Visualisation Methodology

1.1 Introduction

1.1.1 The purpose of this methodology is to provide an understanding of how visualisation material prepared to support the planning application for the Proposed Development has been produced. The methodology addresses the production of photomontages.

1.1.2 It should be recognised that production of visualisations is only one component of a Landscape and Visual Impact Assessment (LVIA), which will consider a range of other factors when identifying and assessing changes to the landscape and to views. The use of visualisations is a useful aid when undertaking LVIA, but the assessment process is not dependent on them. LVIA may be undertaken without use of visualisation material, although for major developments the inclusion of visualisations is accepted practice.

1.1.3 Current good practice regarding the production of visualisations is set out in:

- Landscape Institute (2011) *Photography and photomontage in landscape and visual impact assessment. Landscape Institute Advice Note 01/11*;
- Landscape Institute (2017). *Visual Representation of Development Proposals. Technical Guidance Note 02/17*;
- Landscape Institute (2018) *Photography and Photomontage in Landscape and Visual Impact Assessment. Landscape Institute Technical Guidance Note Public Consultation Draft 2018-06-01*; and
- Scottish Natural Heritage (2017) *Visual Representation of Wind Farms. Version 2.2*

1.1.4 It should be noted that whilst the last of the documents listed above was published specifically with wind energy development in mind, it does contain information that is more widely applicable and indeed, the Landscape Institute do recognise that it may be helpful in other situations.

1.2 Photography

1.2.1 Refer to the LVIA (ES Volume 1, Chapter 9) for details of photographic viewpoint locations and the process by which these were selected.

1.2.2 All photography for this assessment was taken using a digital single-reflex lens (DSLR) camera with a full-frame sensor, using a 50mm lens. The camera was mounted on a tripod to ensure a stable support and minimise camera shake. The camera was mounted on a panoramic tripod head with built-in spirit level, which

allows for the rotation of the camera at fixed intervals around a fixed point in vertical alignment with the camera lens, thereby eliminating parallax error. The camera is levelled using an auto-leveller device. Camera height was 1.5 m above the ground.

1.2.3 Photographs were taken over a full 360 degree sweep from each viewpoint location. The precise location of each photograph was recorded using a hand-held GPS device, and an accompanying spreadsheet was completed recording information about the viewpoint.

1.3 3D Model

1.3.1 A digital model of the Proposed Development was supplied by the Project Architect. This was imported into industry standard software (Autodesk 3DStudioMax), along with the viewpoint data recorded by the handheld GPS (as discussed above). This enables a series of 'camera' points to be created within the model, reflecting the view from each viewpoint towards the Proposed Development.

1.3.2 A series of markers were added to the models, representing real-world locations such as topographic features, electricity pylons, vegetation and buildings. The locations of these markers were determined via the use of aerial imagery (e.g. Google Earth) and by the Environment Agency's 1m Digital Surface Model (DSM) LIDAR data.

1.3.3 The models were then lined up with the individual photograph that focuses on the Site. The markers were used to ensure that the model lines up as accurately as possible with the photograph (by matching the markers with the real-world equivalent), and to assist with identifying which features in the photograph would appear 'in front' of the Proposed Development, which would appear 'behind' and which, if any would be removed.

1.3.4 Once the models are lined up as accurately as possible, the Proposed Development was rendered, having regard to the particular materials and colours that are to be used, insofar as these are known at this stage

1.4 Photomontages

1.4.1 Photomontages are computer generated images, showing images of the Proposed Development superimposed upon the existing photography, with the aim of producing a visualisation that should give a realistic impression of how the Proposed Development would appear within the landscape.

1.4.2 In some instances, where new planting is proposed in order to mitigate against adverse visual effects, a series of photomontages are produced, which illustrate the anticipated height of proposed vegetation approximately 10 years after planting.

1.4.3 Following the lining up of the 3d models with the photograph that includes the Site, and the rendering of the Proposed Development, the full sweep of photos taken from each viewpoint were stitched together using the software package PTGui. The software reads the exif data attached to each individual photograph file to identify the specifications of the camera and lens, ensuring accurate production of the stitched panoramic image.

1.4.4 The stitched viewpoint image was loaded into Adobe Photoshop. Any parts of the Proposed Development that would not be visible from an individual viewpoint due to the presence of intervening features were cropped out.

1.5 Presentation & Viewing

1.5.1 Once the final viewpoint images have been produced, they are inserted into a Figure template, which also includes information about the viewpoint, including the date and time of photography, details of the camera used, and British National Grid coordinates.

1.5.2 It should be understood that viewpoint visualisations can never provide an exact match to what is experienced in reality. Visualisations are tools in the assessment process but independent from it. They illustrate the likely change in view in the context of a specific date, time and weather conditions, that would be seen within a photograph and not as seen by the human eye. As such, visualisations need to be used in conjunction with site visits and should be considered in the context of the totality of views experienced from the viewpoint and not just focussed on the proposed development.

1.5.3 Best practice guidance published by the Landscape Institute in 2011 (*Photography and photomontage in landscape and visual impact assessment. Landscape Institute Advice Note 01/11*), and reiterated in draft replacement guidance published for comment in 2018 (*Photography and Photomontage in Landscape and Visual Impact Assessment. Landscape Institute Technical Guidance Note Public Consultation Draft 2018-06-01*) identifies that all photographs have a theoretical viewing distance at which the scale of the view is reconstructed (the mathematically correct 'principal distance'), where the perspective displayed in the photograph reflects the actual real-world perspective at the location the photograph was taken from.

1.5.4 In relation to the photomontages presented on Figures 9.2a-j of the ES, these are displayed as follows.

1.5.5 The first sheet (or for Figures 9.2c, d, f, and g the first set of sheets) shows the existing view in the top pane, and the photomontage including the Proposed Development in the bottom pane. The principal distance for the first sheet is 418mm. The horizontal field of view shown is approximately 53.5 degrees. This first sheet provides context to the existing view and to the changes in view that would result from the Proposed Development.

1.5.6 The second sheet (or for Figures 9.2c, d, f, and g the second set of sheets) shows an enlarged photomontage, which has a principal distance of 812.5mm. The horizontal field of view shown is approximately 27 degrees. This sheet (when held at a comfortable arm's length) can be used in the field to give a good impression of the apparent size of the Proposed Development when seen from the viewpoint.

1.5.7 This approach to presentation of images is informed by guidance produced by Scottish Natural Heritage (*Visual Representation of Wind Farms. Version 2.2*), and also reflects the Landscape Institute's draft replacement guidance (as referenced above). For the avoidance of doubt, the photomontages displayed on Figures 9.2a-j of this EIA Report should be printed on the paper stated on each Figure. Figures 9.2c, d, f and g extend across multiple pages due to the breadth of view illustrated.

1.5.8 For a geometrically accurate representation, the page should be held at the principal distance (stated on the page) from the eye, and either be viewed curved at an angle that reflects the field of view of the image (which is also stated on the page), or should be viewed by panning the eye across the page. It is recognised that to do this is both difficult and impractical, and the principal distance is provided chiefly for technical

comparison purposes. As such, it is recommended that the printed images are simply viewed held flat at a comfortable arm's length.