

Methodology Statement (THC)

Introduction

This Methodology Statement has been prepared to accord with the requirements of Visualisation Standards for Wind Energy Developments (The Highland Council, 2016), and accompanies the visualisations prepared in accordance with this guidance document. It does not relate to the separate set of visualisations prepared in accordance with guidance published by Scottish Natural Heritage.

Photography

Refer to Chapter 11, Landscape and Visual for details of the process by which viewpoints were selected and agreed with The Highland Council (THC). All photography for this assessment was taken using a digital single lens reflex (DSLR) camera with a full-frame sensor, using a 50 mm lens (Canon EOS 5D Mk II). 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 was levelled using an auto-leveller device. Camera height was 1.5 m above the ground level.

Photographs were taken over a 180 degree sweep from each viewpoint location. The precise location of each photograph was recorded using a hand-held GPS device. All photographic images were taken in landscape format.

Post Photographic Processing

The individual on-site photographs were stitched together using the software package PTGui, to produce a single panoramic image using cylindrical projection. The specifications of the camera and camera lens are used to ensure the most accurate production of the final panoramic image.

Wireframe

The panoramas are subsequently matched to wireframe images, produced using Landvu (a landscape wireframe modelling software package developed by Envision). Ordnance survey Landform Terrain 5m data was used to generate the wirelines, and the panoramas matched based on local topography. Some additional data from the Ordnance Survey Openmap Local vector layers sets were also used to improve the accuracy of these matches, mainly forestry and building layers.

Wireframes are produced based on GPS locations collected on site, with some micro-adjustment used to improve the accuracy of the matches. The wireframes include the effects of earth curvature and assume a viewer height of 1.5m above the Ordnance Survey terrain height.

After matching, wireframes were also produced using the site CAD model to show the extent of the proposed development. Levels from the CAD model were also used to generate a revised DTM to show the extent of any changes to the terrain associated with the development, particularly around the Headpond.

Photomontages

Photomontages are computer generated images, where 3D rendering software is used to produce a realistic impression of the proposed development, which is then blended into the existing photograph. Alongside the proposed structure associated with the Headpond and Tailpond, changes to access tracks, local roads and forestry are also included in order to show how the proposed development will appear within the landscape.

A combination of software packages were used to create the photomontage. Sketchup has been used to render the built structures within the development (such as the intake and outtake structures associated with the Headpond and Tailpond). POVray is also used to model large areas of forestry based on shapefile information giving the species, planting density and heights of different areas of forestry. Changes to forestry are shown at both year 1 and year 15, in order to demonstrate both the initial visibility of the site immediately after construction, and the effects of forest reinstatement schemes.

The different layers of the photomontages were subsequently organised in Adobe Photoshop, and the photomontage work referred back to wireline drawings to ensure the locational accuracy of each layer.

Presentation

The photomontages and wireframes are to be presented using The Highland Council Guidelines (Visualisation Standards for Wind Energy Developments, The Highland Council, 2016).

The Highland Council page layouts present a larger number of images, and include montages presented on the original single frame photographs. Wider context images are shown using a planar, 65.5 degree field of view, showing the original photography, and montages for year 1 and year 15. Photomontages (both year 1 and year 15) are then presented for single 50mm frames, and for 75mm equivalent crops of the 50mm single frame. A viewpoint map is also included, which illustrates the different fields of view used for the page layouts.

It is important to note that because the Development comprises a number of components that extend across a relatively wide geographic area, it has not always been possible to present the Development centrally within the panorama. The original 50 mm photograph which forms the centre of the panorama has consequently been centred on the most important element of the Development, which will vary depending on the viewpoint location and direction of view.