip height would not substantially alter the overall extent of visibility or prominence. From locations at a similar distance where there would be less complete views of the Proposed Development, the difference in turbine heights was less discernible. From locations to the south of Skerry Hill close range views in the direction of the Proposed Development tend to be completely screened by topography;

- In viewpoints located beyond 5 km there was found to be no discernible difference in the perception of the scale of the Proposed Development regardless of blade tip height. However, refinements to the turbine layout were suggested to reduce instances of turbine stacking (see 4.28 below);
- The comparative ZTV diagram illustrating the difference in blade tip visibility between the 150 m and 180 m turbines (Figure 4.5) showed no significant increase in levels of visibility either within the Study Area as a whole or within the adjacent AONB resulting from turbines with 180 m tip heights. The additional visibility that would result from 180 m tip height turbines would be 2.77% across the Study Area as a whole and approximately three quarters of this would be located at distances greater than 15 km from the Proposed Development.
- A cumulative ZTV illustrating the manner in which the Proposed Development would increase visibility over and above that of the existing Gruig cluster[1] indicates a 2.74% increase in overall visibility and suggests that the majority of this would be located within the central part of the adjacent AONB. However, further site analysis found that the close range visibility indicated to the south east of the Proposed Development would only be of a very small number of blade tips and would typically be screened by variations in topography that are not shown by the 50 m contour data used for the ZTV. In particular, the site assessment revealed very little clear visibility of the Proposed Development in proximity to Newtown Crommelin where the majority of additional visibility is indicated by the ZTV. Areas of additional theoretical visibility located around Glenariff Forest Park would, in practice be screened by forestry, and the uplands to the east of this are not publicly accessible. A more detailed analysis of the cumulative ZTVs is provided from paragraph 4.184.

[1] Figure 4.9 (page 1 of 3) considers the Gruig cluster to include existing wind farms at Altaveedan, Corkey Extension and Gruig and Corkey Re-Power consented wind farm which will replace the existing Corkey wind farm with substantially larger turbines. The latter is not included in the ZTV calculation.

4.28 As a result of the design iteration process, 180 m blade tip was deemed to be an acceptable tip height because the combination of a larger rotor and taller hub height would create greater clearance/ visual separation between the blade tips and skyline and the blades would be less likely to interfere with appreciation of the landscape. Furthermore, it is accepted that a larger rotor is able to capture more wind and is therefore more productive. As a result of the above findings a number of refinements were made to the proposed layout as presented in the ES and this has resulted in a number of benefits in landscape and visual terms:

- The turbine layout has been refined to reduce instances of stacking. Stacking is where two or more turbines will appear directly in front of each other in a view and will therefore result in a 'heavier' or more solid, and hence more prominent appearance;
- The presence of outlying turbines was also addressed in the iterative design process and efforts were made to minimise instances where turbines were located at some distance or at noticeably different heights from the main grouping of turbines. This has resulted in a simpler layout with fewer variations in tip heights in relation to contour AOD levels. This has also created a more compact and evenly spaced layout that reflects that of the existing Gruig wind farm.

Consultation

4.29 Consultation and discussion between RES and the Department for Infrastructure (DfI) has taken place through the submission of a Proposal of Application Notice (PAN) and a notification of intention to submit an Environmental Statement copies of which are provided in Volume 4 Appendix 1.1. A copy of the responses from DfI is provided in Appendix 1.2. The Department are obliged to consult with other statutory consultees who would have an interest in the likely landscape and visual effects of the Proposed Development and it is understood that they consulted directly with the Department of Agriculture, Environment and Rural Affairs: Northern Ireland Environment Agency (NIEA) although no scoping response relating to landscape and visual issues has been received to date.

4.30 An online public exhibition was held in March 2022 and a second public exhibition was held on Thursday 26th January 2023 from 4pm-8pm in The Millennium Centre, Loughgiel, BT44 9JN to present and discuss the Proposed Development with interested parties from the local and wider community. Three ZTV diagrams were presented to illustrate the theoretical visibility of the Proposed Development within a 15 km Study Area using both hub height and blade tip calculations overlaid with the AONB boundary and the location of Provisional Viewpoints (PVPs). A cumulative ZTV showing the theoretical visibility of the Gruig cluster and additional theoretical visibility of the Proposed Development within a 30 km Study Area was also presented. Wirelines and photomontages of six PVPs were presented at the online public exhibition to illustrate how the Proposed Development would appear from

some of the key viewpoints in the surrounding area (PVPs 3, 5, 10, 25, 54 and 58), (refer to Technical Appendix 4.4 Table 4.4.1). Wirelines and photomontages of eight PVPs were presented at the public exhibition in January 2023 to illustrate how the Proposed Development would appear from some of the key viewpoints in the surrounding area (PVPs 3, 5, 6, 10, 13, 25, 54 and 58), (refer to Technical Appendix 4.4 Table 4.4.1).

4.31 A number of concerns were raised during the consultation process:

- The overall size of the proposed turbines and the prominence of these from residential properties within 5 km of the Proposed Development;
- The prominence of turbines 1 – 6 which are closer and more prominent from populated areas;
- The difference in the overall height of the proposed turbines compared with those of the existing wind farms in the Gruig cluster;
- The visual effects from the junctions of Loughill and Lislaban Roads and Rosdermott and Moneyduff Roads which are both located to the south west of the Proposed Development.

4.32 The comments and concerns raised are taken into account in the detailed analysis of landscape and visual effects in this chapter. In particular the selection and analysis of viewpoints in this LVIA includes representative close range views from several rural roads within 5 km of the Proposed Development (Category A Viewpoints described from paragraph 4.129) and the two specific locations mentioned above were included in the analysis of PVPs. Provisional wirelines were prepared to ensure that the nature of views from these locations was adequately considered and represented in the final selection of Viewpoints (Technical Appendix 4.4, Table 4.4.1).

Summary of the Methodology for this Landscape and Visual Impact Assessment

Best Practice Guidance

4.33 An LVIA is a formal assessment, which is carried out as part of the EIA, a process defined by the EIA Regulations. In accordance with these Regulations the LVIA takes an objective approach to the identification of the baseline conditions within an appropriate 'Study Area'. In this instance the Study Area extends to a 30 km radius from the Proposed Development.

4.34 The LVIA methodology used by the author for wind farm projects has been developed in accordance with the EIA Regulations and the suite of available best practice guidance on the preparation of LVIAs in both general terms and specifically in relation to wind energy development. The latter, published by Nature Scotland and the Landscape Institute, has been adapted by the author to suit the Northern Ireland context. A full list of this best practice guidance is provided in Technical

Appendix 4.1 and a detailed description of the Methodology is provided in Technical Appendix 4.2. This LVIA must be read in conjunction with these Technical Appendices in order to be properly understood.

4.35 The criteria used to identify and analyse both the nature of landscape and visual receptors (their 'Sensitivity'), the nature of landscape and visual effects ('Magnitude') and the Signficance of these effects are all key LVIA terms which are defined in detail in the Methodology. They are also summarised in this section of the chapter for ease of reference.

The LVIA Process

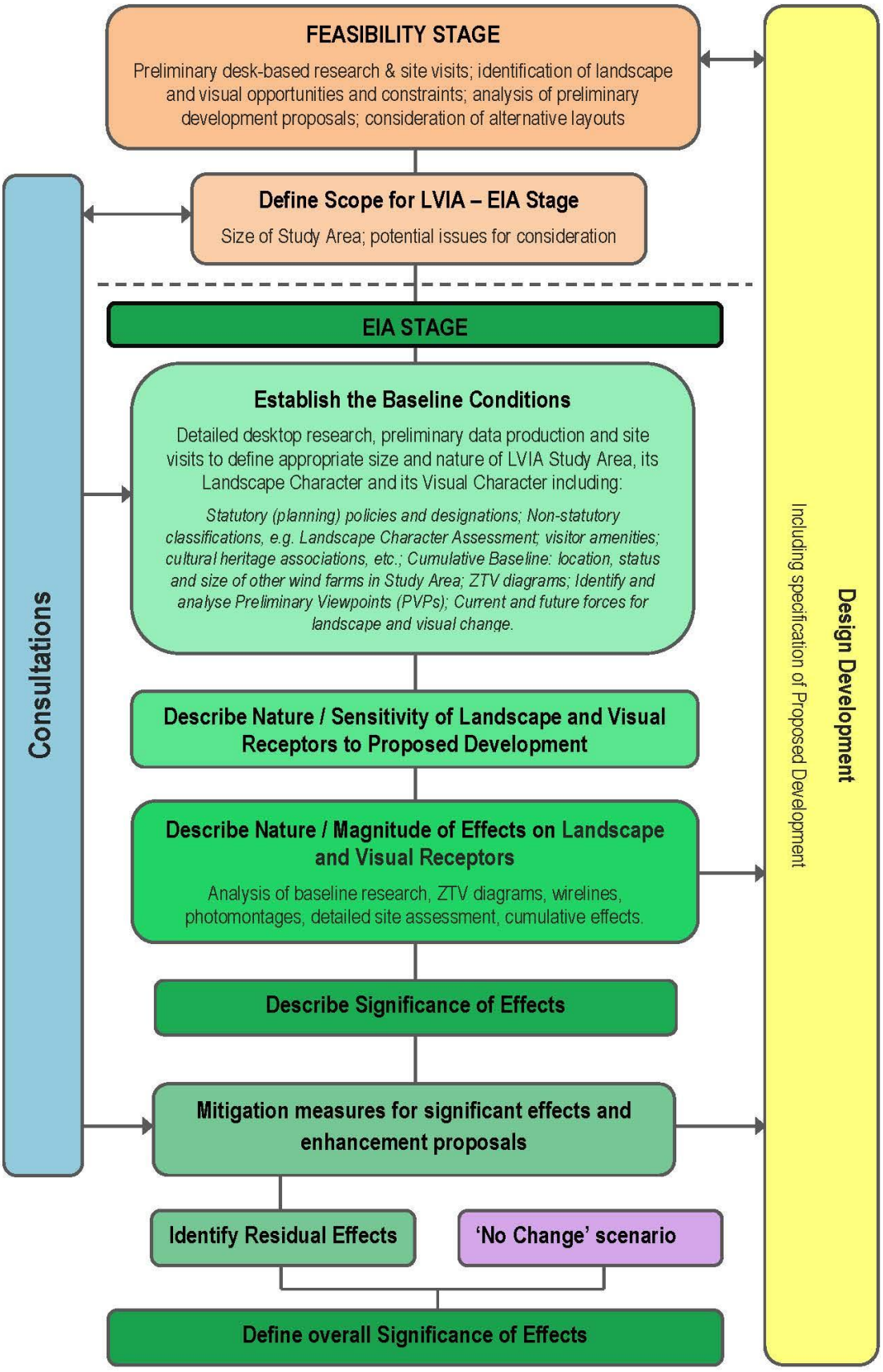
4.36 The LVIA begins with an assessment of baseline conditions combining existing desktop information, such as maps and documents, with site surveys of the Study Area carried out by an experienced Chartered Landscape Architect. A review of relevant planning policy is carried out in order to identify any elements or parts of the Study Area which are recognised for their landscape or visual qualities and any locations that may have been identified by the SPG as being more or less suitable for wind energy development. The baseline assessment also evaluates likely levels of acceptable change for various parts of the Study Area in accordance with current definitions of landscape and visual sensitivity.

4.37 Potential landscape and visual effects on the baseline conditions are then assessed as separate but linked issues. However, it is noted that all policy guidance and publications providing information on the baseline character of the Study Area deal with landscape and visual elements in combination. To avoid repetition and present an accurate reflection of this baseline information it has been necessary for the LVIA analysis of these publications to reflect this approach. The assessment of both landscape and visual effects require a combination of quantitative and qualitative evaluation. The magnitude of landscape effects is derived from the extent to which physical changes resulting from the Proposed Development would cause changes in landscape character. Visual effects relate to changes in the composition of views and people's perception of/responses to these physical changes.

4.38 For both landscape and visual effects the Significance of effect is derived from the assessment of Landscape Value, Sensitivity and Magnitude of change and also by using objective professional judgement in relation to site circumstances. It is important to recognise that the landscape is constantly evolving and that opinions on the beneficial or adverse effects of wind farms are highly subjective. Therefore, in order to ensure that the LVIA presents information objectively, a judgement is made on the significance of effects but no judgement is made on whether these effects are beneficial or adverse.

Plate 4.1 presented on next page…

Plate 4.1: The LVIA Process



Key LVIA Terminology and Assessment Criteria

4.39 The following terms and assessment criteria form the basis for the LVIA and are summarised below for ease of reference. They are fully described in Technical Appendix 4.2.

The Nature of Landscape and Visual Receptors

4.40 The baseline assessment element of the LVIA gathers information on the 'nature' of landscape and visual receptors which is then correlated with the nature of the Proposed Development and its anticipated 'effects' on these receptors in order to draw conclusions on the 'significance' of these effects.

4.41 This LVIA uses the term 'Landscape Sensitivity' to refer to the overall nature of landscape receptors (refer to the landscape attributes described in Technical Appendix 4.2, paragraph 4.18) and their susceptibility to the changes caused specifically by the Proposed Development.

4.42 The consideration of key landscape attributes enables a considered judgement to be made on the level of sensitivity to be apportioned to each defined LCA within the Study Area specifically related to the Proposed Development. The following criteria outline the general principles that are used to inform and guide the assessment of Landscape Sensitivity:

- ***High Landscape Sensitivity:*** A landscape where the majority of attributes are unlikely to withstand change without causing a change to overall landscape character to the extent that it would be difficult or impossible to restore. The frequency and sensitivity of landscape receptors may be high but not exclusively so;
- ***Medium Landscape Sensitivity:*** A landscape with a combination of attributes that is capable of absorbing some degree of change without affecting overall landscape character. There are unlikely to be large numbers of sensitive landscape receptors;
- ***Low Landscape Sensitivity:*** A landscape where the majority of attributes are robust and/ or tolerant of change to the extent that change or development would have little or no effect on overall landscape character. It is likely to be easily restored and the frequency and sensitivity of landscape receptors may be low but not exclusively so.

4.43 Visual effects relate to changes in the composition of views and people's responses to these changes. The nature of visual receptors is determined through the analysis of ZTV diagrams, site assessment and viewpoints representing both typically occurring views within the Study Area and views from specific locations or those likely to be experienced by specific visual receptors (for example, visitors to a specific site). 'Visual Sensitivity' refers to the overall nature of views and viewers (visual receptors) and their likely sensitivity to the changes in views that would be caused specifically by the Proposed Development. The following criteria outline

the general principles that are used to inform and guide the assessment of visual sensitivity:

- ***High Visual Sensitivity***: may typically include residents of properties where the main view is orientated towards the Proposed Development, or people undertaking recreation where the landscape within which the Proposed Development is seen is the primary reason for attraction (for example, walkers, cyclist and drivers on scenic routes). Receptors are more likely to be located within a designated landscape and could be attracted to visit more frequently, or stay for longer, by virtue of the view;
- ***Medium Visual Sensitivity***: may typically involve people undertaking active recreational pursuits where the wider landscape within which the Proposed Development is not seen as the primary reason for attraction (e.g. golf, water sports, theme and adventure parks, historic sites, parks and gardens). Receptors are less likely to be located within a designated landscape and could be attracted to visit more frequently or stay for longer by virtue of the facilities and features of the particular attraction rather than by the value of the view;
- ***Low Visual Sensitivity***: may typically include vehicular travellers; outdoor workers (e.g. farm and forestry workers); people in indoor workplaces and community facilities; and residents within larger settlements. Receptors are unlikely to be within a designated landscape and are most likely to be present at a given viewpoint by virtue of some other need or necessity unrelated to the appreciation of the landscape or visual value.

The Nature of Landscape and Visual Effects

4.44 This LVIA uses the term 'Magnitude' to cover assessment of the degree of change that would result from the introduction of the Proposed Development into the baseline landscape and visual context.

4.45 The nature of landscape effects is dependent on the degree of change that would result from the introduction of the Proposed Development in terms of size or scale, geographical extent, duration and reversibility of the proposed change and whether the effects would be experienced directly or indirectly (refer to Technical Appendix 4.2 paragraph 4.28 for further detail). The following criteria outline the general principles that are used to inform and guide the assessment of the Magnitude of landscape effects:

- ***High Landscape Magnitude***: The Proposed Development would be immediately apparent and would result in substantial loss or major alteration to key elements of landscape character to the extent that there is a fundamental and permanent, or long-term, change to landscape character. The change may occur over an extensive area;

- ***Medium Landscape Magnitude***: The Proposed Development would be apparent and would result in loss or alteration to key elements of landscape character to the extent that there is a partial long-term change to landscape character. The change may occur over a limited area;
- ***Low Landscape Magnitude***: The Proposed Development would result in minor loss or alteration to key elements of landscape character to the extent that there may be some slight perception of change to landscape character. The change may be temporary and occur over a limited area;
- ***Negligible Landscape Magnitude***: The Proposed Development would result in such a minor loss or alteration to key elements of landscape character that there would be no fundamental change.

4.46 The nature of visual effects is dependent on factors including, for example, the prominence of the Proposed Development in the view; the number of turbines that would be visible and the geographical extent of turbines in relation to the extent of the view; the angle and relative elevation of the viewpoint in relation to the Proposed Development; and the context within which the Proposed Development will be seen (refer to Technical Appendix 4.2 paragraph 4.36 for further detail). The following criteria outline the general principles that are used to inform and guide the assessment of the Magnitude of visual effects:

- ***High Visual Magnitude***: The Proposed Development would be a dominant and immediately apparent feature that would affect and change the overall character of the view and to which other features would become subordinate;
- ***Medium Visual Magnitude***: The Proposed Development would form a visible and recognisable new element within the overall view and would be readily noticed without changing the overall nature of the view;
- ***Low Visual Magnitude***: The Proposed Development would form a component of the wider view that might be missed by the casual observer. Awareness of the Proposed Development would not have a marked effect on the overall quality of the view;
- ***Negligible Visual Magnitude***: The Proposed Development would be barely perceptible, or imperceptible, and would have no marked effect on the overall quality of the view.

The Significance of Landscape and Visual Effects

4.47 The EIA Regulations require the LVIA to identify and assess the acceptability of significant effects. Best practice guidance recognises that the significance of effects is not absolute and is related specifically to the Proposed Development. It is also dependent on the relationship between sensitivity and magnitude.

4.48 This LVIA uses the following criteria to inform and guide the assessment of the Significance of Landscape Effects:

- ***Significant Landscape Effects:*** Effects that would occur when the majority of landscape attributes are deemed to be highly sensitive and the magnitude of change would alter landscape character to the extent that it would become defined, or considerably influenced, by the presence of the Proposed Development;
- ***No Significant Landscape Effects (Not Significant)***: Effects would not be significant when the majority of landscape attributes are not deemed to be highly sensitive and where the Proposed Development would have little, or no, effect on existing landscape character. This would also occur where the Proposed Development can be integrated into the existing Study Area without the loss of key landscape attributes. Where the magnitude of effect is higher but the number and sensitivity of landscape attributes decreases, so landscape character would become less defined by the Proposed Development and more so by other landscape attributes.

4.49 This LVIA uses the following criteria to inform and guide the assessment of the Significance of Visual Effects:

- ***Significant Visual Effects***: Effects that would occur when the majority of visual receptors are deemed to be highly sensitive and the magnitude of change would alter visual character to the extent that it would become defined, or considerably influenced, by the presence of the Proposed Development;
- ***No Significant Visual Effects (Not Significant)***: Such effects would occur when the majority of visual receptors are not deemed to be highly sensitive and where the Proposed Development would have little or no effect on existing views. The Proposed Development would be likely to constitute a minor component of the wider view, which might be missed by the casual observer, and awareness of the Proposed Development would not have a marked effect on the overall quality of the view. Where the Proposed Development is easily noticeable but the number and sensitivity of visual receptors decreases, so overall visual character would remain less defined by the Proposed Development and more so by other elements of the existing view.

Cumulative Landscape and Visual Effects

4.50 The purpose of the cumulative impact assessment is to measure the incremental effect of the Proposed Development on the Cumulative Baseline rather than to assess the combined effects of all, or some, of the Cumulative Baseline with the Proposed Development[2]. The magnitude of cumulative change is dependent on a number of factors, including the presence of other wind farms and the degree to

[2] Scottish Natural Heritage (March 2012), 'Assessing the Cumulative Impacts of Onshore Wind Energy Development s' paragraphs 7 and 55, paraphrased from the GLVIA para 7.12

which these already influence landscape and visual character and the distance between the Proposed Development and other wind farms (see Technical Appendix 4.2, paragraphs 4.60 and 4.65 for further detail).

4.51 There are existing and consented wind farms as well as single turbines in other parts of the 30 km Study Area and these are considered to form part of its baseline character which informs the assessment of landscape and visual effects, particularly the analysis of effects on viewpoints for this LVIA. Proposed wind farms are also considered but may be afforded less weight when assessing the incremental effects of the Proposed Development because their status is less certain. The additional cumulative effects of the Proposed Development when considered with other wind farms and single turbines in the cumulative baseline are assessed from paragraph 4.174.

4.52 Cumulative landscape effects relate to the incremental degree of change to the existing landscape character or physical fabric of the Study Area that would result from the introduction of the Proposed Development over and above that of the Cumulative Baseline. The following criteria outline the general principles that are used to inform and guide the assessment of the Magnitude of Cumulative Landscape Effects:

- ***High Cumulative Landscape Magnitude***: The introduction of the Proposed Development to the Cumulative Baseline would result in substantial incremental loss of, or major alteration to, key elements of landscape character to the extent that there would be a fundamental and permanent, or long-term, change to landscape character. The change may occur over an extensive area;
- ***Medium Cumulative Landscape Magnitude***: The introduction of the Proposed Development to the Cumulative Baseline would result in the incremental loss of, or alteration to, key elements of landscape character to the extent that there would be a partial long-term change to landscape character. The change may occur over a limited area;
- ***Low Cumulative Landscape Magnitude***: The introduction of the Proposed Development to the Cumulative Baseline would result in minor incremental loss of, or alteration to, key elements of landscape character to the extent that there may be some slight perception of change to landscape character. The change may be temporary and occur over a limited area;
- ***Negligible Cumulative Landscape Magnitude***: The introduction of the Proposed Development to the Cumulative Baseline would result in such a minor incremental loss of, or alteration to, key elements of landscape character that there would be no fundamental change to landscape character.

4.53 The significance of cumulative landscape effects is dependent on landscape sensitivity, the magnitude of cumulative change, and the relationship between

these two factors. The following criteria outline the general principles that are used to inform and guide the assessment of the significance of cumulative landscape effects:

- ***Significant Cumulative Landscape Effects***: Effects that would occur when the majority of landscape attributes are deemed to be highly sensitive and the incremental effects of the Proposed Development would alter landscape character to the extent that it would become defined or considerably influenced by the presence of wind farms, taking account of cumulative baseline conditions;
- ***No Significant Cumulative Landscape Effects (Not Significant):*** Such effects would occur when the majority of landscape attributes are not deemed to be highly sensitive and where the Proposed Development would have little or no incremental effect on the existing landscape character. Where the Proposed Development can be integrated into the existing cumulative baseline, without the loss of key landscape attributes, cumulative landscape effects would also be deemed as Not Significant. This level of significance would also occur where the Proposed Development may have a greater magnitude of effect but its incremental effects would not cause the landscape character to become more defined by wind farms than it currently is, or to become more defined by wind farms than by other landscape attributes

4.54 Cumulative visual effects relate to the degree to which wind energy developments feature in particular views or sequences of views, and the resulting effects of this upon visual receptors. This LVIA considers simultaneous and sequential cumulative visual effects that may arise within the Study Area and in relation to the selected viewpoints. The LVIA principally considers the degree to which the Proposed Development would contribute to wind energy development becoming a significant or defining characteristic of visual character. The following criteria outline the general principles that are used to inform and guide the assessment of the Magnitude of cumulative visual effects:

- ***High Cumulative Visual Magnitude***: The Proposed Development would increase the scale of wind turbines in the landscape to a level at which the view would become dominated by wind farms;
- ***Medium Cumulative Visual Magnitude***: The Proposed Development would result in a noticeable increase in turbines but this increase would not result in wind farms being the dominant feature of the view;
- ***Low Cumulative Visual Magnitude***: The Proposed Development would be visible but would constitute a component of the view that might be easily missed by the casual observer and/ or would not contribute to the overall prominence of wind farms within the view;

- ***Negligible Cumulative Visual Magnitude***: The Proposed Development would be barely perceptible, or imperceptible, and/ or would have no effect on the perception of wind turbines within the view.

4.55 The following general principles are used to inform and guide the assessment of the Significance of Cumulative Visual Effects:

- ***Significant Cumulative Visual Effects***: Effects that would occur when the majority of visual receptors are deemed to be highly sensitive and the addition of the Proposed Development to the cumulative baseline would result in the view becoming defined, or considerably influenced, by wind turbines;
- ***No Significant Cumulative Visual Effects (Not Significant)***: Such effects would occur when the majority of visual receptors are not deemed to be highly sensitive and where the Proposed Development would have little or no incremental effect on existing views. The Proposed Development is likely to constitute a barely perceptible, or imperceptible, component of the wider view, which might be missed by the casual observer. Awareness of the Proposed Development would not have a marked effect on the overall quality of the view. Where the Proposed Development may be a noticeable addition to views containing wind farms in the cumulative baseline but it would not cause the overall visual character of the view to become defined by wind turbines rather than by other elements of the existing view the overall effects would also be deemed to be Not Significant.

Baseline Assessment

Legislation and Planning Policy

4.56 The primary policy guidance on the assessment of landscape and visual effects of wind farm development is the Strategic Planning Policy Statement for Northern Ireland (SPPS) which should be read in conjunction with Planning Policy Statement 18 (PPS 18), its Supplementary Planning Guidance (SPG) and Best Practice Guidance (BPG)[3]. Further changes in planning policy and updates to development plans are expected to take place over the next few months and years as Planning Policy Statements, supplementary guidance and existing Development Plans become entirely superseded by the SPPS and emerging Local Development Plans.

[3] Department of the Environment Northern Ireland (September 2015) 'Strategic Planning Policy Statement for Northern Ireland (SPPS): Planning for Sustainable Development' , (2013) ; 'Planning Policy Statement 18: Renewable Energy' and (August 2010) 'Wind Energy Development in Northern Ireland's Landscapes, Supplementary Planning Guidance to Accompany Planning Policy Statement 18 'Renewable Energy'; (2009) 'Best Practice Guidance to Planning Policy Statement 18: Renewable Energy'

Strategic Planning Policy Statement for Northern Ireland (SPPS): Planning for Sustainable Development

4.57 The SPPS sets out strategic subject policies, including for renewable energy, and is intended to provide core principles to underpin the delivery of the new two-tier planning system where local councils have primary responsibility for the implementation of development control. However, for the transitional period whilst Local Development Plans are being prepared, the existing suite of Planning Policy Statements, supplementary and best practice guidance and relevant provisions within the *'Planning Strategy for Rural Northern Ireland'* will remain in place.

4.58 The aim of the SPPS is to facilitate sustainable development based on three overarching principles: supporting rural regeneration; promoting economic growth; and promoting environmental sustainability. The latter principle includes for the protection of landscape character as well as a reduction in greenhouse gas emissions. The mitigation and adaptation to the effects of climate change is a key principle in the SPPS which notes that the promotion of renewable energy systems is one of the means by which the planning system will achieve this principle.

4.59 'Subject Polices' for Renewable Energy are covered in paragraphs 6.214 - 6.234 of the SPPS but the SPG is also noted as remaining in place. The SPPS retains the European Landscape Convention's definition of 'landscape' to mean "*an area, as perceived by people, whose character is the result of the action and interaction of natural and / or human factors*"[4]. The SPPS also recognises that Northern Ireland has significant renewable energy resources and that the renewable energy industry makes an important contribution to sustainable development and investment in the region. Renewable energy also reduces our dependence on imported fossil fuels and benefits our overall health, well-being and quality of life. "*The aim of the SPPS in relation to renewable energy is to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve Northern Ireland's renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance*." (SPPS paragraph 6.218).

4.60 The strategic regional objectives of the SPPS are to ensure that environmental, landscape and visual amenity impacts are adequately addressed, and that natural and cultural heritage features are adequately protected. However, the SPPS also expects that the emerging Local Development Plans will support a diverse range of renewable energy developments whilst taking account of both local circumstances and the wider recognised benefits of renewable energy. Whilst the SPPS advises that a cautious approach should be applied to proposals within designated landscapes which are of significant value, and their wider settings where it may be

[4] Definition of landscape used in the European Landscape Convention (2000, Article 1.a) Council of Europe and 'Northern Ireland's Landscape Charter' (January 2014) NIEA

difficult to accommodate renewable energy developments without detriment to the regions cultural and natural heritage assets, it also notes that *"It will not necessarily be the case that the extent of visual impact or visibility of wind farm development will give rise to negative effects; wind farm developments are by their nature highly visible yet this in itself should not preclude them as acceptable features in the landscape. The ability of the landscape to absorb development depends on careful siting, the skill of the designer, and the inherent characteristics of the landscape such as landform, ridges, hills, valleys, and vegetation*." (SPPS paragraphs 6.230 - 231). The Proposed Development's location takes cognisance of the landscape characteristics of the receiving landscape which are analysed from paragraph 4.78. Although a small part of the access track would be located within the AONB boundary the majority of the site, including all the proposed turbines would not be within a designated landscape but it would be located just beyond the western boundary of the Antrim Coast and Glens AONB and would add to the size and scale of the Gruig cluster. There is a pattern of wind farm clusters located along the western edge of this AONB and wind farms are similarly located around the outer edges of AONBs elsewhere in Northern Ireland. The extent of its visibility from within the AONB boundary would be relatively limited and it would also have limited cumulative effects. Furthermore, the Proposed Development would be in accordance with the strategic aims of the SPPS related to the mitigation of climate change.

Planning Policy Statement 2: Natural Heritage

4.61 Policy NH6 of PPS 2 states that permission will only be granted for new development in AONBs where it is of an appropriate design, size and scale for the locality and meets three criteria including; siting that is sympathetic to the special character of the AONB in general and also the particular locality; it respects or conserves features of importance to this character and; it respects vernacular styles and materials. PPS 2 also notes that "*the quality, character and heritage value of the landscape of an AONB lies in their tranquillity, cultural associations, distinctiveness, conservation interest, visual appeal and amenity value*" (PPS 2, paragraph 5.15). It refers to LCAs and AONB Management Plans for further information.

4.62 Due regard has been given to the special character of the AONB in the detailed analysis of both landscape and visual effects throughout this chapter but it is noted that only the proposed site entrance and a short section of access track, most of which already serves the existing Gruig wind farm, falls within the AONB boundary. The majority of the Proposed Development is not located within the AONB boundary. Detail of the appropriateness of the proposed design, scale and size of the Proposed Development in relation to landscape character as described by the SPG is analysed from paragraph 4.88

Planning Policy Statement 18: Renewable Energy

4.63 The aim of PPS 18, which is broadly aligned with that of the SPPS, is "*to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment in order to achieve Northern Ireland's renewable energy targets and realise the benefits of renewable energy*" (PPS 18, section 3.1). Policy RE1 states that proposals must demonstrate that they "*would not have an unacceptable impact on visual amenity or landscape character through: the number, scale, size and siting of turbines; that the Proposed Development has taken into consideration the cumulative impact of existing turbines, those which have permissions and those that are currently the subject of valid but undetermined applications*". It is noted that the more recently published EIA Regulations do not require consideration of proposed wind farms due to the unknown nature of their status.

Best Practice Guidance to accompany PPS 18

4.64 The BPG provides technical information and potential considerations in relation to planning applications for wind energy projects. It refers to the SPG for guidance on the landscape and visual analysis process and advice on the indicative type of development that may be appropriate but it is not prescriptive. The BPG notes that "*There are no landscapes into which a wind farm will not introduce a new and distinctive feature. Given the Government's commitment to addressing the important issue of climate change and the contribution expected from renewable energy developments, particularly wind farms, it is important for society at large to accept them as a feature of the Region for the foreseeable future.*" However, it also notes that the locations of developments should be carefully considered in order to reduce their impact and aid integration into the local landscape even though they may be highly visible. (BPG section 1.3.18 - 19).

4.65 The BPG reiterates the SPPS in its recognition that visibility doesn't necessarily equate with levels of acceptability and notes that there are three considerations when considering the capacity of a landscape to accommodate wind farm development (BPG 1.3.21):

- The degree of impact the Proposed Development will have on the existing character of the landscape;
- The sensitivity of the character of the landscape, and;
- The extent to which this impact can be modified and reduced by design.

4.66 The BPG also refers to the inherent characteristics of a landscape, such as landform and vegetation, the careful siting and skilful design of developments all playing an important role in the ability of a landscape to absorb development. Turbine layouts must also be appropriate to the local landform and landscape characteristics; groups of turbines can normally appear acceptable as single isolated features in open, undeveloped landscapes whereas rows of turbines may be more appropriate where there are formal field boundaries within flatter agricultural landscapes.

Wind farms should not appear visually confusing in relation to the character of the landscape and should ideally be separate from surrounding features to create a simple image (sections 1.3.22 & 1.3.26).

4.67 In relation to visual impact the BPG notes that wind farms in an open landscape setting are likely to be prominent features at distances below 2 km, and relatively prominent at up to 5 km. Between 5 – 15 km they are more likely to be seen as part of the wider landscape and prominent only in clear visibility. Beyond 15 km they are only likely to be seen in clear visibility and as a minor element in the landscape (section 1.3.25).

4.68 It is noted that Nature Scotland's best practice guidance in relation to the siting and design of wind farms has been updated since the BPG was published and no longer refers to specific distances in relation to visual prominence (see Technical Appendix 4.1, paragraph 4.3). Their research has found that other factors such as weather conditions, time of day/year, angle of view, and composition of other elements in the view, all contribute to the assessment of visual effects and visual prominence and this is also taken into account in the assessment of visual effects.

Supplementary Planning Guidance to accompany PPS 18

4.69 The SPG is intended to provide broad strategic guidance on appropriate locations for wind energy development based on the definition of Landscape Character Areas (LCAs) within the Northern Ireland Landscape Character Assessment (NILCA). It advises that the detailed assessment of the nature of a wind farm's effects on landscape character should be dealt with on a case-by-case basis via an LVIA. The SPG itself is non-prescriptive with regards to turbine heights and groupings. Its assessment of landscape sensitivity is intended to provide broad guidance but not to exclude development. Rather it places an onus on developers to demonstrate, via the EIA process, that wind farms can be developed without unacceptable effects on LCAs as a whole.

4.70 The SPG recommends a 20-30 km radius Study Area for medium or large commercial height turbines, which has informed the selection of a 30 km Study Area for this Development. The SPG includes recommendations that are specific to the potential effects of wind energy developments on the character of individual LCAs. The SPG as it relates to the Proposed Development is analysed starting at paragraph 4.88.

4.71 The assessment of Landscape Value and Sensitivity for some LCAs is altered from the SPG where detailed site survey in relation to this LVIA has revealed variations in particular areas. This is in accordance with the SPG, which states that, "*It should be noted that within many LCAs there is considerable variation in sensitivity levels across the area, reflecting the fact that the LCAs are broad character or identity areas. The overall sensitivity level is therefore the level that prevails over most of the LCAs geographic area. Localised areas of higher or lower sensitivity may also exist and these are generally identified in the sensitivity descriptions within each LCAs assessment sheet. The overall sensitivity level of a LCA is indicative of the relative overall sensitivity level of each LCA. A high sensitivity level does not*

necessarily mean that there is likely to be no capacity for wind energy development within the LCA and conversely a low sensitivity level does not mean that there are no constraints to development" (SPG section 2.3).

Emerging Council Policy

4.72 Changes in planning policy and updates to Development Plans are expected to take place over the coming months and years as Planning Policy Statements, supplementary guidance and existing Development Plans become superseded by emerging Local Development Plans, which will be primarily informed by the SPPS. The SPPS (at paragraph 1.10) sets out transitional arrangements where this is the case to ensure continuity of planning policy and decision making and notes that decisions should be taken in line with the SPPS and relevant PPSs until such time as a plan strategy for the whole council area has been adopted.

4.73 The site falls mostly (11 of the 12 proposed turbines) within Causeway Coast and Glens Council area (CCG) and partly (one of the proposed turbines) within Mid and East Antrim Council area (MEA) but neither Council currently have adopted Local Development Plans in place. The SPPS notes that decisions should continue to be taken in line with the SPPS and relevant PPSs until such time as a Plan Strategy for the whole Council area has been adopted and the timescale for this is, as yet, unknown. Therefore, for the purpose of this ES it is considered that the Draft Plan Strategy is at too early a stage to be afforded weight.

Analysis of the Proposed Developments Effects on Planning Policy

4.74 The Proposed Development's location conforms to the relevant planning policies described in the preceding paragraphs. The proposed turbines and the majority of ancillary development would be located just beyond the western boundary of the Antrim Coast and Glens AONB and would add to the existing and consented Gruig cluster of wind farms already present in this location. There is already an established pattern of wind farm clusters located along the western edge of this AONB and wind farms are also similarly located around the outer edges of AONBs elsewhere in Northern Ireland. The extent of visibility of the Proposed Development from within the AONB boundary would be relatively limited and it would also have limited cumulative effects. With the exception of Lissanoure Registered Park, where visibility of the Proposed Development is likely to be limited by mature demesne woodland, and from where the Proposed Development would appear behind parts of the Gruig cluster, the AONB is the only statutory landscape designation that applies to the Proposed Development.

4.75 The SPPS, which is the overarching policy document, recognises that renewable energy is a beneficial type of development provided it is appropriately located. The SPPS also reiterates the European Landscape Convention's definition of landscape as being a result of both natural and human factors. The SPPS is supportive of renewable energy developments as a means of mitigating against the

effects of climate change but advises that a cautious approach should be taken to taken to siting renewable energy developments in designated landscapes where such developments would result in detrimental effects on the value of these landscapes. None of the proposed turbines would be located within a designated landscape but it would be within the setting of an AONB and, in this respect it is necessary to consider detailed advice set out by the SPG in relation to specific LCAs, which are non-statutory landscape classifications rather than statutory designations and which are therefore analysed in the subsequent section of this LVIA.

4.76 PPS 18 and its Best Practice Guidance (BPG) are generally promotive of wind energy development in appropriate locations and note that the capacity of a landscape to accommodate such development is dependent on the existing character of the landscape. The BPG further states that, given their importance, is it important for society at large to accept wind farms as a feature of the Region for the foreseeable future. The BPG notes that some locations may be highly visible but that this is not necessarily unacceptable. The latter judgement depends on the degree of effect and sensitivity of the receiving landscape. In this respect it is noted that the Proposed Development would form part of an established cluster of existing and consented wind farms and would occupy a lower site than the most prominently located turbines in this cluster. The convex landform of the site ensures that the Proposed Development would be visually contained and views to the north, south and east would often be restricted. The clearest views of the Proposed Development would typically be experienced from the west where it would be visible in the context of broader views.

4.77 The general principles contained within the SPG to PPS 18 are also broadly supportive. The Proposed Development is located in accordance with the majority of the landscape and visual character issues that the SPG notes should be considered for wind energy developments within the Antrim Plateau region. The Proposed Development would also be located in proximity to a number of other existing and consented wind farms and would therefore contribute to an existing cluster, thus minimising cumulative effects across the wider Study Area. It is of a form and layout that reflects the large scale form of the uplands on which it is located as per the SPG's design principles.

Baseline Landscape Character Assessment and Analysis of Effects

The Site and the Study Area

4.78 The Proposed Development would be located on uplands which form the western edge of the Antrim Coast and Glens AONB and overlook the pastoral lowland landscapes in the western part of the Study Area. The Proposed Development would form an extension to the south western side of the Gruig cluster of wind farms. The existing Gruig wind farm would be in closest proximity at a distance of

0.36 km. The current land use is rough upland grazing including below the turbines of the existing wind farms. There are a number of agricultural and wind farm tracks across the site but no public access. The northern side of the Proposed Development is bounded by Altarichard Road and Slieveanorra Forest, a largescale coniferous plantation, is located on the other side of this road. There is a small reservoir, dam and water treatment works at the junction of Altnahinch and Reservoir Road, approximately 2.5 km to the north. To the south the site is physically and visually contained by Skerry Hill. To the west, the land slopes towards a more pastoral upland landscape around the road corridors of Scotch Omerbane, Skerry West, Tullykittagh and Corkey. There are rural properties located along these roads and in the surrounding countryside. Corkey village is located approximately 1.9 km to the west of the Proposed Development. Residential properties and a school are clustered around the junction of Reservoir Road and Corkey Road and there is a quarry and several farms and light industrial premises located along the northern part of Corkey Road on the outskirts of the village. There are small settlements and groups of houses clustered along other parts of the tertiary road network between the western edge of the AONB and the A26, A43 and A44 road corridors including Loughguile to the north and Newtown Crommelin to the south.

4.79 The Study Area for this LVIA extends to a radius of 30 km from the centre of the Proposed Development and is indicated on all map based figures (Figures 4.1 – 4.9 in Section 4, Volume 3 of the ES). In regional terms the Study Area is located within the Antrim Plateau and Glens RLCA and overlooks the Maine and Braidwater River Valleys where the majority of shortlisted viewpoints are located. This regional landscape character area is described in relation to the Proposed Development in Appendix 4.3 from paragraph 4.71. The Proposed Development is located on the western side of Landscape Character Area 118, the Moyle Moorlands and Forest which is defined in the NILCA and the SPG (see paragraph 4.88). Much of the Antrim Coast and Glens AONB is located within the eastern part of the Study Area. The north-western edge of the Study Area is within the Causeway Coast and Glens AONB. The western and southern parts of the Study Area are formed by relatively low lying rural agricultural landscapes surrounding the larger settlements and primary road corridors within the Study Area which provide the setting for these AONBs. There are small villages and settlements throughout this rural lowland landscape. The Long Mountain ridge runs in a north-south direction in the western half of the Study Area and physically contains the opposite side of these lowlands. There is an established cluster of existing wind farms on this ridgeline and a number of towns, villages and smaller settlement clusters on the lower slopes and around the base of this ridgeline including Rasharkin and Dunloy which are located on the east-facing side of the ridge.

4.80 The largest settlements are Ballymena, located approximately 15 - 20 km to the south of the Proposed Development, and Coleraine located on the north-western edge of the Study Area (approximately 25 km away). There are also smaller towns

and villages located along the primary road corridors including: Cullybackey, Cloughmills and Ballymoney located in and around the A26; Armoy and Ballycastle located along the A44; Broughshane, Martinstown and Cargan located around the A43. The western-facing edge of the AONB physically and visually contains the western half of the Study Area and the location of the proposed turbines on this outward-facing side slope, beyond the AONB boundary, means that visibility from within most parts of this AONB is limited. The landscape around Ballymena is pastoral in character and is overlooked by the south western facing edge of the AONB which includes two clusters of wind farms: Elginny Hill and Elliot's Hill. The landscape in this part of the Study Area is also not strongly influenced by that of Proposed Development site.

Landscape Designations

4.81 The European Landscape Convention (2000) requires member states to recognise that all landscapes can have value, and that the perception of value may vary from person-to-person. Statutory designations are one of the criteria used to assess the significance of effects on landscape character and visual amenity in an objective manner. Whilst it is recognised that all landscapes have some subjective importance, particularly for those who live and work in them, or use them for leisure purposes, designation gives an indication of a landscape's 'value to society'. Landscapes are designated by statute, and policies for their protection, use, and management are included in Development Plans, usually following a consultation process (which seeks to reach a consensus opinion, thereby reducing subjectivity). The national, regional and local designations that have been identified as being relevant to the landscape and visual character of this Study Area are described in the following paragraphs and illustrated in Figure 4.1.

4.82 Statutory landscape designations are contained within the current planning policy and guidance which cover the Study Area. The primary designated landscapes within the Study Area are the Antrim Coast and Glens and Causeway Coast and Glens AONBs and policy guidance in relation to this designation is contained within the SPPS, PPS 18 and SPG which are described in the preceding paragraphs. The nature of the AONBs and the effects of the Proposed Development on these are analysed below. Other statutorily designated landscapes within the Study Area are analysed in subsequent paragraphs. As noted previously the draft Local Development Plan Strategy is considered to be at too early a stage for its proposed policies to be afforded weight.

Areas of Outstanding Natural Beauty

4.83 AONBs are the principal landscape conservation designation in Northern Ireland. The designation gives statutory recognition to the high scenic quality and distinctive landscape character of an area and the need to ensure that sensitive conservation measures take place to preserve these qualities alongside measures to allow public access and enjoyment of the area. The needs of local communities, including their

social and economic well-being, is a key management objective for all AONBs, although development deemed to be detrimental to environmental quality is not permitted by the SPPS and supporting PPSs. The landscape around AONBs also performs an important function by providing context, particularly in views to and from the AONB and from key approach routes. This is a key consideration in relation to the landscape and visual effects of the Proposed Development.

4.84 AONBs are regarded as the primary designation to be considered in this LVIA because they are of regional importance. There are two AONBs within the Study Area – the Antrim Coast and Glens and the Causeway Coast and Glens. The boundaries of both are shown on all map based figures that accompany the LVIA (Figures 4.1 – 4.9). The Proposed Development is located to the west of the central part of the Antrim Coast and Glens AONB on a broadly west-facing side slope. This landform ensures that the Proposed Development would be both physically separate and visually distinct from the majority of the AONB. With the exception of some locations within relatively close range, represented by the 4 viewpoint locations in Category C, there are very few parts of the AONB that would experience effects on landscape or visual character.

4.85 The Causeway Coast and Glens AONB is located approximately 22 km – 30 km to the north of the Proposed Development and is unlikely to experience any significant effects due to this distance. However, because this AONB contains several of Northern Ireland's primary visitor attractions (including for example, the Giant's Causeway) a selection of 3 viewpoints (Category E) have been shortlisted to analyse and illustrate the potential nature of visual effects. At this distance any effects on landscape character would be negligible.

Other Statutorily Designated Landscapes in the Study Area

Register of Historic Parks, Gardens and Demesnes

4.86 The Register identifies sites that are considered to be of exceptional importance within Northern Ireland, which have historic significance, and which may also contribute to local landscape character. It is maintained by NIEA Built Heritage. Inclusion on the Register affords sites protection through the SPPS and Planning Policy Statement 6 (PPS6)[5] which requires NIEA to make comment on the protection of such sites as part of the planning consultation process. The SPPS states that permission would not be granted for development that would harm the overall character of site's integrity, overall quality or setting and its contribution to local landscape character should be maintained where possible.

4.87 There are a large number of registered sites located within the Study Area particularly on the edge of settlements. However, none are likely to have views of the Proposed Development due to screening factors such as surrounding built development, high levels of tree cover and flat topography in low lying areas.

[5] Department of the Environment (March 1999) 'Planning Policy Statement 6: Planning, Archaeology and the Built Environment'

Only Lissanoure Castle is located within the ZTV but it is a semi-private estate largely surrounded by mature woodland. Public access is not freely available and views are likely to be restricted from within the demesne. For these reasons, Registered Parks, Gardens and Demesnes are not considered further in this LVIA.

Non-Statutory Landscape Classifications

The Northern Ireland Landscape Character Assessment

4.88 The NILCA classifies the landscape of Northern Ireland into six broad regions and 130 smaller areas of distinct and separate character termed Landscape Character Areas (LCAs). The Proposed Development is located within the Antrim Plateau region and LCA 118 Moyle Moorlands and Forest. The SPG provides further broad guidance on these regions and LCAs including the overall sensitivity of LCAs specifically in relation to wind energy developments. The descriptions of landscape and visual character in this LVIA are based on the SPG which itself reiterates information contained within the NILCA.

4.89 The SPG identifies nine broad landscape and visual character issues to be considered in relation to wind farm development in the Antrim Plateau region[6] only three of which are considered to be of relevance to this LVIA. All nine are summarised below with those of relevance listed first:

- Of particular relevance to this LVIA are those related to cumulative effects including the size of wind farm clusters and the compatibility of small and large turbines when viewed alongside each other. The Proposed Development would join a cluster of existing and consented wind farms and single turbines and is therefore likely to have significant effects in some instances although it is noted that there is already a considerable difference in the overall heights and positioning of turbines within the Gruig cluster and single turbines located within 5 km of the Proposed Development. Consideration of these effects is an integral part of the analysis of cumulative visual effects included later in this LVIA. Whilst the Proposed Development would increase the overall difference in heights consideration is also given to the relative positioning and prominence of different wind farms and turbines within the cluster and the wider landscape and also the general trend towards larger turbines which is not accounted for in the SPG. The majority of representative viewpoints in this LVIA also illustrate the nature of visual effects in this respect;
- The SPG simply states that cluster sizes should be appropriate to ensure than wind energy developments do not become overbearing or dominant in the landscape and that the compatibility of small and larger newer turbines should be carefully considered. In general the SPG notes that

[6] section 3.3.1 of the SPG

separation distances ranging from 6 km for smaller sites in landscapes with some enclosure to 12 km for larger sites in open exposed landscapes are desirable to prevent the landscape becoming dominated by wind farms and to reduce intervisibility[7]. Separation distances between the established Gruig, Long Mountain and Elginny Hill clusters range from approximately 9.2 km – 10.8 km at present and the three clusters are frequently clearly intervisible with each other. The Proposed Development would decrease these distances to 10.3 km and 7.9 km respectively which would still be within the acceptable range recommended in the SPG;

- Also of relevance to this LVIA is the SPG's recommendation to consider cumulative effects caused by simultaneous, successive or sequential views of more than one wind energy development. There are a number of other wind farms throughout the Study Area and the Proposed Development would, in some instances, be visible in conjunction with these. These include a further two clusters at Elginny Hill and Elliot's Hill located along the western edges of the AONB between approximately 8 km and 25 km to the south of the Proposed Development and a cluster of existing wind farms on Long Mountain Ridge approximately 10 km to the west. Cumulative effects are assessed via the detailed analysis of representative viewpoints (from paragraph 4.125) and in relation to cumulative landscape and visual effects (from paragraph 4.174);
- The SPG notes that long distance views from transport corridors and tourist routes on approaches to the AONBs from the south and west are also an issue for consideration. The ZTVs illustrate potential visibility of the Proposed Development from these parts of the Study Area and Category D Viewpoints (described from paragraph 4.158) have been selected to address this particular issue;
- Impacts when seen in conjunction with electricity transmission lines. However, these are not a prominent element within this Study Area and this is not considered to be a significant consideration in relation to the Proposed Development;
- Impacts on skylines along the bold western edge of the Plateau and the escarpment above Belfast Lough. The Proposed Development would not affect the latter but would be located along the western edge of the Plateau, albeit at a lower elevation than the adjacent Corkey and Gruig wind farms. It would have some cumulative effects on the skyline, the extent of which is further considered in relation to the assessment of visual effects;

[7] Section 3.2 of the SPG

- Impacts on the settings of a number of specific settlements are noted in the SPG including Newtownabbey, Ballyclare, Antrim and Ballymena. Aside from Ballymena none of the settlements mentioned in the SPG's guidance are located within the Study Area for this LVIA and no clear views were identified in proximity to Ballymena during the viewpoint selection process. Therefore, this is not deemed to be an issue of relevance to this LVIA.

4.90 General principles for the layout, siting and design of wind farms are provided in section 3 of the SPG (Tables 3 and 4). Of particular relevance to the Proposed Development are:

- Adequate and appropriate spacing depends on landscape character, including pattern and rhythm, and the degree of intervisibility between wind farms. It is necessary to maintain areas of undeveloped landscape between wind farms in order to prevent a landscape becoming dominated by them but in areas of appropriate character it might be possible to locate wind farms closer together if they are seen as a cluster. The Proposed Development would form part of the Gruig cluster and would maintain separation distances of between approximately 8 – 25 km from other clusters of wind farms in the Study Area;
- The SPG notes that small turbine groupings are likely to fit best in small scale and more intricate landscapes whereas elevated landscapes with a strong horizontal form and of a larger scale, such as the Antrim Plateau are suitable for larger turbines and turbine groupings because they tend to diminish perceived scale. Complex and varied landforms may experience undesirable flattening effects from the latter. The Proposed Development is considered to be in conformance with this principle because it is located on a simple and expansive upland area below higher parts of the Moyle Moorland uplands. The turbine layout reflects the broad undulations of the underlying topography and rising ground directly to the north, south and east serves to restrict visibility from these directions;
- The SPG also notes that the settings of distinctive landscape features such as dramatic landform features like cliffs and cultural features like historic parks may be especially sensitive. The Proposed Development is not located in close proximity to any such features;
- Furthermore, the SPG notes that siting turbines on prominent summits should be avoided in favour of less prominent side slopes, benches and gentle undulations. The broader the upland the greater the SPG notes its capacity for wind energy development is likely to be. Simple, rounded and generally horizontal upland landform is more able to accommodate larger turbine groupings but convex landform may also offer some screening and reduce visible turbine heights. The Proposed Development is located in conformance with both of these principles. In closer range

views its position on a convex site between two taller hills is more obvious and these hills – Slievenahanaghan and Skerry Hill - would visually and physically contain the wind farm, particularly in views from the north and south. When the Proposed Development is viewed from the west its position as part of the extensive and continuous range of uplands which form the west-facing side of LCA 118 becomes more obvious and does its lower positioning in comparison with other wind farms in the Gruig cluster and separation distances from other wind farms and clusters in the surrounding landscape;

- Upland areas characterised by open moorland are usually more sensitive than areas of improved grass or forestry and sites that can utilise existing roads or tracks are preferable. It is also noted that the SPG repeatedly refers to large scale commercial forestry as being detrimental to landscape character and specifically notes that locations within or close to forestry plantations are the least sensitive parts of the Moyle Moorlands and Forests LCA. The Proposed Development would be located in proximity to a large coniferous plantation at Slieveannorra Forest, a waste water treatment works, and three existing wind farms. It would utilise the site entrance and some of the access tracks that are already in place for Gruig wind farm and is therefore deemed to be accordance with this principle in the SPG.

4.91 There are twenty five Landscape Character Areas (LCAs) within the Study Area. They are illustrated on Figure 4.2. The Proposed Development is located within LCA 118 Moyle Moorlands and Forest and would therefore have a direct physical effect on part of this LCA, which is described in detail below. A summary of other relevant LCAs is provided in Technical Appendix 4.3.

Landscape Character Area 118: Moyle Moorlands and Forest

4.92 The SPG describes both the physical landscape characteristics and visual character elements of LCA 118 within which the Proposed Development is located and also defines the LCAs overall sensitivity to wind energy and its capacity to accommodate turbines. Information from the SPG of relevance to the Proposed Development is summarised and analysed in the following paragraphs.

The SPG's description of Key Landscape and Visual Characteristics and Values

4.93 This LCA is described as a large scale, open and expansive rounded upland area rising to approximately 550 m AOD at its highest point and forming the backdrop to more intimate glens. Almost all of this LCA is located within the Antrim Coast and Glens AONB and the LCA forms much of the northern part of the AONB. The glens to which it forms a backdrop are located around the coastal areas of the AONB to the north and east and do not make a substantial contribution to the physical landscape character of the LCA in proximity to the Proposed Development. The latter would be located near the south-western edge of the LCA and not within the

AONB. However, the western side of the LCA is described as being highly visible from lower lying land to the west, i.e. the pastoral lowlands defined primarily by LCA 59 Cullybackey and Cloughmills Drumlins, which is also where a large proportion of the shortlisted viewpoints for this LVIA are located.

4.94 Land cover in this LCA comprises several extensive areas of coniferous forestry, blanket bog with some evidence of turbary, and swathes of rough unimproved grassland and heather. There are smaller broadleaved woodlands and pastoral fields on some of the upland fringes which are divided by stone walls and gorse banks. Settlement is confined to lower moorland edges, particularly around the south-western boundaries in proximity to the Proposed Development. The villages of Corkey and Loughguile and smaller clusters of houses along some parts of the Corkey Road are located within LCA 118 but the majority of settlement is located in the adjacent pastoral lowland LCAs.

4.95 The SPG notes several man-made influences on the landscape character including coniferous plantations, radio masts, wind turbines, quarries and several public roads. Many of these are evident in the landscape in close proximity to the Proposed Development. Part of the A2 Causeway Coast scenic drive crosses the north eastern part of this LCA but roads in proximity to the Proposed Development form part of the tertiary network of rural road on the west-facing side slopes. The Orra and Glendun scenic drives cross the LCA from west to east, passing within 8.5 km of the Proposed Development at its nearest visible point (see Viewpoint 6, Category B viewpoints starting at paragraph 4.141). However, the vast majority of these scenic routes, and also much of the LCA as a whole, falls outwith the ZTV. Views of the west-facing side of this LCA are more common from the lowland landscape to the west which is framed by these uplands and where there are a number of busy secondary road corridors, namely the A26, A42 and A44). Views in the direction of the Proposed Development from upland parts of LCA 118 tend to either be constrained by surrounding uplands or be orientated along the glens located to the north and east in a coastal direction.

4.96 The SPF describes this LCA as being popular for outdoor recreation. The Ulster Way and Moyle Way cross the central uplands, including the summit of Trostan which is located approximately 4.6 km to the south east of the Proposed Development (see Viewpoint 13, Category C viewpoints starting at paragraph 4.150). However, many parts of these walking routes are visually constrained and characterised by coniferous forestry and also fall outwith the ZTV for the Proposed Development.

4.97 The SPG describes this LCA as being in excellent condition except where peat cutting and forestry are present. Both of these land uses are characteristic of the landscape in immediate proximity to the Proposed Development.

The SPG's description of Landscape Sensitivity to the Proposed Development

4.98 Overall the SPG regards this LCA as being of high to medium sensitivity. The central parts of the plateau and locations in close proximity to forestry are described as being the least sensitive areas. The former being less sensitive due to

their simple and often convex landform which lends some topographic screening. The latter being locations where forestry and access tracks have already had a degrading effect on landscape character and where further development might be accommodated in order to minimise effects on more sensitive locations elsewhere. The Proposed Development would be located both in close proximity to forestry and on a site with convex landform which provides a relatively high degree of visual containment to the north, south and east.

The SPG's description of Key Location, Siting, Layout and Design Considerations

4.99 At the time of the SPGs publication the 10-turbine wind farm at Corkey was operational and a further 10 turbine wind farm at Gruig had been consented with a distance of approximately 0.51 km between the nearest turbines in these two wind farms. At this point the SPG noted that cumulative effects and separation distances between wind farm developments should be carefully considered to avoid significant effects on key views from lowland landscapes to the west as well as from adjacent glens to the north, east and south and the wild character of the LCA as a whole. The SPG also notes that wind farm developments should be set back from steep upland and plateau edges in order to contain visibility. On Long Mountain Ridge (LCA 58) the SPG noted that a number of wind farms had been consented and should be considered as a cluster. Since publication of the SPG, Gruig, Corkey Extension and Altaveedan wind farms and a number of single turbines have also been constructed along the west-facing side of LCA 118 and the re-powering of Corkey wind farm with 5 larger turbines (137 m blade tip height) has been consented. Several wind farms on Long Mountain and Elginny Hill have also been constructed these all appear as coherent clusters when viewed from the opposite uplands and the lowland pastoral landscapes which lie between.

4.100 It is noted that the Proposed Development is not located within part of LCA 118 which could be regarded as having wild character because it is in relatively close proximity to areas of settlement, roads, quarries, forestry, other wind farms and other man-made influences. It would occupy a lower position than the other wind farms in Gruig cluster, particularly Corkey/ Corkey Re-Power which occupies a prominent skyline location. Corkey/ Corkey Re-Power wind farms would be clearly visible from more locations within the AONB and when travelling through the lowland landscapes to the west. In latter instances these wind farms would be viewed in conjunction with other wind farms in the Gruig cluster and also in the context of a wider pattern of wind farm clusters along other parts of this range of uplands and those on Long Mountain ridge. Separation distances of approximately 10.8 km currently existing between the nearest turbines in the Gruig and Long Mountain clusters, and 9.2 km between Gruig and Elginny Hill clusters. The Proposed Development would decrease these distances to 10.3 km and 7.9 km respectively which, as previously noted in paragraph 4.89, would still be within the acceptable range recommended in the SPG.

4.101 It is noted that the general principles contained within the SPG are broadly supportive of wind energy development in LCA 118 and the Proposed Development is also located in accordance with the majority of the landscape and visual character issues that the SPG notes should be considered for wind energy developments within the Antrim Plateau region. It is also noted that there are a number of LCAs which combine to form the Antrim Coast and Glens AONB and these are assessed by the SPG as being of much the same or higher sensitivity to wind energy development as LCA 118 within which the Proposed Development would be located. Many upland parts of these LCAs are described as being theoretically suitable locations. It is also noted that the Elginny Hill cluster, which is located in the adjoining LCA 117 Central Ballymena Glens to the south of LCA 118, is specifically identified by the SPG as being in a particularly highly sensitive part of this LCA but has nevertheless been subject to planning consents. In contrast, the Proposed Development is located within part of LCA 118 which the SPG notes as being of least sensitivity.

4.102 There are 17 LCAs within the Study Area which have not been assessed in detail because, following the Baseline Assessment and site survey, it is concluded that they are unlikely to be significantly affected by the Proposed Development. In particular, LCAs and SCAs on the periphery of the Study Area and the ZTV, and those which do not contain viewpoints have not been subject to a detailed assessment. These LCAs are also listed in Appendix 4.3 and illustrated in Figure 4.2. The ZTVs are illustrated in Figures 4.5 – 4.9.

Other Non-Statutory Landscape and Visual Classifications

4.103 A review of other relevant non-statutory landscape and visual classifications has also been carried out as part of this LVIA. These classifications identify landscapes or elements within the landscape which have no statutory protection but that are nevertheless recognised as having value by virtue of being marketed as visual attractions or identified in non-statutory documentation within the public realm. These classifications are illustrated on Figure 4.1. Information is drawn from a number of websites[8] providing relevant descriptive information which is used in conjunction with Ordnance Survey maps to plot the locations of visitor attractions. These have also been used to aid the selection of viewpoints.

Rights of Way, Cycle Routes, and Scenic Drives

4.104 The Ulster Way is a 1000 km long walking route which covers the most scenic parts of Ulster. It is divided into 'Quality Sections', which provide largely off-road way-marked access for walkers in highly scenic areas, and 'Link Sections', which are mainly along roads and are not generally way-marked. There are Quality sections of the Ulster Way extending from north to south across the eastern side of the Study Area within the Antrim Coast and Glens AONB and across the northern edge of

[8] www.walkni.com; www.visitcausewaycoastandglens.com; www.causewaycoastandglens.gov.uk; www.cycleni.com; www.sustrans.org.uk

the Study Area within the Causeway Coast AONB. However, with the exception of Viewpoint 13 near the summit of Trostan and Viewpoint 14 on the summit of Slemish, very few locations on public footpaths fall within the ZTV for the Proposed Development. The elevated section between Knockdhu and Glenarm would have partial views of upper parts of some turbines in the Proposed Development but from distances in excess of 20 km. The Proposed Development is unlikely to be an easily discernible feature from these distances and in the context of the panoramic views that are available in all directions from this section of the Ulster Way. Other parts of the Ulster Way are shared with, or linked to, shorter locally classified routes (further described in various online publications listed in footnote 8). Although there would be views of other wind farms within the Study Area from some footpaths, the majority are also located outwith the ZTV for the Proposed Development.

4.105 The National Cycle Network provides cyclists with marked scenic routes across the province. Within this Study Area there are routes linking Ballymena with Glenarm, along much of the A2 Coast Road in the northern and eastern edges of the Study Area and on the western side of Long Mountain, in the west of the Study Area. The majority of the cycle network is located outwith the ZTV. However, Viewpoint 24 near Ballymoney would reflect the nature of long distance views from a relatively short section of the tertiary road network which is part of the cycle network and is further described in Category F viewpoints from paragraph 4.167.

4.106 The A2 Coast Road which links Belfast with the Glens of Antrim is considered to be both one of the most scenic driving routes in the world and one of Northern Ireland's top visitor attractions. Visual receptors located along this route are therefore considered to be highly sensitive. However, there is an absence of views of the Proposed Development from the majority of the coastal landscape. Rising cliffs and promontories tend to screen all views beyond the coastal hinterland from this part of the Study Area and the sheer distance between the coast and the Proposed Development minimises its scale and prominence from any elevated locations where it would be visible (refer to Category E Viewpoints from paragraph 4.163 which are located in elevated parts of the Causeway Coast AONB where long distance views would be available). There are also scenic driving routes between Magherahoney near Loughguile – the Orra Scenic Drive - and through Glendun both located in relatively close proximity to the north of the Proposed Development. There are no views from the latter because they are screened by Slieveanorra Forest and hills. However, there are views of the Proposed Development from the start of the Orra Scenic Drive on Altarichard Road before it enters the AONB which is included as Viewpoint 6 for this reason (Category B viewpoints described from paragraph 4.141).

Other Visitor Attractions and Destinations

4.107 There are a number of other landscape-based visitor attractions and destinations in this Study Area which were identified as part of the baseline assessment including

coastal villages and towns, scenic driving routes and walks and registered demesne landscapes (illustrated on Figure 4.1). The majority are located outwith the ZTV and have not been subject to further analysis for this reason. The key attractions that fall within the ZTV are noted in the preceding paragraphs.

Summary of Landscape Effects

4.108 The Proposed Development is located within LCA 118 Moyle Moorlands and Forests, much of which is of outstanding value due to its excellent condition and location within the Antrim Coast and Glens AONB. The Proposed Development would be located near the south western edge of the LCA on a lower, west-facing slope and would have no discernible physical effect on the majority of the LCA or its key characteristics – i.e. broad expansive uplands located within the AONB which form a backdrop to coastal glens in the north and east of the AONB. The landscape value in this part of the LCA is deemed to be high rather than outstanding and is noted by the SPG as being the least sensitive part of the LCA due to the presence of forestry, other manmade features and the convex nature of the landform on the site of the Proposed Development. It would occupy part of the west-facing side of the LCA which is not within the AONB but which does provide the setting for lowland pastoral landscapes to the west – in the central section of the Study Area. There are a number of wind farm clusters and single turbines located along this side of the LCA and also along Long Mountain Ridge which already contribute to the landscape setting to the west and to the repeating pattern of wind farms along the western edge of both CLA 118 and the AONB. Single turbines are a common feature in the pastoral lowlands.

4.109 Whilst the Proposed Development would have a direct and significant physical effect on the part of the Study Area and LCA 118 within which it is located, the magnitude of change would be medium because the Proposed Development is located on a convex upland area between higher ground to the north and south which the SPG notes as a factor that may reduce landscape and visual sensitivity to wind energy development. The higher ground to the north is characterised by a number of existing wind farms (the Gruig cluster) and the higher ground to the south physically contains the site of the Proposed Development and would prevent it from being significantly visible in close range views located to the south. The Proposed Development would be in close proximity to Slieveannorra Forest and forestry is noted by the SPG as being a particularly detractive feature which lessens the sensitivity of parts of this LCA where it occurs. The physical character if the landscape surrounding the Proposed Development is also defined by a range of other man-made influence, including existing wind farm access tracks which the SPG notes as being a factor in considering a location suitable for wind energy development. For these reasons the physical landscape character of LCA 118 is deemed to be sufficiently robust and capable of absorbing some degree of change without affecting its overall landscape character and the overall effects on the character of LCA 118 are not deemed to be significant.

4.110 The Proposed Development may have indirect effects on the landscape character of some other parts of the Study Area amounting to small areas within seven other LCAs which are in proximity to it, or which contain viewpoints used in this LVIA. However, with the exception of LCAs 59 and 117, which form the central pastoral lowlands directly to the south and west of the Proposed Development, the majority of these LCAs are located beyond 10 – 15 km away and are unlikely to experience any discernible effects on their physical landscape character resulting from the Proposed Development. These LCAs are listed in Appendix 4.3 Table 4.3.1 and illustrated in Figure 4.2. Visual effects from locations within these LCAs are analysed in relation to visual rather than physical landscape character effects.

4.111 In relation to these other LCAs the magnitude of effects resulting from the Proposed Development would range from medium to negligible. Sensitivity would range from high to negligible depending on whether the LCAs would be located in relatively close proximity to the Proposed Development or at a greater distance and to what extent existing and consented wind farms define the physical landscape character of these LCAs and their settings (see Technical Appendix 4.3 table 4.3.1). However, in no instances are the physical effects on landscape character deemed to be significant.

Baseline Visual Character Assessment and Analysis of Effects

Visual Character of the Study Area

4.112 The visual characteristics of the Study Area are intertwined with the landscape characteristics described by the various policy and guidance documents and other publications which provide baseline information about the Study Area. Therefore, many visual characteristics have already been referred to in the previous section of this LVIA and are not repeated. However, they are summarised in relation to their visual as opposed to physical expressions.

4.113 The Proposed Development is located largely beyond the AONB and would not be visible from the majority of either of the AONBs which fall within the Study Area. However, because these are nationally important designations viewpoints located within both AONBs are considered in the LVIA. Category C includes 4 viewpoints within the Antrim Coast and Glens AONB (described in detail from paragraph 4.150). Viewpoints 11 and 12 are in closest proximity and clearly illustrate the convex nature of the site. Man-made influences are also visible in proximity to all Category C viewpoints including the Gruig cluster of wind farms, Altnahinch reservoir, extensive coniferous forestry and the mast on the summit of Slieveanorra. Viewpoint 14 also illustrates the character of the pastoral lowland landscapes between the upland areas which are strongly defined by farming practices. Category E includes 3 viewpoints located on elevated parts of the Causeway Coast AONB which would experience long range views of the Proposed Development in the context of expansive views incorporating much of the west-facing edge of the

Antrim Coast and Glens AONB, the coastal landscape to the north and Long Mountain ridge to the west.

4.114 Long Mountain ridge runs in a north-south direction in the western half of the Study Area and physically contains the opposite side of the pastoral lowlands which are located in the centre of the Study Area and from where the majority of viewpoints in this LVIA are located. There are clear views from Long Mountain ridge to the range of uplands on which the Proposed Development is located and vice versa. This ridge also prevents clear or obvious views of the Proposed Development from the western side of the Study Area beyond a distance of approximately 15 km. Category B viewpoints include locations on Long Mountain ridge, the pastoral lowlands in between and from southern parts of the Antrim Plateau.

4.115 The Gruig cluster is currently spread over part an area of the uplands along the west-facing edge of LCA 118. Although the SPG notes that siting turbines on prominent summits should be avoided in favour of less prominent side slopes, benches and gentle undulations it is noted that Corkey and Corkey Re-Power are prominently located across the summit of Slievenahanaghan whereas Gruig, Corkey Extension and Altaveedan are positioned on side slopes. The Proposed Development would be positioned on a convex site located between the taller Slievenahanaghan and Skerry Hills and, in closer range views, the visual containment this siting provides is more obvious. Whereas when the Proposed Development is viewed from the west its position as part of the extensive and continuous range of uplands which form the west-facing side of LCA 118 becomes more obvious and also its lower positioning in comparison with other wind farms in the Gruig cluster and visual separation from other wind farms and clusters in the surrounding landscape. Category D viewpoints clearly illustrate these types of views.

The Zone of Theoretical Visibility

4.116 ZTV diagrams have been produced at radii of 15 km and 30 km to illustrate visibility for both the maximum blade-tip and hub-height dimensions being considered for the Proposed Development (Figures 4.6 and 4.7) although the latter is for illustrative purposes only and the application is based on overall tip height only. Blade tip visibility ZTVs illustrate any parts of the Study Area where at least one blade tip would be theoretically visible without taking account of screening provided by contour variations within 50 m intervals or land cover elements such as trees and hedgerows. These show the highest potential levels of theoretical visibility but not necessarily the most realistic because blade tips are counted even where they protrude only a small amount above a skyline and, in practice, may not be easily discernible. This type of visibility will also change as the turbines rotate. Hub height ZTV diagrams are more realistic because they represent more constant levels of visibility by illustrating theoretical visibility of all points of the turbines to the hub/ nacelle, and therefore include the upper parts of the turbine blades as a minimum. Reverse ZTVs are included (Figure 4.8) to clearly illustrate areas where

there would be no theoretical blade tip or hub height visibility of the Proposed Development.

4.117 The ZTV diagrams are the starting point for the baseline visual assessment and were also used to assist the selection of PVPs. They illustrate the theoretical visibility and non-visibility of the Proposed Development as a standalone wind farm, unrelated to any others in the Study Area. The 30 km ZTVs clearly illustrate how the ranges of uplands which form the Antrim Coast and Glens AONB and Long Mountain Ridge effectively contain visibility within the central part of the Study Area and prevent visibility from the majority of the AONB to the east and the landscape beyond Long Mountain Ridge to the west. Some long range visibility of the Proposed Development is indicated towards the western edge of the Study Area but in practice this would be substantially reduced by distance from the Proposed Development and the high levels of vegetation cover in these lowland landscapes. The 15 km ZTVs confirm the findings of the iterative design process that the parts of the AONB shown to experience theoretical visibility would often be located in uplands which are not easily or publicly accessible or where views would, in practice, be screened by forestry.

4.118 Within a 15 km radius from the Proposed Development 49.75% the Study Area is likely to have some theoretical hub height visibility of the Proposed Development and approximately half of this (26.92 %) would be of 10 - 12 turbines, i.e. there would be visibility of the Proposed Development in its entirety or near entirety (refer to Figure 4.6, page 1 of 2). This ZTV diagram illustrates how the majority of this type of visibility would be located within the pastoral lowlands and road corridors to the west which are overlooked by the uplands on which the Proposed Development would be located.

4.119 There is relatively limited visibility indicated within the AONBs, in the eastern side of the Study Area and areas of visual shadow created by Slievenahanaghan and Skerry Hill are clearly evident directly to the north and south of the Proposed Development. Viable viewpoints located within the Antrim Coast and Glens AONB were only identified within approximately 5 km to the east of the Proposed Development (Viewpoints 11 – 13) and on elevated ground to the south (Viewpoints 9 and 14). Longer range views were identified in the Causeway Coast AONB (Category E Viewpoints 20 – 22) although all of these would be located in excess of 23 km from the Proposed Development where it would be unlikely to be easily discernible. As noted previously viewpoints in this AONB are included because it is the most valued landscape in the Study Area and likely contain visual receptors of the highest sensitivity. Within a 15 km radius from the Proposed Development overall visibility would increase to 57.48 % if blade tip calculations are used and visibility of 10-12 turbines would form the majority of this visibility (42.58 %) (refer to Figure 4.6, page 2 of 2).

4.120 Within a 30 km radius from the Proposed Development hub height visibility would reduce to 34.29 % of the Study Area with only 21.46 % representing visibility of 10 -

12 turbines (refer to Figure 4.7, page 1 of 2). Visibility in all directions, but particularly within the AONB to the south and east, would become patchier beyond 15 km. Within a 30 km radius from the Proposed Development overall visibility would be 40.77 % if blade tip height visibility calculations are used with 32.09 % of this being visibility of 10-12 turbines (refer to Figure 4.7, page 2 of 2).

4.121 Figure 4.7 page 1 of 2 indicates that theoretical hub height visibility of the Proposed Development would occur across just 13.95 % of the two AONBs combined. Figure 4.7 page 2 of 2 indicates that theoretical blade tip height visibility would occur across just 21.37 % of the AONBs combined. The Causeway Coast and Glens AONB, which is the smaller of the two AONBs located on the northern edge of the Study Area, would experience proportionally more visibility but this would occur at distances in excess of approximately 23 km and would, in practice, be negligible. This is further illustrated by Viewpoints 20 – 21 (from paragraph 4.163). The Antrim Coast and Glens AONB covers a much larger area, the majority of which would experience no theoretical visibility of the Proposed Development, and many of the areas indicated as experiencing theoretical visibility would not be publicly accessible, would be located within areas of forestry or would also be located in excess of 20 km where the Proposed Development is unlikely to be an easily discernible feature of views.

4.122 The reverse ZTVs (Figure 4.8) clearly illustrate the same points made above. It is noted that all the ZTV diagrams illustrate theoretical visibility and that levels of visibility would be further reduced in reality by topographical variations and land cover elements. Detailed site assessment indicates that tree and hedgerow cover along parts of the road network, including parts that are in close proximity to the Proposed Development and in the pastoral landscape around the base of Slemish and Long Mountain Ridge would often prevent clear views in the direction of the Proposed Development. Urban settlement, vegetation and localised variations in the underlying topography would also screen views in proximity to Ballymena.

Table 4.1 - Zone of Theoretical Visibility of the Proposed Development

ZTV Diagram	No. of turbines theoretically visible	% of Study Area with visibility	
15 km hub height **Figure 4.6** **(page 1/ 2)**	**1 - 3**	**6.99 %**	**Total % of 15 km Study Area with theoretical hub height visibility = 49.75 %**
	4 - 6	**7.52 %**	
	7 - 9	**8.32 %**	
	10 - 12	**26.92 %**	
	0 turbines	**50.25 %**	
15 km blade tip	**1 - 3**	**4.99 %**	**Total % of 15 km Study**

ZTV Diagram	No. of turbines theoretically visible	% of Study Area with visibility	
Figure 4.6 (page 2/2)	4 - 6	4.07 %	Area with theoretical blade tip visibility = 57.48 %
	7 - 9	5.84 %	
	10 - 12	42.58 %	
Reverse blade tip Figure 4.8 (page 1/2)	0 turbines	42.52 %	
30 km hub height Figure 4.7 (page 1/ 2)	1 - 3	3.59 %	Total % of 30 km Study Area with theoretical hub height visibility = 34.29 % Percentage of total AONB with visibility = 13.95 %
	4 - 6	3.16%	
	7 - 9	6.08 %	
	10 - 12	21.46 %	
	0 turbines	65.71 %	
30 km blade tip Figure 4.7 (page 2/2)	1 - 3	3.45 %	Total % of 30 km Study Area with theoretical blade tip visibility = 40.77 % Percentage of total AONB with visibility = 21.37 %
	4 - 6	2.23 %	
	7 - 9	3.00 %	
	10 - 12	32.09 %	
Reverse blade tip Figure 4.8 (page 2/2)	0 turbines	59.23 %	

Viewpoint Selection Process

4.123 The Baseline Assessment identified parts of the Study Area most likely to contain key visual receptors, the potential sensitivity of either the location and / or the visual receptors likely to be present and also those areas likely to experience visibility of the Proposed Development due to the theoretical levels of visibility indicated by the ZTV diagrams. This resulted in the selection of PVPs including:

- Residential properties and the rural road network in close proximity to the Proposed Development where viewers may either be static or obtain views

for prolonged periods of time and where the Proposed Development may form a key element in these views;

- Areas of settlement where viewers may also be static and obtain views for long periods of time and where the landscape in proximity to the Proposed Development is likely to form a key element within the landscape setting for these settlements;
- Locations from public rights of way, scenic drives and cycling routes where viewers are likely to be present for the primary purpose of appreciating scenic views. Such locations may include: the Ulster Way network of waymarked trails across the Antrim Plateau; the National Cycle Network; the upland section of the A2 which is designated as the Causeway Coast scenic drive;
- Primary routes taking visitors to and from the two AONBs which transect the central section of the Study Area where the ZTV diagrams indicate the majority of theoretical visibility would occur;
- Only a limited number of locations within the two AONBs were identified. However, they attract visitors by virtue of being statutorily designated and nationally recognised high quality landscapes and contain key visitor amenity sites. Visual receptors within AONBs are likely to be highly sensitive and occur in relatively high numbers;
- Locations from which the Proposed Development would be seen within the wider landscape context of the Study Area, i.e. other upland parts of the Antrim Plateau, Long Mountain and the Belfast Hills from where there are views across the pastoral lowlands in the centre of the Study Area and views into the wider landscape including areas beyond the Study Area such as Lough Neagh and the Sperrins.

4.124 These locations guided the selection of Provisional Viewpoints (PVPs). The initial desk-based selection of PVPs, including the selection criteria used, is described in Technical Appendix 4.4 and illustrated on Figure 4.3. Sixty PVP locations were identified and analysed through the production of a preliminary ZTV diagram. Draft wirelines for all these locations were prepared and checked by site visits to confirm the nature of receptors and potential visibility of the Proposed Development. These draft wirelines were used as working documents and are not reproduced in this LVIA but they were used to form a detailed understanding of the nature of visibility throughout the Study Area and to inform the selection or non-selection of PVPs as shortlisted viewpoints.

Final Viewpoint Selection

4.125 Following the initial assessment described above 26 Viewpoints were shortlisted for detailed analysis in the LVIA. They include a proportionate number of locations which are intended to be representative of typically occurring views within the Study Area, views experienced by key visual receptors, and also views from specific

locations that merit inclusion in the LVIA by virtue of their contribution to the key landscape and visual qualities of the Study Area. The majority are located in the lowland pastoral landscape to the west and within approximately 10 km of the Proposed Development. Some viewpoints beyond 10 km occupy slightly more elevated positions looking back across the central lowland landscape but there are few clear views located within the AONBs and none were identified in coastal locations. The locations of the final shortlisted viewpoints reflect the topography, land cover in the Study Area and the location on the Proposed Development in relation to the baseline landscape character, i.e. the ZTV. PVPs were not usually shortlisted if they were found to provide no actual view of the Proposed Development despite visibility being indicated by the ZTV. The reasons for this absence of visibility usually arose from differences between theoretical and actual visibility which is explained in Technical Appendix 4.2 (ES Volume 2). Other PVPs were not shortlisted if a more typical view was demonstrated elsewhere, where no safe stopping place was available to take photographs or where the viewpoint location would not be easily accessible to the public.

4.126 A detailed description of the methodology for viewpoint selection is included in Technical Appendix 4.2 starting at paragraph 4.23. A summary analysis of all PVP locations and the rationale for shortlisting particular viewpoints is provided in Technical Appendix 4.4, Table 4.4.1. The location of shortlisted viewpoints is indicated on all map-based figures which accompany this LVIA chapter (Figures 4.1 - 4.9). Wirelines and photomontages of each viewpoint have also have been presented in Figures 4.10 - 4.31. These are intended to assist in the understanding of, but not to replace, the detailed written description of effects on viewpoints which are contained in subsequent paragraphs of this chapter. It is important to recognise the limitations of visualisations and this is further described in Technical Appendix 4.2 from paragraph 4.41. They should not be relied upon as the primary means to determine visual effects and it is expected that all locations will be visited by the decision-maker and any interested third parties in order to be fully understood.

4.127 In the analysis of visual effects cognisance is also taken of the SPPS and PPS 18: BPG. These policy and guidance documents note that whilst wind farms are, by their nature, highly visible and are likely to be relatively prominent at distances of up to 5 km, this does not necessarily preclude them from being acceptable features. The choice of viewpoints is intended to represent the manner in which the Proposed Development is experienced when travelling around the Study Area and not just from locations in close proximity where it may naturally be expected to be clearly visible. In particular, a series of viewpoints have been selected to represent longer range views from the Causeway Coast AONB in recognition of its potential sensitivity and also from the south and south-western parts of the Study Area where elevated locations provide visibility of the Proposed Development in the context of much wider views across the Study Area as a whole.

4.128 For ease of analysis the shortlisted viewpoints have been categorised as follows so that the different types of views, receptors, and specific areas they represent can be accurately described and understood without unnecessary repetition:

A. Locations primarily representing views from settlements and rural roads with residential properties within 5 km of the Proposed Development;

B. Locations primarily representing views from settlements and the connecting road network within 5 – 10 km of the proposed Development;

C. Locations primarily representing views from within the Antrim Coast and Glens Area of Outstanding Natural Beauty;

D. Locations primarily representing views from the A26 and A44 road corridors;

E. Locations primarily representing views from the Causeway Coast and Glens Area of Outstanding Natural Beauty;

F. Locations primarily representing views of the Development from the wider Study Area beyond 15 – 20 km.

Category A: Locations primarily representing views from settlements and rural roads with residential properties within 5 km of the Proposed Development

Description of Existing Views

4.129 Category A includes Viewpoints 1 - 5 which are illustrated in Figures 4.10 – 4.14. They have been selected to represent the range of typically occurring views from settlements, rural properties and the tertiary road network within approximately 5 km where the Proposed Development may be expected to be a prominent feature and often clearly visible at relatively close range. Views of this nature occur primarily to the west of the Proposed Development in the lower lying side slopes and pastoral landscapes which are overlooked by the uplands on which the Proposed Development would be located. A number of other PVP locations which have not been shortlisted but which would experience similar types of views include:

- PVP 12 on Tullykittagh Road which is in relatively close proximity to Viewpoint 4 where clearer views are available from the public road network;
- PVPs 15, 16 and 31 located on the upper and lower parts of Skerry West Road either side of PVP 13 (shortlisted as Viewpoint 5). The reasons that these PVPs have not been shortlisted is further described at 4.139 below and in Technical Appendix 4.4.1
- PVP 59 located at the junction of Loughill and Lislaban Roads. This specific location was reviewed in response to comments received via the public consultation. It has not been shortlisted in favour of Viewpoint 3 which offers a clearer and more extensive view of the Proposed Development from a similar distance and direction;

- PVP 60 located on the junction of Rosdermott and Moneyduff Roads. This specific location was reviewed in response to comments received via the public consultation and a provisional wireline indicates that it would have clear views of the Proposed Development. However, it has not been shortlisted in favour of Viewpoints 4 and 10 which represent views towards the Proposed Development from the same direction from slightly closer and slightly further distances.

4.130 Viewpoints 1 and 2 are located in Corkey village which is the nearest settlement to the Gruig cluster. The location of Viewpoint 1 was chosen for ease of comparison with the Gruig LVIA which used the same location in the village centre and would be approximately 1.87 km to the north west of the Proposed Development at its nearest point (T1). However, the baseline photograph in Figure 4.10 shows that new building at the school in the foreground would effectively screen views of the Proposed Development. Residential properties further along Reservoir Road would be orientated in the same direction and would experience clearer views similar to those illustrated by the wireline in this figure. Corkey village occupies an elevated position on the western facing side slope of Slievenahanaghan hill which provides a rising upland backdrop to the village which overlooks the pastoral lowland landscape to the west. The existing Corkey and Gruig turbines would be partially visible on these uplands but the lower parts of these wind farms would be screened from view by landform and they are not a prominent visual element. There are also partial close range views to a single turbine located off Gruig Lane to the south and sequential views of other single turbines, the Long Mountain cluster, Cam Burn and Cloonty wind farms when travelling along Corkey Road through the village.

4.131 Viewpoint 2 is located slightly further away from the Proposed Development (2.04 km to the north west of T1) on the northern edge of the village. The rising ground which provides the backdrop to the village and the general west-facing orientation of residential properties is more evident from this location. Existing elements of the Gruig cluster are visible in a similar manner to Viewpoint 1. The condition and quality of the landscape character at Viewpoint 2 is more influenced by the presence of forestry and Corkey quarry, which is apparent just beyond the northern / left-hand side of the view illustrated in Figure 4.11. There would also be more open views across the pastoral lowlands when travelling along Corkey Road in a northern direction towards the villages of Loughguile and Armoy.

4.132 Viewpoint 3 is located in the lowland landscape approximately 3.96 km to the west of the Proposed Development. There are similar views from road corridors throughout this part of the Study Area. The pastoral landscape in the foreground is in relatively good condition with hedges, trees, and shelterbelts of trees occurring throughout. There are residential properties positioned both individually and in small clusters along road corridors and around road junctions which would experience expansive views across the lowland landscape which are framed by the rising uplands beyond. This Viewpoint represents the manner in which Slievenahanaghan and Skerry Hill provide a backdrop to the pastoral lowlands and

appear as part of the wider range of uplands which form the west-facing side of the Antrim Plateau and AONB. There is a clear distinction between the character of the lowland and upland parts of the view from Viewpoint 3.

4.133 Viewpoints 4 and 5 are located 1.84 km and 2.05 km to the south west of the Proposed Development and occupy more elevated upland positions than Viewpoint 3. The character of the foreground landscape is still pastoral in character but is more closely related to the adjacent uplands which are in closer proximity. In Viewpoint 4 the existing Gruig and Corkey wind farms and a number of single turbines are already prominent features and there are wider views towards other wind farms, particularly to the west. In Viewpoint 5 the existing Gruig cluster is barely discernible due to rising ground immediately between Viewpoint 5 and these turbines. There are more uninterrupted and panoramic views in south and south westerly directions and this is where views tend to be focused. A number of other wind farms would be visible in these directions including the Long Mountain and Elginny Hill clusters and three single turbines visible at relatively close range.

4.134 The types of views represented by Category A Viewpoints occur less frequently to the east where rising ground around the site of the Proposed Development and the AONB provide a relatively high degree of screening. This is evidenced by PVPs 26 – 30 which would be located on the road network directly to the north and PVPs 15 – 19 and 31 located to the south. This type of screening from topography surrounding the Proposed Development is also evident in some very close range views directly to west, such as PVP 11 on the outskirts of Corkey village. The reasons that these PVPs were not selected for detailed analysis are provided in Technical Appendix 4.4 Table 4.4.1.

Sensitivity of Visual Receptors: ranging from High to Low

4.135 Category A visual receptors include a high proportion of residents in rural properties, some of which are orientated in the direction of the Proposed Development, who are deemed to be of high sensitivity. Local road users and outdoor workers (e.g. farmers, quarry workers) present in this part of the Study Area are deemed to be of low sensitivity.

Magnitude of Visual Effect: ranging from High to Low

4.136 The Proposed Development would be only partially visible from within Corkey village but it would be more prominent than the existing Gruig cluster which is not highly visible. In proximity to Viewpoint 1 it would appear in the main part of the view from houses located on the lower part of the road and would become a visually dominant feature on the uplands behind the village when approaching from the north (Viewpoint 2) and also from the west (Viewpoint 4). These views would eventually be appreciated in conjunction with the more prominently located Corkey Re-Power turbines once they are constructed. From this part of the Study Area there would also be elevated and relatively unobstructed views westwards across the pastoral lowlands towards Long Mountain ridge and along other parts of the

Antrim Plateau and these would include several other wind farms, wind farm clusters and single turbines.

4.137 In viewpoints represented by Viewpoint 3 located in the lowland landscape to the west, even at close range, the Proposed Development would start to be viewed as part of wider views across lowland and upland landscapes to both the east and west. Although the Proposed Development would still be visually prominent its overall magnitude of effect would be reduced by the larger scale of available views from this part of the Study Area.

4.138 The Proposed Development would be visually dominant from locations in proximity to Viewpoint 4 where it would be clearly visible in its entirety at close range. From these locations to the south the Proposed Development would appear in front of the existing Gruig turbines and the difference in the size of these turbines would be most apparent. However, there would also be undeveloped/ pastoral fields between the road corridors and the Proposed Development at these locations and also relatively elevated views across the wider landscape in other directions which would be uninterrupted by the Proposed Development.

4.139 The base of the turbines would become partially screened by foreground topography as one moves along these roads towards Skerry Hill to the south west and magnitude of effect reduces in proximity to Viewpoint 5. Consideration was initially given to residents on the upper and lower parts of Skerry Road located either side of Viewpoint 5. However, from the lower parts (PVP 31) residential properties tend to be orientated to take advantage of attractive and panoramic views in a south easterly direction. Views in the opposite direction, towards the Proposed Development, are frequently screened either partially or fully by rising foreground topography (the effect of this is already evident in the illustration of Viewpoint 5 in Figure 4.14) and also by vegetation surrounding these properties. There are very few visual receptors likely to be present on the upper parts of Skerry West (PVPs 15 and 16). It is not a through-road and residential properties occupying elevated positions along this part of the road were found to be orientated in the opposite direction to the Proposed Development or to have curtilages with substantial amounts of screen planting around or in proximity to their boundaries which would limit clear views (see Appendix 4.4 for more detail).

Significance of Visual Effect: Significant at Viewpoints 1 4; Not Significant from Viewpoint 5

4.140 The Proposed Development would have significant effects on views represented by Viewpoints 1 – 4 where it would be either visually prominent or dominant in views that would frequently be experienced by highly sensitive receptors. The overall magnitude of effect would be reduced by the larger scale of available views from the lowland pastoral landscape represented by Viewpoint 3. The presence of similarly sized but more prominently located Corkey Re-Power turbines would further reduce the relatively prominence of the Proposed Development, particularly in Viewpoints 1 – 3. However, the nature of views would still be considerably

influenced by the presence of the Proposed Development. In Viewpoint 5 the Proposed Development would be partially screened by foreground topography and the main focus of views would be in the opposite direction. Highly sensitive visual receptors are present in lesser numbers here than in other Category A Viewpoints. Therefore, although the Proposed Development would be clearly visible in one part of the view, it would not have a marked effect on the overall quality or focus of the view from locations represented by Viewpoint 5.

Category B: Locations primarily representing views from settlements and the connecting road network within 5 – 10 km of the proposed Development

Description of Existing Views

4.141 Category B includes Viewpoints 6 - 10 which are illustrated in Figures 4.15 – 4.19. Similarly to Category A they occur in the western side of the Study Area but not to the east which is wholly characterised by upland parts of the AONB within 5 – 10 km of the Proposed Development. Viewpoint 6 is located approximately 8.47 km to the north of the Proposed Development on the west-facing side slopes of the Antrim Plateau just beyond the AONB boundary. It has been selected because it is the start of the Orra Scenic Drive and a point of access into the AONB from the west. The foreground landscape has a similar composition to that in Viewpoint 3 but with a view along the length of the Plateau rather than towards it from a lowland position. Altaveedan wind farm, which forms the northern end of the Gruig cluster, is a prominent foreground feature. The existing Corkey turbines are positioned on the skyline but are far less prominent due to their small scale and Gruig is largely screened by intervening topography. Other wind farms and clusters would be visible to the north and west and these are indicated on the wireline in Figure 4.15.

4.142 Viewpoint 7 is located on the outskirts of Dunloy village approximately 8.48 km to the west of the Proposed Development. It is positioned on the side slopes of Long Mountain Ridge which frames to opposite side of the pastoral lowlands in the centre of the Study Area.

4.143 Viewpoints 8 and 9 are located 7.83 km and 7.06 km to the south of the Proposed Development. Similarly to Viewpoint 6 they are also on the west-facing side slopes of the Antrim Plateau just beyond the AONB boundary. Viewpoint 8 is at a lower elevation and the foreground landscape is largely pastoral in character with rural properties and areas of settlement scattered throughout the foreground. The Gruig cluster is a visible feature obscured partially by variations in topography on the skyline but is not prominent. It would become more prominent with the construction of Corkey Re-Power. There are also several single turbines which are prominently located along the skyline to the west of the Gruig cluster. These are indicated on the photomontage in Figure 4.17. There are sequential views of the Elginny Hill cluster which is located relatively close to this viewpoint and also more distant views towards the Long Mountain cluster beyond the far left hand side/ west of the view illustrated in Figure 4.17. Viewpoint 9 is located on the uplands above Viewpoint 8 and has a more upland character with areas of rough grazing and more dispersed rural properties. Views are much more extensive in all directions due to the elevated nature of this viewpoint. The single turbines that were prominent in Viewpoint 8 are also visible here. Elginny Hill cluster is closer and more prominent from this location and clear views towards other wind farms and clusters are also typical.

4.144 Viewpoint 10 is located within the lowland pastoral landscape around the village of Cloughmills. The topography here is flatter and frequently more vegetated so

screening from areas of woodland and shelter belts of trees and hedgerows occurs frequently and is likely to prevent many views in the direction of the Proposed Development during the spring and summer months when trees are in leaf (the potential effect of this can be gleaned from the baseline photograph used in Figure 4.19). The landscape is visually contained to the east by the Antrim Plateau/ west-facing side of the AONB and to the west by the Long Mountain ridge. There are clusters of wind farms and single turbines visible along several parts of these uplands and all are either simultaneously or sequentially visible when travelling through the landscape in proximity to Viewpoint 10.

4.145 A number of other PVP locations which have not been shortlisted but which would experience similar types of views include PVPs 23, 33, 49, 51, 52 and 56. The reasons why these have not been shortlisted are provided in Technical Appendix 4.4, Table 4.4.1.

Sensitivity of Visual Receptors: ranging from High to Low

4.146 Some tourists travelling into the AONB may also be present particularly in proximity to Viewpoint 6 which is a designated scenic drive and are also deemed to be of high sensitivity. However, views from this location are likely to be transitory because there are no dedicated viewing areas along this section of the scenic route and it is not within the AONB boundary. Residents of rural properties who are deemed to be of high sensitivity would be present in relatively high numbers at Viewpoint 8 and more dispersed in in proximity to Viewpoints 6, 8 and 9. Residents on the outskirts of the settlements of Dunloy and Cloughmills are deemed to be of medium rather than high sensitivity due to their proximity to settlement and busier parts of the road network. Local road users and outdoor workers deemed to be of low sensitivity are likely to form the majority of visual receptors in at other viewpoints.

Magnitude of Visual Effect: ranging from Medium to Low

4.147 From upland locations to the north west that are represented by Viewpoint 6 the Proposed Development would only be partially visible. Only three of the proposed turbines would be visible in their entirety with the upper parts of the rotors of a further 4 turbines being visible either side of Slievenahanaghan hill. The remaining turbines would be partially or wholly screened by this hill. The Proposed Development as a whole would also be a smaller element in the context of the wider view which includes extensive west-facing views and also views of Altaveedan wind farm in the foreground which would appear closer, more prominent and larger in scale. Although the scale of the Proposed Development would appear substantially larger than the existing Corkey wind farm, it would also occupy a lower position in the view. Furthermore, Corkey Re-Power could occupy the same prominent skyline position as Corkey and, when considered in conjunction with Corkey Re-Power, the Proposed Development would appear as a more visually cohesive element of Gruig cluster.

4.148 Viewpoint 10 is the closest viewpoint in this category to the Proposed Development. Therefore, from this part of the Study Area the scale of the proposed turbines would be noticeably larger than the adjacent existing and consented wind farms. However, the layout would clearly reflect that used for Gruig wind farm when viewed from this direction and would also be frequently screened by vegetation in the intervening pastoral lowlands which characterise foreground views. The turbine layout would become a less discernible feature when viewed from the other Viewpoints in this Category and the scale of the proposed turbines would become more directly comparable with those of the consented Corkey Re-Power wind farm which would appear either behind the Proposed Development (in the case of Viewpoints 8 and 9) or on the more prominent Slievenahanaghan uplands at a higher elevation than the Proposed Development (in the case of Viewpoints 7 and 10). The Proposed Development would be visible in its entirety when viewed from locations represented by Viewpoints 7 and 10, albeit often screened by foreground vegetation. The lower parts of the turbines would be screened by Skerry Hill when viewed from both the lowland and upland landscapes to the south, represented by Viewpoints 8 and 9. From Viewpoint 7, which represents views from the lowlands around the A26 and also from the rising uplands of Long Mountain in proximity to Dunloy, the Proposed Development's position below Slievenahanaghan hill on which Corkey is located is clearly visible. There are also clear views along other parts of the Antrim Plateau from this location which clearly illustrate a repeating pattern of wind farm clusters in several other parts of the view. There is some stacking of turbines is evident in Viewpoints 7 and 8 but overall the Proposed Development remains within the same part of the view that is currently occupied by existing and consented wind farms forming the Gruig cluster. The turbines are also noticeably larger than the existing and consented wind farms forming the Gruig cluster when seen from Viewpoint 8 but they are also closer to this viewpoint and would thus be expected to appear as such. From lowland viewpoint locations there is clear visual separation with the uplands on which the Proposed Development and other existing and consented wind farms are located.

Significance of Visual Effect: Not Significant

4.149 From all viewpoints in this category the Proposed Development would appear as a coherent part of the Gruig cluster. Although from Viewpoint 10 the scale and lateral spread of turbines would be more noticeably due to its proximity, it is noted that views represented by Viewpoint 10 are frequently screened by lowland vegetation, are obtained from road corridors where traffic is relatively fast-moving, and which also feature views of other existing wind farms in several other directions. From other viewpoints in this Category, the scale and layout of the Proposed Development is reduced by distance and the overall scale of views into the wider landscape which are available from these locations. Skerry Hill also provides partial screening of the Proposed Development in views from the south.

Category C: Locations primarily representing views from within the Antrim Coast and Glens Area of Outstanding Natural Beauty

Description of Existing Views

4.150 Category C includes Viewpoints 11 -14 which are illustrated in Figures 4.20 – 4.23. They have been selected to represent the few available locations within the Antrim Coast and Glens which would experience views of the Proposed Development. Despite being located within an LCA which forms the majority of the northern part of this AONB, the position of the Proposed Development on the south-west facing edge of this LCA means that the turbines and most ancillary development are neither within the AONB boundary nor clearly visible from the majority of this designated landscape. Locations represented by this category of viewpoints are located within 5 km of the Proposed Development with the exception of Viewpoint 14 which is located on the summit of Slemish approximately 17.5 km to the south east. The latter has been included because it is a popular visitor attraction and a relatively easily accessible summit from where elevated and panoramic views can be obtained of much of the AONB, the Belfast hills and the landscapes forming the western half of the Study Area. In contrast, Viewpoint 13 on the summit of Trostan, is located in close proximity to the Proposed Development and is the highest summit in the AONB (hence why it has been selected) but it is not easily accessible and would experience only partial views of the Proposed Development. Viewpoint 11 is located on Altnahinch Road which forms the eastern site boundary and would be just 0.55 km from the Proposed Development. Views into the wider landscape, including the AONB, from this location are relatively restricted by the uplands on which the Gruig cluster and Slieveanorra Forest are located.

4.151 A number of other PVP locations which have not been shortlisted but which would experience similar types of views include PVPs 4, 19, 20, 26, 27, 30, 47 and 48. The reasons why these have not been shortlisted are provided in Technical Appendix 4.4, Table 4.4.1.

Sensitivity of Visual Receptors: ranging from High to Low

4.152 Sensitivity of all visual receptors within the AONB are deemed to be high although the sensitivity of receptors in proximity to Viewpoint 11 would be reduced by their proximity to other strong man-made influences on the nature of existing views including several other wind farms, forestry and Altnahinch reservoir.

Magnitude of Visual Effect: Ranging from High to Negligible

4.153 From views represented by Viewpoint 11 the Proposed Development would be partially visible in the context of close range views of other existing and consented wind farms and single turbines as well as forestry and the nearby Altnahinch reservoir. Views into the wider landscape are heavily restricted by landform and, hence these man-made influences are the defining characteristics of this view. The overall magnitude of effect resulting from the Proposed Development is deemed to be high but this level of effect would not be extensive across the majority of the

AONB, as evidenced by the overall lack of visibility from within the AONB boundary and by the other Viewpoints in this category.

4.154 From Viewpoint 12 there would partial and briefly available close range views of the Proposed Development but it would be largely screened by Skerry Hill and becomes completely screened if travelling in either direction along this road (refer to PVPs 17 – 19 in Technical Appendix 4.4, Table 4.4.1). Views from this location are funnelled southwards into the lowlands surrounding the A43 road corridor with clear views of the Elginny Hill cluster in the middle distance. The Proposed Development is visually and physically contained in the convex landform between Skerry Hill and Slievenahanaghan which is the type of landform noted in the SPG as being a suitable location for wind energy development in LCA 118.

4.155 Viewpoint 13 would also experience partial visibility of the Proposed Development. Forestry is also a strong and widespread feature of the landscape visible from Trostan. There are also panoramic views in all other directions which reduce the apparent scale and prominence of both the Proposed Development and the existing and consented wind farms which form the rest of the Gruig cluster.

4.156 Viewpoint 14 is located at a much greater distance from the Proposed Development which would appear as a minor element within a 360-dgree panoramic view which incorporates key elements of the AONB (uplands, glens and coastline) and a repeating pattern of wind energy developments (existing, consented, proposed and single turbines) in many other parts of the view at close, medium and longer range. When seen in this context the magnitude of effect caused by the Proposed Development would be negligible. It is further noted that there would be no views of the Proposed Development from the car park or approach roads to Slemish which are at a lower elevation and where forestry in combination with topography provides complete screening.

Significance of Visual Effect: Not Significant

4.157 There would be no instances of significant effects even at close range because the turbines in the Proposed Development would not encroach into the AONB or cause any substantial magnitude of effect on any of the AONBs key characteristics. In all instances views of the Proposed Development would be partially screened by topography or available from limited parts of the landscape.

Category D: Locations primarily representing views from the A26 and A44 road corridors

Description of Existing Views

4.158 Category D includes Viewpoints 15 -19 which are illustrated in Figures 4.24 – 4.28. They have been selected to represent views from the primary access routes through the Study Area into the two AONBs also within the Study Area. All locations represented by the viewpoints in this Category have relatively wide views of the west-facing slopes of the Antrim Plateau which forms the western boundary to the Antrim Coast and Glens AONB. Viewpoints along the A26 are also located in the

lowlands between this and Long Mountain Ridge to the west. These viewpoints in particular tend to feature visibility of existing wind farms in the Long Mountain cluster as well as the Gruig and Elginny Hill clusters. There are a number of large and prominently located single turbines in proximity to Glarryford near Viewpoint 16 where the road corridor has been recently upgraded and dualled. Here the road corridor itself is often located within cuttings and/ or surrounded by roadside embankments. Views eastwards have become more visually contained and are better obtained when crossing the carriageway on bridges such as that represented by Viewpoint 16. Furthermore, the recent upgrades mean that visual receptors would experience views into the wider landscape in the context of a substantial amount of 'street furniture' – traffic barriers, lighting columns, signage and fencing which all contribute to creating an overwhelming man-made character to views. The A44 is a quieter road in general, less heavily characterised by substantial modern improvements and the associated street furniture that accompanies this. From this road, and from adjacent rural properties, views into the surrounding landscape have a more tranquil pastoral character.

4.159 It is noted that the A43 road corridor also provides access into the AONB but views in proximity to this road corridor were found to be scarcer and would not typically occur within the AONB itself. Views from this part of the Study Area are instead represented by Viewpoints 8 and 9 in category B. A number of other PVP locations which have not been shortlisted but which would experience similar types of views include PVPs 22, 23 and 52. The reasons why these have not been shortlisted are provided in Technical Appendix 4.4, Table 4.4.1.

Sensitivity of Visual Receptors: ranging from High to Low

4.160 The majority of tourists travelling to and from the two AONBs are likely to use these routes as points of access and therefore the sensitivity of road users is considered to be medium rather than low as might usually be expected for busy roads such as these with fast-moving traffic. Both roads offer frequent opportunities to stop and appreciate views into the wider landscape. These locations also represent other visual receptors of high sensitivity – rural properties in the surrounding countryside that would experience similar views – as well as of low sensitivity – general road users, outdoor workers and other receptors, for example visitors to the business premises in the foreground of Viewpoint 15.

Magnitude of Visual Effect: Low

4.161 The Proposed Development would be located at distances ranging from 6 – 12 km from the viewpoints in this category and, in all cases would be clearly visible. From viewpoints 18 and 19 some of the proposed turbines would be partially screened behind Slievenahanaghan hill and Corkey wind farm/ Corkey Re-Power wind farm would be visible in front of the Proposed Development. Altaveedan wind farm would also be visible in the middle distance at closer range to these viewpoints. From the other viewpoints in this category the Proposed Development would appear

as a lateral extension of the existing cluster and would be a prominent addition to this part of each view. However, when viewed within the context of the wider available views from all viewpoint locations in this category its prominence is reduced. The Proposed Development would also be visible within the context of wider views where a repeating pattern of wind farm and single turbine clusters is evident on the skylines and side slopes which contain the lowland landscapes in which these road corridors are located. The existing clusters of wind farms at Long Mountain, Elginny Hill and Gruig are all visible along many parts of these road corridors, often in conjunction and sequentially. In Viewpoint 16 the Proposed Development would occupy a lower position between Slievenahanaghan and Skerry Rock with the lower parts of the turbines appearing below the skyline, also reducing its prominence. The overall magnitude of effect on Viewpoints in this category is deemed to be Low.

Significance of Visual Effect: Not Significant

4.162 There would be no instances of significant effects from views represented by Category D Viewpoints because, whilst some visual receptors are deemed to be highly sensitive, the magnitude of effect in all instances would be low. The Proposed Development would be visible but not prominent when seen in the context of the wider views available from these locations.

Category E: Locations primarily representing views from the Causeway Coast and Glens Area of Outstanding Natural Beauty

Description of Existing Views

4.163 Category E includes Viewpoints 20 -22 which are illustrated as wirelines in Figure 4.29[9]. They have been selected because this AONB contains some of Northern Ireland's primary tourist attractions and is the likely end destination for a sizeable proportion of the road users represented by Category D viewpoints. All three viewpoints occupy elevated positions on the south-facing edge of this AONB. The majority of views from within the AONB tend to be orientated along the north coast rather than in the direction of these viewpoints. There is one existing wind farm at Cloonty which is prominently located within the lowlands to the south of this AONB and which is visible in the wireline presented for Viewpoint 22.

[9] Refer to Technical Appendix 4.2, paragraph 4.33 iii: SNH guidance advises that photomontages may not be required where the Proposed Development is unlikely to be a perceptible feature in the view

Sensitivity of Visual Receptors: ranging from Medium to Low

4.164 Although all visual receptors would be located within an AONB their sensitivity is greatly reduced because of the distance of the Proposed Development from this part of the Study Area and the typical focus of the attention of visual receptors in other directions, particularly northwards towards and along the coastal part of the AONB.

Magnitude of Visual Effect: Negligible

4.165 In all instances the Proposed Development would appear as an integral part of the existing and consented cluster of wind farms at Gruig and, from these distances it would not form a clearly distinguishable feature from these other wind farms. Differences in turbine scale and layout are unlikely to be clearly perceptible from these distances even in very clear weather conditions. Views from this part of the Study Area in a southerly direction tend to be channelled between the west-facing edge of the Antrim Plateau/ Antrim Coast and Glens AONB and Long Mountain Ridge with a broad relatively flat expanse of pastoral lowlands in between. Both upland areas already feature a number of existing wind farms and clusters and the Proposed Development would be viewed in the context of this established pattern of wind energy development.

Significance of Visual Effect: Not Significant

4.166 There would be no instances of significant effects from views represented by Category E Viewpoints because no visual receptors are deemed to be highly sensitive and the magnitude of effect in all instances would be negligible. The Proposed Development would not appear in the main focus of views from this part of the Study Area and would be located at such a distance that it is unlikely to be easily perceptible or distinguishable from other wind farms in the Gruig cluster even in clear weather conditions.

Category F: Locations primarily representing views of the Proposed Development from the wider Study Area beyond 15 – 20 km

Description of Existing Views

4.167 Category F includes Viewpoints 23 - 26 which are illustrated in Figures 4.30 – 4.31. Viewpoint 23 is located approximately 15.4 km to the south west of the Proposed Development. The other viewpoints in this category are located in excess of 19 km distance and are included to illustrate visibility of the Proposed Development in the context of the wider Study Area but are only illustrated as wirelines due to their distance. The landscape around Viewpoint 23 is broadly similar to that elsewhere on the Long Mountain Ridge and its lower slopes. Between this location and Viewpoint 15, which is located on the A26 road corridor, visibility was found to be restricted by the richly vegetated rural landscape in proximity to Cullybackey. Viewpoint 23 occupies an elevated position slightly above this and would experience extensive views across this pastoral landscape which is framed in the distance by

the west-facing edge of the Antrim Plateau. The existing cluster of wind farms at Gruig is relatively clearly visible in the distance.

4.168 A number of other PVP locations which have not been shortlisted but which would experience similar types of views include PVPs 24, 35, 36, 41, 42, 45 and 50. The reasons why these have not been shortlisted are provided in Technical Appendix 4.4, Table 4.4.1.

Sensitivity of Visual Receptors: ranging from Medium to Low

4.169 A range of visual receptors would be present at viewpoints in this category including highly sensitive residents of rural properties who are likely to be present in proximity to all viewpoints in this category, and visitors to outdoor amenity sites such as that represented by Viewpoints 25 and 26. Cyclists on the national cycle network would be present in proximity to Viewpoint 24 and are deemed to be of medium sensitivity. Outdoor workers and general road users would be of low sensitivity. However, the sensitivity of all receptors would be greatly reduced because of the distance of the Proposed Development from this part of the Study Area.

Magnitude of Visual Effect: Low to Negligible

4.170 From parts of the Study Area represented by Viewpoint 23 the Proposed Development would appear as a lateral extension to the existing and consented Gruig cluster of wind farms. The southern group of turbines (T 1 – T12) would appear slightly separately than turbines T1 – T3 but, from this distance this is unlikely to be prominent. The Gruig cluster as a whole would also appear as a relatively minor element within the wider view which includes an extensive rural landscaped in the foreground and broad expanse of uplands in the distance. The magnitude of effect from Viewpoint 23 is deemed to be low. From locations represented by Viewpoints 24 – 26 the magnitude of visual effect is deemed to be Negligible. The Proposed Development would be barely perceptible in any instance and would invariably form an integral part of the existing and consented wind farms at Gruig. This would also be experienced in the context of a repeating pattern of similarly located wind farms visible in other parts of the same views.

Significance of Visual Effect: Not Significant

4.171 There would be no instances of significant effects from views represented by Category F Viewpoints because no visual receptors are deemed to be highly sensitive and the magnitude of effect in all instances would be low to negligible. The Proposed Development would not appear in the main focus of views from this part of the Study Area and would be located at such a distance that it is unlikely to be easily perceptible or distinguishable from other wind farms in the Gruig cluster even in clear weather conditions.

Table 4.2: Summary of Visual Effects on Viewpoints

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of visual effect	Significance of visual effect
Category A: Locations primarily representing views from settlements and rural roads with residential properties within 5 km of the Proposed Development						
1	Corkey Village at Reservoir Road junction	1.87 km to T1	Prominent	High	Medium	Significant
2	Corkey Village at Ballyweeny Road junction	2.04 km to T1	Prominent	High	Medium	Significant
3	Junction of Ballyweeny and Ballyveely Roads	3.96 km to T1	Prominent	High to Low	Medium	Significant
4	Omerbane Road near Tullykittagh Road	1.84 km to T5	Dominant	High to Low	High	Significant
5	Skerry West at Omerbane Road junction	2.05 km to T5	Visible	Medium to Low	Medium	Not Significant
Category B: Locations primarily representing views from settlements and the connecting road network within 5 – 10 km of the proposed Development						
6	Altarichard Road, Magherahoney	8.47 km to T1	Visible	High	Medium	Not Significant
7	Dunloy Village	8.48 km to T1	Visible	Medium to Low	Low	Not Significant
8	Killygore Road near A43 at Martinstown	7.83 km to T5	Visible	High to Low	Medium	Not Significant
9	Glen's Brae, Lisbreen near Martinstown	7.06 km to T5	Visible	High to Low	Medium	Not Significant
10	Layby on B94 at edge of Cloughmills	5.14 km to T3	Visible	Low to High	Medium to Low	Not Significant
Category C: Locations primarily representing views from within the Antrim Coast and Glens Area of Outstanding Natural Beauty						
11	Altnahinch Road at Skerry	0.55 km to	Dominant	Low	High	Not

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of visual effect	Significance of visual effect
	Hill	T12				Significant
12	Old Cushendun Road to north of Altnahinch Road	1.76 km to T12	Prominent	High to Low	Low	Not Significant
13	Trostan summit, Moyle Way	4.65 km to T12	Prominent	High	Low	Not Significant
14	Slemish summit	17.48 km to T5	Visible	High	Negligible	Not Significant
Category D: Locations primarily representing views from the A26 and A44 road corridors						
15	A26 near Ballymena	10.11 km to T5	Visible	Low to High	Low	Not Significant
16	Bridge over A26 near Logan's, Cloughmills	6.12 km to T2	Visible	Medium to Low	Low	Not Significant
17	A26 Frosses Road near Ballymoney	12.07 km to T1	Visible	Medium to Low	Low	Not Significant
18	Drones Road, A44 at Ballynagashel	8.68 km to T1	Visible	Medium to Low	Low	Not Significant
19	Armoy village at GAA carpark, A44	11.64 km to T1	Visible	Medium to Low	Low	Not Significant
Category E: Locations primarily representing views from the Causeway Coast and Glens Area of Outstanding Natural Beauty						
20	A2 at Magheraboy near Ballintoy	23.26 km to T1	Visible	Medium to Low	Negligible	Not Significant
21	Causeway Coast scenic drive near Giant's Causeway	27.37 km to T1				
22	Round Hill near Portballintrae and Dunluce	27.67 km to T1				
Category F: Locations primarily representing views of the Development from the wider Study Area beyond						

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of visual effect	Significance of visual effect
15 - 20 km						
23	**Granagh Road near Cullybackey**	**15.43 km to T5**	**Visible**	**Medium**	**Low**	**Not Significant**
24	**Seacon Beg near Ballymoney**	**19.77 km to T1**	**Visible**	**Medium to Low**	**Negligible**	**Not Significant**
25	**Tildarg Hill near Wolf Bog**	**25.12 km to T5**				
26	**Tardree Mountain**	**26.11 km to T5**				

4.172 Of the 26 Viewpoints which have been selected to represent typical views within the Study Area only four would experience significant visual effects resulting from the Proposed Development. These are Viewpoints 1 – 4 in Category A. All are located within approximately 5 km and from locations where the Proposed Development would be both prominent and visible in its entirety or near-entirety from rural roads and areas of settlement. These viewpoints are also all located to the west of the Proposed Development in the uplands adjacent to the site of the Proposed Development.

4.173 It is noted that the BPG recognises that wind farms may be expected to be relatively prominent within distances of approximately 5 km but that clear visibility does not automatically equate to the development being unacceptable (see paragraphs 4.55 – 4.59). It is also noted that the majority of the Antrim Coast and Glens AONB and close range viewpoints located to the south and east would experience limited visibility of the Proposed Development and no significant effects. Furthermore, from the majority of the Study Area and the majority of the Study Area, including the Causeway Coast and Glens AONB, the Proposed Development would have no little to any visibility and would result in no significant visual effects.

The Cumulative Baseline and Analysis of Effects

4.174 The Cumulative Baseline refers to all existing, consented and proposed wind farms within the 30 km Study Area. There are a total of 25 wind farms considered to be part of the Cumulative Baseline for this LVIA. In many instances other wind farms

in the cumulative baseline are located in visually and / or physically distinct clusters. This often reflects landscapes, ground conditions and wind speeds that are favourable for wind energy development. It also reflects a general principle, which is implemented by planning consents, to consolidate and group new and established developments together as a means to achieve sustainable development and mitigate potential adverse cumulative effects on scenic landscapes which would otherwise result from a sporadic approach to siting new developments. The following clusters of wind farms are identified in this LVIA and reference is made to these clusters rather than individual wind farms where appropriate. Details of which wind farms are located within clusters are provided in Technical Appendix 4.5 Table 4.5.1 and are not repeated here. The locations of these clusters are indicated on Figure 4.4:

- Gruig Cluster
- Long Mountain Cluster
- Elginny Hill Cluster
- Elliott's Hill Cluster

4.175 There are currently a total of 125 existing and consented turbines in the Study Area. Full details of all wind farms included in the Cumulative Baseline are provided in Technical Appendix 4.5 and a summary below. These have has been used in conjunction with the cumulative ZTV diagrams and Viewpoints to analyse cumulative landscape and visual effects. There are five existing or consented single turbines located within 5 km of the Proposed Development which have been included in the Cumulative Baseline and on the viewpoint wirelines shown in Figures 4.10 – 4.31. There are also single turbines evident across the wider Study Area which are visible in the baseline photographs used for the photomontages and the location of these is highlighted on these Figures where relevant to the existing character of the view in question.

4.176 There is already a wide range of turbine dimensions evident in the wind turbines which form the cumulative baseline. Sixteen wind farms in the cumulative baseline are existing and account for a total of 96 turbines of varying sizes:

- Overall tip heights ranging from 53.5 m (Corkey) to 125 m (Garves);
- Rotor diameters ranging from 26 m (Connaught Road) to 93 m (Glenbuck II);
- Hub heights ranging from 35 m (Corkey) to 80 m (Garves).

4.177 A further 5 wind farms are consented which accounts for a total of 24 turbines also of varying sizes:

- Overall tip heights ranging from 99.5 m (Ballykeel) to 137 m (Corkey Re-Power);
- Rotor diameters ranging from 71 m (Ballykeel) to 117 m (Corkey Re-Power);

- Hub heights ranging from 64 m (Ballykeel) to 85 m (Cam Burn).

4.178 A further 4 wind farms are proposed (i.e. in-planning) and these account for 39 turbines of varying sizes as listed below. The sizes of consented and proposed turbines when compared to those of existing wind farms is indicative of a general upward trend in turbine dimensions.

- Overall tip heights ranging from 105 m (Carnalbanagh) to 180 m (Unshinagh);
- Rotor diameters ranging from 71 m (Whappstown) to 136 m (Unshinagh);
- Hub heights ranging from 52.5 m (Carnalbanagh) to 112 m (Unshinagh).

Table 4.3: Summary of Cumulative Baseline

Wind Farm (see Technical Appendix 4.5 for full details)	No. of turbines	Approx. distance from Development (km between nearest turbines)
Existing Wind Farms, 16no.	**Total no. of turbines = 96**	
Altaveedan	9	5.32 km to N of T1
Ballymena Wind Park	2	14.77 km to S of T5
Cloonty	4	19.8 km to NW of T1
Connaught Road	2	26.3 km to SW of T5
Corby Knowe	3	26 km to NE of T5
Corkey	10	0.93 km to NE of T1
Corkey Extension	1	1.90 km to NW of T1
Elginny Hill	10	7.9 km to S of T5
Elliot's Hill	10	24.6 km to SE of T5
Garves	5	11.23 km to SW of T2
Glenbuck I	1	10.9 km to SW of T2
Glenbuck II	4	10.9 km to SW of T2
Gruig	10	0.36 km to E of T1
Long Mountain	12	10.3 km to SW of T2
Rathsherry	9	8.76 km to S of T5
Wolf Bog	5	24.6 km to SE of T5
Consented Wind Farms, 5no.	**Total no. of turbines = 24**	
Ballykeel	7	27.07 km to SE of T10

Wind Farm (see Technical Appendix 4.5 for full details)	No. of turbines	Approx. distance from Development (km between nearest turbines)
Cam Burn	6	27.62 km to W of T1
Castlegore	4	24 km to SE of T5
Corkey Re-Power	5	0.74 km to N of T1
Craigs and Extension	2	13.8 km to SW of T3
Proposed Wind Farms, 4no.	Total no. of turbines = 39	
Ballygilbert	14	21.55 km to SE of T12
Carnalbanagh	7	17 km to SE of T6
Unshinagh	14	12.43 km to SE of T12
Whappstown	4	23.85 km to SE of T5
Existing & Consented Single Turbines within 5 km of the Proposed Development, 5no.	Total no. of turbines = 5	
Total no. of turbines in Study Area	164	

Cumulative Landscape Effects

4.179 The majority of the wind farms in the Study Area are located in physically distinct clusters around the southern and western edges of the Antrim Coast and Glens AONB and Long Mountain Ridge. They are a recurring and defining feature of Study Area and on approaches towards the AONB from southerly and westerly directions.

4.180 The cluster of wind farms in closest proximity to the Proposed Development are referred to in this LVIA as the Gruig cluster which is considered to include a number of existing and consented wind farms all located to the north west of the Proposed Development. This cluster includes: an existing 10-turbine wind farm at Gruig located approximately 0.36 km to the north east at its nearest point; an existing 10-turbine wind farm at Corkey located at a distance of approximately 0.93 km; a single turbine extension to Corkey located at a distance of approximately 1.9 km; an existing 9-turbine wind farm at Altaveedan located at a distance of approximately 5.32 km and a consented 5-turbine replacement to Corkey, referred to as Corkey Re-Power located at a distance of approximately 0.74 km. Altaveedan is the northern-most wind farm in this cluster and there is a distance of approximately 3.4 km between Altaveedan and the other wind farms. Although it is physically slightly detached from the main cluster it is located in sufficiently close proximity to appear closely related in visual terms from many viewpoints throughout the Study Area. It is frequently seen within the same views and on the same west-facing side of LCA 118/ the AONB as the other wind farms in this cluster.

This is particularly the case when the Gruig cluster is viewed from locations within the lower lying rural landscape in the central part of the Study Area to the west of the Proposed Development.

4.181 In addition to commercial wind farms there are a number of existing and consented single turbines known to be located within 5 km of the Proposed Development and which are illustrated on the wirelines in Figures 4.10 – 4.31. There are a greater number of single turbines in the wider study area, some of which appear in the baseline photographs which have been used to create the photomontages in these figures. The approach of clustering wind farms together as a means of achieving sustainable development and mitigating potential adverse cumulative effects is not reflected in the siting of single turbines which are proliferate across the lowland pastoral landscapes and lower slopes of upland areas throughout the Study Area. Single turbines are a characteristic feature of the rural landscape in the wider Study Area, particularly on the uplands directly to the south of the Proposed Development and within the farmland around Ballymena. It is therefore noted that wind turbines are not a new or unusual feature element of landscape character across the Study Area as a whole.

4.182 There are a number of other wind farms located in the western part of the Study Area, most notably a cluster on the Long Mountain Ridge overlooking the A26 road corridor which is a key route between Ballymena and the north Antrim coast. The clusters of wind farms on the edge of the AONB – Gruig, Elginny Hill and Elliot's Hill clusters - are also a feature of views from this part of the Study Area. A further consented wind farm at Ballykeel would be located within the southern part of the AONB and there is an existing wind farm in the pastoral landscape to the south of the Causeway Coast and Glens AONB in the northern part of the Study Area (Cloonty wind farm located approximately 19.8 km to the north west of the Proposed Development). The positioning of wind farms on upland plateau and edges overlooking more populated rural landscapes is a common and repeated pattern throughout this Study Area and across Northern Ireland.

4.183 The SPG's recommendation for LCA 118 is that the large scale horizontal form of the uplands are well suited to wind energy development as are convex sites which benefit from some screening by virtue of this landform. Areas adjacent to forestry and sites that can utilise existing forestry and wind farm access tracks are of the least sensitivity. The site of the Proposed Development meets these criteria. The overall magnitude of cumulative effect on landscape character resulting from the Proposed Development is therefore deemed to be of low magnitude and not significant. It would be immediately apparent on a small part of the LCA but would have no direct physical or visual effect on the majority of this LCA including any parts located within the AONB.

Cumulative Visual Effects

4.184 Existing wind farms form the majority of the cumulative baseline that is considered in this LVIA. There are 16 existing wind farms in the Study Area and these are

described as an integral part of the baseline views in the assessment of Viewpoints starting at paragraph 4.125. There are a further 5 consented wind farms located between approximately 13 km and 23 km from the Proposed Development. Corkey Re-Power wind farm is located in close proximity to the Proposed Development and is considered in preference to the existing Corkey wind farm in relation to the description of cumulative visual effects because of its consented status and the fact that it will replace the latter.

4.185 The other consented wind farms in the Study Area are Ballykeel, Castlegore and Craigs /Craigs Extension which are located at greater distances – between 13 and 27 km from the Proposed Development. Whilst they would, in some instances, appear in different parts of views obtained from representative Viewpoints they would generally not be easily discernible. The Proposed Development would have no significant cumulative effects in conjunction with these wind farms or vice versa. Technical Appendix 5 Table 4.5.1 in clearly illustrates that Ballykeel and Castlegore would rarely be visible from the representative viewpoints from which the Proposed Development would be clearly visible. This table, in conjunction with the wirelines in Figures 4.10 – 4.31 also illustrate that, although Craigs and Craigs Extension would be visible from 11 of the representative viewpoints it would not in fact be a clearly discernible visual feature in most instances nor within the same field of view as the Proposed Development.

4.186 Three cumulative ZTV diagrams (Figure 4.9, pages 1 to 3) have been produced at 30 km radii using theoretical blade tip visibility calculations in order to consider the highest possible levels of visibility (refer to the LVIA methodology in Technical Appendix 4.2 for further details). The first illustrates the incremental effect of the Proposed Development when considered alongside the Gruig cluster (Figure 4.9 page 1 of 3) which includes existing wind farms at Gruig, Altaveedan and Corkey Extension, which is a single turbine located to the north of Corkey wind farm[10]. The latter, which is an existing 10-turbine wind farm, is not included in the ZTV calculation but is replaced by the consented Corkey Re-Power wind farm in order to provide a more accurate assessment of the future visibility of this cluster. Corkey Re-Power would comprise five turbines rather than 10 but would be similarly located across the summit of Slievenahanaghan hill at a higher elevation than the Proposed Development.

4.187 The combined theoretical visibility of this cluster of wind farms would cover 42.07 % of the 30 km Study Area. The Proposed Development would have theoretical visibility across 40.77 % of the Study Area and would largely be visible across much of the same area as the other wind farms although less so in the northern part of the AONB. This ZTV indicates that the Proposed Development would increase theoretical visibility across 2.74 % of the Study Area where there would currently be

[10] Figure 4.9 (page 1 of 3) considers the Gruig cluster to include existing wind farms at Altaveedan, Corkey Extension and Gruig and Corkey Re-Power consented wind farm which will replace the existing Corkey wind farm with substantially larger turbines. The latter is not included in the ZTV calculation.

no visibility of the other wind farms. The ZTV suggests that these areas of additional visibility are mostly located within the central part of the adjacent AONB, directly to the south of the Proposed Development and also at distances of approximately 15 km to the south between Ballymena and western parts of Glenariff. However, further site analysis found that the close range visibility indicated to the south east of the Proposed Development would only be of a very small number of blade tips and would typically be screened by variations in topography that are not shown by the 50 m contour data used for the ZTV. In particular, the site assessment revealed very little clear visibility of the Proposed Development in proximity to Newtown Crommelin where the majority of additional visibility is indicated by the ZTV. Areas of additional theoretical visibility located around Glenariff Forest Park would, in practice be screened by forestry, and the uplands to the east of this are not publicly accessible.

4.188 Visibility in the southern part of the AONB is represented by Viewpoint 14 on the summit of Slemish and would not be significant (see Category C viewpoints from paragraph 4.150). Site survey suggests that from lower elevations views in the direction of the Proposed Development would typically be screened by vegetation – there are, for example, no views available from Slemish car park although Viewpoint 14 shows partial views from the summit. The 15 km ZTV diagrams illustrated in Figure 4.6, which have been amplified by site assessment, suggest that the majority of locations shown to have additional visibility at closer range would in practice be either screened by forestry, be located in parts of the Study Area that are not easily accessible or which would comprise of limited visibility of blade tips only and be hard to discern.

4.189 The second cumulative ZTV illustrates the combined effect of other existing and consented wind farms within the Study Area and the incremental effect of the Proposed Development on this cumulative baseline (Figure 4.9 page 2 of 3). This ZTV clearly illustrates the conclusion that has already been made in relation to cumulative landscape effects, i.e. that clusters of wind farms are a characteristic feature on westward facing slopes of the Antrim Plateau and Long Mountain Ridge. There are also a number of other existing and consented wind farms within the Antrim Coast and Glens AONB and within the southern setting of the Causeway Coast and Glens AONB. Theoretical visibility of existing and consented wind farms occurs across 73.14 % of the Study Area and the Proposed Development would increase this theoretical visibility by only 0.92%. This theoretical increase would be experienced in parts of the Study Area where site survey has suggested that actual visibility would be extremely limited.

4.190 The third cumulative ZTV diagram (Figure 4.9 page 3 of 3) illustrates the theoretical visibility of proposed wind farms and the incremental effect of the Proposed Development on the level of visibility of proposed wind farms across the Study Area. There are four proposed wind farms in the Study Area, three of which are located in the southern half of the adjacent AONB outwith the ZTV for the Proposed Development and one located in the Elliot's Hill cluster approximately 24 km to the

south and also unlikely to be clearly intervisible with the Proposed Development. When considered alongside these wind farms the Proposed Development would increase overall theoretical visibility of proposed wind farms by 23.81 % (and be visible across 40.77 % of the Study Area). Other proposed wind farms in the Cumulative Baseline would be theoretically visible across 45.57 % of the whole Study Area and the combined visibility of all proposed wind farms, including the Proposed Development would result in overall visibility of proposed wind farms in 69.38 % of the Study Area. However, Table 4.5.1 in Technical Appendix 4.5 shows that only a small number of representative viewpoints located beyond approximately 15 km of the Proposed Development would be likely to experience views of these wind farms and these views are unlikely to be experienced in close succession with views of the Proposed Development. Furthermore, the Proposed Development would be located within an existing cluster which would already be visible in many of the same locations. It is also noted that The EIA Regulations do not require account to be taken of proposed wind farms and they are afforded less weight in the assessment of cumulative visual effects.

Table 4.4: The Proposed Development's Cumulative Zone of Theoretical Visibility

<table>
<tr><th>Cumulative ZTV Diagram (30 km radius, blade tip)</th><th>No. of turbines theoretically visible</th><th colspan="3">% of Study Area with visibility</th></tr>
<tr><td rowspan="4">Gruig Cluster of Existing and Consented Wind Farms
Figure 4.9
(page 1 of 3)</td><td>Visibility of existing and consented Gruig cluster where there is no visibility of the Proposed Development</td><td>4.04 %</td><td rowspan="3">Total % of 30 km Study Area where Gruig cluster is theoretically visible
= 42.07 %</td><td></td></tr>
<tr><td>Visibility of the Proposed Development together with Gruig cluster</td><td>38.03 %</td><td rowspan="3">Total % of 30 km Study Area where the Proposed Development is theoretically visible
= 40.77 %</td></tr>
<tr><td>Additional visibility of the Proposed Development</td><td>2.74 %</td></tr>
<tr><td>0 turbines visible</td><td>55.19 %</td><td colspan="2"></td></tr>
</table>

Cumulative ZTV Diagram (30 km radius, blade tip)	No. of turbines theoretically visible	% of Study Area with visibility		
Existing and Consented Wind Farms Figure 4.9 (page 2 of 3)	Visibility of existing and consented wind farms where there is no visibility of the Proposed Development	33.29 %	Total % of 30 km Study Area where existing and consented wind farms are theoretically visible = 73.14 %	
	Visibility of the Proposed Development together with other wind farms	39.85 %		Total % of 30 km Study Area where the Proposed Development is theoretically visible = 40.77 %
	Additional visibility of the Proposed Development	0.92 %		
	0 turbines visible	25.94 %		
Proposed Wind Farms Figure 4.9 (page 3 of 3)	Visibility of proposed wind farms where there is no visibility of the Proposed Development	28.61 %	Total % of 30 km Study Area where other proposed wind farms are theoretically visible = 45.57 %	
	Visibility of the Proposed Development together with other proposed wind farms	16.96 %		Total % of 30 km Study Area where the Proposed Development is theoretically visible = 40.77 %
	Additional visibility of the Proposed Development	23.81 %		
	0 turbines visible	30.62 %		

4.191 As previously noted the Proposed Development would become part of the Gruig cluster which comprises of existing and consented wind farms but would increase overall theoretical visibility of this cluster by only 2.74 %. In the majority of representative viewpoints used in this LVIA other existing wind farms would also be simultaneously visible within the same field of view as the Proposed Development which would therefore appear as part of an established pattern of similar developments rather than as a new standalone feature. The Proposed Development would only increase overall visibility of existing and consented wind farms across the wider Study Area by 0.92%. Proposed wind farms tend to be located elsewhere in the Study Area where they would be perceived sequentially as one moves through the Study Area and therefore, when considered as a standalone wind farm, the Proposed Development would increase overall visibility of proposed wind farms by 23.81%. However, this would be substantially reduced if it were to be considered alongside visibility of the existing and consented elements of the Gruig cluster which are already visible across 42.07% of the Study Area.

4.192 The Proposed Development would increase the overall size of the Gruig cluster but would occupy a less elevated position in a convex site to the south of Gruig wind farm and below the prominent skyline position of both the existing Corkey and consented Corkey Re-Power wind farms. It is also noted that the replacement of the existing Corkey wind farm with a lesser number of larger turbines would enhance the appearance of the Gruig cluster by reducing the difference in turbine sizes across the Gruig cluster as a whole and by reducing the number of turbines which would occupy the most prominent skyline position in this cluster.

4.193 In relation to different turbine sizes it is noted that there is currently a 46.5 m difference in overall tip height between the smallest and largest turbines in the Gruig cluster[11]. This would increase to a difference of 70 m when Corkey is replaced with Corkey Re-Power and Corkey Extension would become the smallest turbine in the cluster[12]. If the Proposed Development were to be consented the difference in tip height from Corkey Extension, would increase to 113 m. However, this element of the Gruig cluster would be located on the northern side of Slievenahanaghan hill and would rarely be clearly visible in a manner that would make it directly comparable to the Proposed Development. The Proposed Development would be more clearly comparable to the consented Corkey Re-Power and existing Gruig wind farms and would have an overall difference in tip height of 43 – 80m between these two wind farms. However, it is also noted that this equates to only a 6 m increase from the difference (of 37m) between Gruig and Corkey Re-Power, the latter which occupies a more prominent skyline location than the Proposed Development.

[11] Corkey turbines have an overall blade tip height of 53.5 m; Altaveedan and Gruig turbines have blade tip heights of 100m.

[12] Corkey Re-Power has a blade tip height of 137m; Corkey Extension has a blade tip height of 67 m

4.194 In relation to rotor dimensions, the difference between smallest and largest rotors in the current cluster is 43 m (Corkey versus Altaveedan and Gruig). This would increase to 73 m when Corkey is replaced by Corkey Re-Power and Corkey Extension becomes the smallest rotor. It would further increase to 94 m if the Proposed Development were to be compared to Corkey Extension. However, the Proposed Development would more often be directly comparable to Gruig and Corkey Re-Power where the overall difference in rotor diameters would be only 21 – 58 m which would reduce rather than increase the apparent differences in rotor dimensions.

4.195 In relation to hub height dimensions, the difference between smallest and largest hubs in the current cluster is 25 m (Corkey versus Altaveedan and Gruig). This would increase to 33.5 m when Corkey is replaced by Corkey Re-Power and Corkey Extension becomes the lowest hub. It would further increase to 66 m if the Proposed Development were to be compared to Corkey Extension. However, the Proposed Development would more often be directly comparable to Corkey Re-Power and Gruig where the overall difference in hub heights would be only 32.5 - 51 m.

4.196 In general the SPG notes that separation distances ranging from 6 km for smaller sites in landscapes with some enclosure to 12 km for larger sites in open exposed landscapes are desirable to prevent the landscape becoming dominated by wind farms and to reduce intervisibility (see paragraph 4.83 for further detail)[13]. Separation distances between the established Gruig, Long Mountain and Elginny Hill clusters range from approximately 9.2 km – 10.8 km at present and the three clusters are frequently clearly intervisible with each other. The Proposed Development would decrease these distances to 10.3 km and 7.9 km respectively which would still be within the acceptable range recommended in the SPG and would not cause the Gruig cluster to move substantially closer to either Long Mountain or Elginny Hill, or any other wind farms in the Cumulative Baseline.

4.197 The Proposed Development would have a significant cumulative visual effect on three of the four Viewpoints – Viewpoints 1, 2 and 4 - which were deemed to experience significant visual effects and for the same reasons as previously described from paragraph 4.129. This is because significant effects arising in views represented by these Viewpoints are related to the Gruig cluster and are located within approximately 5 km of the Proposed Development where it, and other wind farms in this cluster, is clearly visible and prominent. In Viewpoints 1 and 2, the Proposed Development would, in conjunction with the consented Corkey Re-Power wind farm, substantially increase visibility of the Gruig cluster from which is currently not significantly visible from Corkey village. However, it is noted that, in these views, the Corkey Re-Power turbines would be more prominently located at a higher elevation above the village and the majority of the five consented turbines

[13] Section 3.2 of the SPG

would be visible whereas in Viewpoint 2 only three of the turbines in the Proposed Development would be clearly visible. In Viewpoint 1 there would be no visibility of the Proposed Development due to the school buildings in the foreground but, from further along Reservoir Road it is also likely that only three of the proposed 12 turbines would be clearly visible.

4.198 Although Viewpoint 3 would experience significant effect resulting from the Proposed Development, the incremental cumulative effects are not deemed to be significant because all other wind farms in the Gruig cluster are, or would already be clearly visible from this direction and the Proposed Development would not substantially increase the geographical extent of turbines. It would also appear on a lower saddle of land between Slievenahanaghan and Skerry Hill with a partial backdrop of rising ground. Whereas Corkey re-Power would be prominently located on the highest part of the skyline and three additional single turbines would also appear on the skyline and extend the spread of turbines further to the right-hand side/ south.

4.199 In views represented by Viewpoint 4, which is located at close range (1.84 km) to the south, the Proposed Development would appear in front of Gruig and Corkey Re-Power. The latter, although more prominently located on the skyline, would appear to be of a lesser scale and extent. The screening effect of Skerry and Slievenahanaghan hills is not evident from this location and the Proposed Development which would become the dominant element of the Gruig cluster when viewed from this location. Altaveedan would not be visible from this direction although there are a number of single turbines visible at close range to the far right-hand side/ south of the view illustrated in Figure 4.13.

4.200 The Proposed Development would have no significant cumulative visual effect on the remaining 23 representative viewpoints in this LVIA. This includes several other viewpoints within 5 km of the Proposed Development and all four representative viewpoints within the Antrim Coast and Glens AONB. Across the majority of the Study Area and from the majority of representative viewpoints the Proposed Development's location as an integral part of an established cluster of wind farms means that its effects on the wider Study Area and in conjunction with other wind farms would not be significant.

Table 4.5: Summary of Cumulative Visual Effects on Viewpoints

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of cumulative visual effect	Significance of cumulative visual effect
Category A: Locations primarily representing views from settlements and rural roads with residential properties within 5 km of the Proposed Development						
1	Corkey Village at Reservoir Road junction	1.87 km to T1	Prominent	High	High	Significant
2	Corkey Village at Ballyweeny Road junction	2.04 km to T1	Prominent	High	High	Significant
3	Junction of Ballyweeny and Ballyveely Roads	3.96 km to T1	Prominent	High to Low	High	Not Significant
4	Omerbane Road near Tullykittagh Road	1.84 km to T5	Dominant	High to Low	High	Significant
5	Skerry West at Omerbane Road junction	2.05 km to T5	Visible	Medium to Low	Medium	Not Significant
Category B: Locations primarily representing views from settlements and the connecting road network within 5 – 10 km of the proposed Development						
6	Altarichard Road, Magherahoney	8.47 km to T1	Visible	High	Low	Not Significant
7	Dunloy Village	8.48 km to T1	Visible	Medium to Low	Low	Not Significant
8	Killygore Road near A43 at Martinstown	7.83 km to T5	Visible	High to Low	Low	Not Significant
9	Glen's Brae, Lisbreen near Martinstown	7.06 km to T5	Visible	High to Low	Low	Not Significant
10	Layby on B94 at edge of Cloughmills	5.14 km to T3	Visible	Low to High	Medium	Not Significant
Category C: Locations primarily representing views from within the Antrim Coast and Glens Area of Outstanding Natural Beauty						
11	Altnahinch Road at Skerry	0.55 km to	Dominant	Low	Low	Not

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of cumulative visual effect	Significance of cumulative visual effect
	Hill	T12				Significant
12	Old Cushendun Road to north of Altnahinch Road	1.76 km to T12	Prominent	High to Low	Negligible	Not Significant
13	Trostan summit, Moyle Way	4.65 km to T12	Prominent	High	Negligible	Not Significant
14	Slemish summit	17.48 km to T5	Visible	High	Negligible	Not Significant
Category D: Locations primarily representing views from the A26 and A44 road corridors						
15	A26 near Ballymena	10.11 km to T5	Visible	Low to High	Medium	Not Significant
16	Bridge over A26 near Logan's, Cloughmills	6.12 km to T2	Visible	Medium to Low	Low	Not Significant
17	A26 Frosses Road near Ballymoney	12.07 km to T1	Visible	Medium to Low	Negligible	Not Significant
18	Drones Road, A44 at Ballynagashel	8.68 km to T1	Visible	Medium to Low	Negligible	Not Significant
19	Armoy village at GAA carpark, A44	11.64 km to T1	Visible	Medium to Low	Negligible	Not Significant
Category E: Locations primarily representing views from the Causeway Coast and Glens Area of Outstanding Natural Beauty						
20	A2 at Magheraboy near Ballintoy	23.26 km to T1	Visible	Medium to Low	Negligible	Not Significant
21	Causeway Coast scenic drive near Giant's Causeway	27.37 km to T1				
22	Round Hill near Portballintrae and Dunluce	27.67 km to T1				
Category F: Locations primarily representing views of the Development from the wider Study Area beyond						

Viewpoint		Approx. distance to nearest turbine (km)	Visual Prominence	Sensitivity of key visual receptors	Magnitude of cumulative visual effect	Significance of cumulative visual effect
15 - 20 km						
23	**Granagh Road near Cullybackey**	**15.43 km to T5**	**Visible**	**Medium**	**Negligible**	**Not Significant**
24	**Seacon Beg near Ballymoney**	**19.77 km to T1**	**Visible**	**Medium to Low**	**Negligible**	**Not Significant**
25	**Tildarg Hill near Wolf Bog**	**25.12 km to T5**				
26	**Tardree Mountain**	**26.11 km to T5**				

Information Gaps

4.201 There are no known gaps in the information that has been used in this LVIA. However, it has not been possible to refine the grid reference taken on site for Viewpoint 13, Trostan summit through the use of Google maps because there is not clearly defined path visible on the ground or on the satellite imagery. The grid reference used is accurate to 3.65 m as noted in paragraph 4.44 of the methodology described in Technical Appendix 4.2

Future Baseline – The 'No Change' Scenario

4.202 Under the "no change" scenario, were the Proposed Development not to be constructed, it is anticipated that the site would be continued to be used in much the same manner as it currently is and the immediate surroundings would continue to be influenced by human activity including the Gruig cluster of wind farms. Human activity is constantly changing the landscape and it is important that the implications of these changes are considered and understood so that the intrinsic qualities of the landscape may be retained and enhanced where possible rather than destroyed or compromised. The key trends are identified in the NILCA, SCA and RLCA and are also implied by the baseline character of the Study Area at present:

- There are existing wind farms within and surrounding the Study Area. Based on the number of consented wind farms in the cumulative baseline it is likely that more wind farms will be developed within the Study Area

and across Northern Ireland to meet climate change commitments. Some of these are likely to be intervisible with the Proposed Development and they will continue to influence the overall landscape and visual character of the Study Area. The dimensions of wind turbines will continue to increase in order to maximise efficiency and productivity. It is also likely that the current trend of developing cleaner renewable energy sources will continue and become more environmentally acceptable given the predicted effects of climate change and the necessity to tackle these effects;

- Climate change is likely to have the biggest implications on the landscape and its users in the future. Broadly, climate change will be characterised by a general increase in unpredictable weather conditions which will inevitably impact upon all areas of life. River levels are likely to rise and there will be an associated loss of buildings in the flood plain and changes to land uses, including farming practices which characterised the majority of the landscape within the Study Area at present. There will be a loss of habitats associated with the erosion of river banks, lough shores and coastlines which support unique combinations of plants and animals. Flooding will become more frequent and cause damage to the interiors and structures of buildings which will, in turn affect both the appearance and presence of vernacular buildings which are currently an integral part of the physical landscape character;
- Demographic change is creating the need for a large number of additional dwellings in the countryside which creates pressures on infrastructure. In particular the rural landscape at the edge of existing settlements will continue to experience pressure for built development and ribbon development along road corridors that link these settlements together, such as the secondary and tertiary road network's in this Study Area. In the open countryside the presence of derelict buildings signifies a loss of traditional built vernacular and a loss of biodiversity and vegetation associated with a decline in the management of rural field boundaries and farmland;
- Continued expansion and upgrading of the road network is likely to occur alongside built development. Improvements to existing secondary roads are also likely (e.g. straightening, widening and increased signage) will have cumulative negative impacts on local landscape character by eroding local patterns and causing the loss of roadside trees, hedgerows, stonewalls and bridges in much the same way as the recent upgrading of the A26 road corridor has done;
- There is an ongoing trend towards the amalgamation of small farms with the associated loss of traditional buildings and vernacular features, loss of hedgerows and trees to create larger fields. This is having a detrimental

impact on the general quality and condition of the rural landscape character. There is also a trend, however, for farmers to diversify into more traditional farming techniques, husbandry of traditional breeds, and the provision of tourist attractions and accommodation. This often has positive landscape impacts. Current forestry grant schemes encourage farmers to plant more broadleaved trees for amenity and wildlife benefits and in the future this should strengthen the character of farmed landscapes. However, converting fields to coniferous plantations or selling it for housing development will continue to be a detrimental force, particularly if wetter weather renders areas of rough grazing land unviable for livestock. The Proposed Development of renewable energy projects such as wind and solar farms will continue to allow landowners the means to manage and use land for farming in conjunction with energy generation;

- Commercial forestry on a large scale is detrimental to landscape character as it conceals the intricate pattern of the landscape and often occupies visually prominent positions in upland areas. Peat cutting alters the undulating topography and creates abrupt and artificial changes in level. This activity, particularly as it has become mechanised, also destroys natural vegetation and habitats. Where land becomes too wet to farm forestry is likely to become an attractive alternative. This may provide the opportunity to continue the current shift from coniferous plantations to broadleaved forestry which will in turn have a potentially positive impact on landscape character, visual amenity and ecological function;
- Agriculture is one of Northern Ireland's major industries. Pasture is likely to remain the dominant agricultural land-use but warmer temperatures will also enable spring cereal crops to be grown as well as an increase in the use of pesticides. This has the potential to alter the appearance of agricultural parts of the Study Area in the future.

Mitigation and Enhancement Proposals

Mitigation Proposals

4.203 Mitigation proposals in specific response to landscape and visual effects include:

- The exterior surfaces of the turbines will be painted in a recessive, non-reflective light grey colour to minimise their visual prominence against the sky in most weather conditions;
- Ancillary facilities, such as the control building, substation and energy storage compounds, have been designed in a manner that is sensitive to the immediate landscape character with regards to location, scale, colour, and choice of materials. The sub-station and control building and energy storage compound will be located in a part of the site that is not clearly visible from most parts of the Study Area as noted in paragraph 4.23;

Enhancement Proposals

4.204 Habitat management proposals in the area around turbines T1 and T2, and to the west of these 2 turbines will encourage the re-establishment of heath for the benefit of breeding waders via grazing and water level management. These measures will in turn enhance the physical quality and condition of the landscape in this part of the site.

Residual Effects

4.205 Potential landscape and visual effects were addressed throughout the iterative design development. This resulted in the Proposed Development as it is now proposed and therefore potentially significant effects have been minimised prior to the LVIA being carried out as part of the EIA. Beyond this, the proposed mitigation measures will help to minimise the effect of certain aspects of the Proposed Development. However, there would be no resulting change in the overall significance of effects. Therefore the residual effects are the same as those already identified.

Overall Significance of Landscape and Visual Effects

4.206 In terms of both landscape and visual effects the Proposed Development conforms to the general principles laid out in the policy and best practice guidance which are broadly promotive of renewable energy developments as a means of mitigating against the effects of climate change. The BPG states that, given their importance, is it important for society at large to accept wind farms as a feature of the Region for the foreseeable future and that, whilst some locations may be highly visible, this does not necessarily render them unacceptable. The BPG also notes that groups of turbines can normally appear acceptable as single isolated features in open, undeveloped landscapes and this principle can be applied to the Proposed Development's position within its landscape and visual context. The Proposed Development also conforms to the majority of the nine landscape and visual character issues that the SPG notes should be considered for wind energy developments within the Antrim Plateau region. Furthermore, its visibility from key parts of the Study Area such as the coast and within glens, and also from locations beyond approximately 5 km is particularly limited.

4.207 The Proposed Development is not located within a designated landscape and would have very limited visibility from either of the two AONBs which are located within the Study Area.

4.208 The Proposed Development is located in conformance with the SPG's guidance for LCA 118 Moyle Moorlands and Forests. The proposed site location is within part of the LCA which the SPG notes is of least sensitivity due to the convex nature of the topography, the current land uses, the limited extent of visibility and physical influence on the AONB, elevated upland areas and coastline and also its capacity to

utilise the existing infrastructure of the adjacent Gruig wind farm. Therefore, whilst the Proposed Development would have a direct physical effect on the part of the LCA within which it is located, it would be well located and its overall effect on landscape character would not be significant.

4.209 The Proposed Development may have indirect effects on the landscape character of some other parts of the Study Area amounting to small areas of seven other LCAs which are in proximity to it, or which contain viewpoints used in this LVIA. However, with the exception of LCAs 59 and 117, which form the central pastoral lowlands directly to the south and west of the Proposed Development, the majority of these LCAs are located beyond 10 – 15 km away and are unlikely to experience any discernible effects on their physical landscape character resulting from the Proposed Development. In relation to these other LCAs the magnitude of effects resulting from the Proposed Development would range from medium to negligible. Sensitivity would range from high to negligible depending on whether the LCAs would be located in relatively close proximity to the Proposed Development or at a greater distance and to what extent existing and consented wind farms define the physical landscape character of these LCAs and their settings (see Technical Appendix 4.3 table 4.3.1). However, in no instances are the physical effects on landscape character deemed to be significant.

4.210 The Proposed Development is located on the western-facing side of the Antrim Plateau and LCA 118. It is also positioned between the higher ground formed by Slievenahanaghan and Skerry Hill directly to the north and south. These topographical features would effectively prevent views of the turbines from the majority of the AONB. The higher ground of Long Mountain Ridge on the western side of the Study Area has a similar effect by preventing visibility further to the west. Areas of clear visibility are typically located in the central part of the Study Area on upland areas adjacent to the Proposed Development and in the pastoral lowlands between the two upland areas to the east and west.

4.211 Of the 26 Viewpoints which have been selected to represent typical views of the Proposed Development within the Study Area only four would experience significant visual effects resulting from the Proposed Development. These are Viewpoints 1 – 4 in Category A. All are located within approximately 5 km and from where the Proposed Development would be both prominent and visible in its entirety or near-entirety from rural roads and areas of settlement. These viewpoints are also all located to the west of the Proposed Development in the uplands adjacent to the site of the Proposed Development. There are no significant effects from close range Viewpoints located to the south or east of the Proposed Development, although this includes locations within and adjacent to the Antrim Coast and Glens AONB. From the majority of the Study Area and the majority of the AONB the Proposed Development would either have no visibility or no significant visual effects.

4.212 In relation to cumulative effects the overall magnitude of cumulative effects on landscape character is deemed to be of low magnitude and not significant and this is due to the existing character of the site and immediate surroundings which are already largely characterised by a number of man-made influences. The Proposed Development would have a significant cumulative visual effect on three of the four Viewpoints – Viewpoints 1, 2 and 4 - which were deemed to experience significant visual effects. This is because significant effects arising in views represented by these Viewpoints are related to the Gruig cluster and are located within approximately 5 km of the Proposed Development where it, and other wind farms in this cluster, is clearly visible and prominent. The Proposed Development would have no significant cumulative visual effect on the remaining 23 representative viewpoints in this LVIA. This includes several other viewpoints within 5 km of the Proposed Development and all four representative viewpoints within the Antrim Coast and Glens AONB. Across the majority of the Study Area and from the majority of representative viewpoints the Proposed Development's location as an integral part of an established cluster of wind farms means that its effects on the wider Study Area and in conjunction with other wind farms would not be significant. It is also noted that wind farms are not an uncommon feature in approaches to the AONB and there is already a repeating pattern of wind farms and single turbines across other parts of the Study Area and around the edges of other AONBs.

4.213 The Proposed Development would have no significant effects on landscape character and limited visibility across the wider Study Area as a whole. This is expressed by only five of the 26 representative viewpoints experiencing significant visual effects, and only four experiencing significant cumulative visual effects. Therefore, the LVIA concludes that the Proposed Development is acceptable in landscape and visual terms.

List of Appendices

- Technical Appendix 4.1: LVIA Plates, Tables and Figures, Glossary and References
- Technical Appendix 4.2 LVIA Methodology
- Technical Appendix 4.3 Landscape Character Areas
- Technical Appendix 4.4 Viewpoint Selection
- Technical Appendix 4.5 Cumulative Baseline

Summary List of Figures

- Refer to Technical Appendix 4.1 for detailed list

- Figures 4.1 – 4.4: Baseline Assessment Figures including landscape designations and classifications; landscape character; viewpoint selection; and cumulative baseline
- Figures 4.5 – 4.9: Zone of Theoretical Visibility Diagrams
- Figures 4.10 – 4.31: Viewpoint Visualisations