VISUALS

Bowsheil Solar Farm

Technical Appendix 6.2: Visuals Methodology

May 2025

Overview

The process of generating photomontages and photo-wires for the Bowsheil Solar Farm project was carried out by FTR Visuals.

High quality/resolution photographs were taken from the agreed locations by FTR Visuals. A georeferenced model was constructed to OSGB36.

Site Visit

FTR Visuals visited the site in 2025 to obtain viewpoint photography. The tripod positions were photographed for reference.

The work fully complies with the following guidance:

NatureScot - Visual Representation of Wind Farms Guidance. Version 2.2 February 2017

The Highland Council - Visualisation Standardss for Wind Energy Developments - July 2016

Landscape Institute - Visual Representation of Development ProposalsTechnical Guidance Note 06/19 - 17 September 2019

Preparation

Following a formal instruction from the client, the scope of the project was agreed. The client identified a number of viewpoints and supplied a map of required view locations.

Focal length, image format, required content and context was agreed prior to the site visit. The photographer was familiar with the scope of the project and read any relevant information that was made available by the client.

Photography

The site visit was done in February 2025, and consideration was made to:

- Forecast weather conditions
- Shot itinerary based on sun position/time of day
- Access / distance to site / duration of journey to site and required time on site
- Suitable parking

Equipment used

- Camera (Sony A7IV)
- 50mm lens (Sigma 50mm F1.4 DG DN | Art Lens - E-Mount)
- SD cards, 128GB
- Remote cabled shutter release
- Tripod with indexed/panoramic head (ARTCISE AS80C 63.8”)
- Panoramic Tripod Head (Andoer)

Lens Selection Criteria

In order to capture appropriate and relevant context, it was agreed that a 50mm lens should be used in combination with a panoramic tripod head. A series of shots were taken (with the camera in landscape and portrait orientation) to form panoramic photographs for each view location.

FTR VISUALS LTD
(+44) 7445691206 yannis@ftrvisuals.co.uk ftrvisuals.co.uk

On site procedure

1. Based on the order of viewpoints on the itinerary, each view location was visited.
2. The tripod was erected and camera attached, along with the 50mm lens.
3. The height of the lens' central axis above ground level was measured and set to 1.50m using the tape measure.
4. Using a camera phone, shots were taken of the tripod.
5. RAW files capture only to avoid loss of dynamic range and image quality.
6. Enabled highlight warning
7. Used 'Live View' and zoom function to fix and verifiy focus on the site.

Panoramic Shots

- A 360 degrees horizontal field of view was determined to include the site and sufficient relevant context, vertical field of view was also considered based on height of the proposals and proximity to the site - the views were very close to the site, so the camera was set in both landscape and portrait orientaion.
- The tripod was levelled using the tripod mounted level.
- A minimum of 50% shot overlap must was achieved with the camera. The panoramic tripod head assembly was adjusted to rotate incrementally at approximately 50% of the total horizontal field of view of the selected lens with the camera is in portrait orientation.
- The panoramic tripod head was adjusted to centre the lens nodal point to the rotational axis of the tripod. It was important to ensure this is set to the correct measurement in order to avoid parallax.
- With the camera centred on the site, 'live view' and x10 magnification was enabled and an appropriate point was identified to focus on.
- Once focused, and accounting for conditions, the correct exposure was achieved by adjusting the shutter speed.
- The panorama was shot from left to right, through the panorama attempting where possible to avoid cars and any other moving objects.
- Shots were previewed to check the quality, focus, highlight warning and histogram for the shots to ensure that a well exposed usable set of photographs had been captured.

Post Processing Photos

The RAW files were processed in Adobe Photoshop

Settings were adjusted to achieve the best exposure, contrast sharpening, and noise reduction.

Stitching Photos

The photos were stitched in PTGui software as 360° cylindrical panorama photos.

Processing

Using Adobe Camera Raw, simple and standard digital photo processing techniques were applied ie sharpening, noise reduction and chromatic aberration correction. Settings were adjusted as necessary to achieve the best exposure, shadow detail and clarity.

Using Adobe Photoshop, the processed RAW files were stitched to form panorama of cylindrical projection.

FTR VISUALS LTD
(+44) 7445691206 yannis@ftrvisuals.co.uk ftrvisuals.co.uk

Photo-wire Images

The wirelines are produced using the 3Ds Max, Resoft and Photoshop softwares to generate a cylindrical persepective.

The 3Ds Max creates a 3D model of the existing terrain using topo data (OS Terrain 5) and models representing the specified geometry and position of the proposed development.

Photo-wire images in 90 degree field of views have been created for each viewpoint.

The 90 degree field of view images are showing the visual effect of the proposed development for each viewpoint. But these images do not take to account of the screening effects by any intervening objects and vegetation

Photomontage Images

Photomontages have been produced in order to provide a ‘photorealistic image’ of the Project.

3DS MAX was used to create accurate 3D models and lighting conditions for each viewpoint.

The photomontage is produced by digitally combining the wrendered images onto the baseline photograph.

Limitations of visualisations

The photomontage visualisations are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye.

The photomontage visualisations have a number of limitations when using them to form a judgement on visual effect. These include:

- A photograph will never capture as much detail as the eye would see in the field, it therefore follows that a photomontage can never truly capture the sense of perspective and detail which would be possible in reality;
- It should be recognised that baseline photographs on which photomontages are based can, at best, only ever be a ‘flattened’ 2D representation of what the eye sees in 3D on site;
- A visualisation can never show exactly what the development will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image;
- The 2D images do not give the scale and the distance to the project. In reality, the development at different distances would appear in varying degrees of sharpness;
- A 2D static image cannot convey movement such as blade rotation.
- Images should be held flat at a comfortable arm’s length. If viewing these images on a wall or board at an exhibition, stand at arm’s length from the image presented to gain the best impression.

FTR VISUALS LTD
(+44) 7445691206 yannis@ftrvisuals.co.uk ftrvisuals.co.uk