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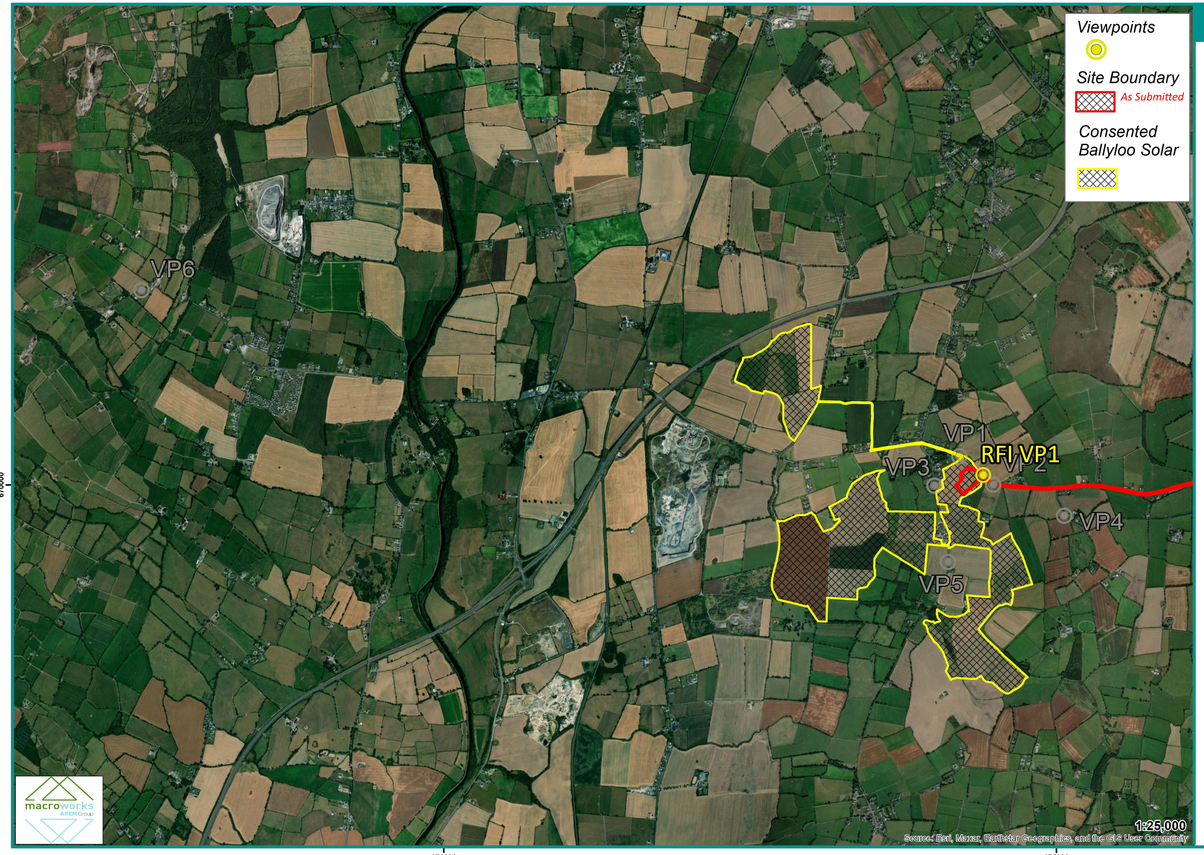
RFI PHOTOMONTAGES

Ballyloo SID Substation & Grid Connection

August 2026



LVIA I TVIA I Landscape Design I Visibility Analysis I Glint and Glare I Verified Photomontages I CGI I Shadow Flicker Analysis



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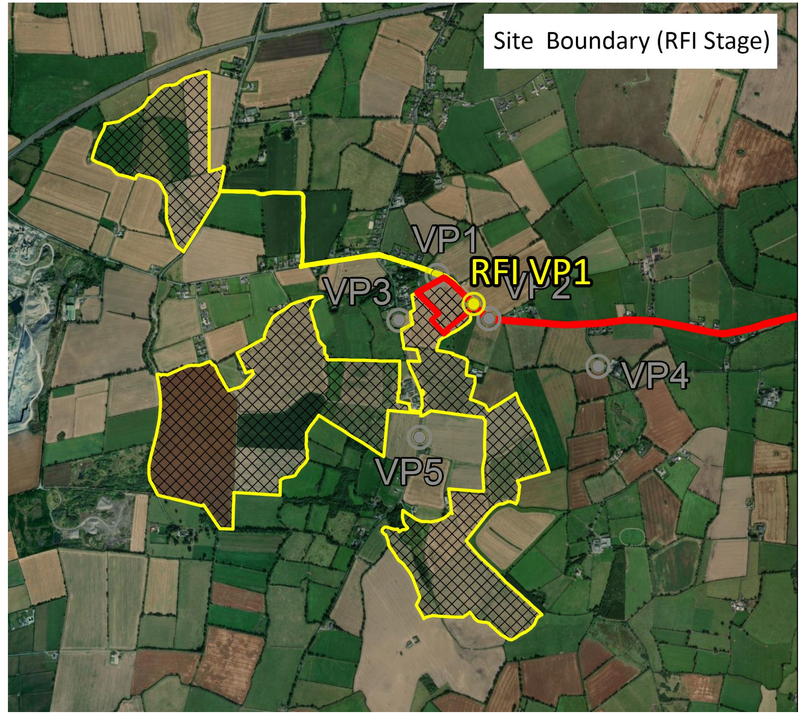
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MACRO WORKS METHOD STATEMENT - Verified View Photomontage Production

Introduction

There is no industry-standard definition of what constitutes a ‘verified photomontage’, and it has been applied in two different ways, namely in terms of image size/scaling, and the accuracy of the camera location. Both are essentially concerned with the ability to audit the accuracy of the visual material.

The Landscape Institute Technical Guidance Note 06/19 – Visual representation of development proposals (TGN 06/19) states that:

“Visualisations should provide the viewer with a fair representation of what would be likely to be seen if the proposed development is implemented and should portray the proposal in scale with its surroundings. In the context of landscape/townscape and visual impact assessment, it is crucial that visualisations are objective and sufficiently accurate for the task in hand. In short, visualisation should be fit for purpose.”

Macro Works has produced the Verified View Montages (VVM) included in this document in accordance with TGN 06/19, guidance which is broadly consistent with Scottish Natural Heritage (now NatureScot) ‘Visual Representation of Wind Farms’ 2017. This guidance advocates a proportionate approach and appropriate levels of accuracy to the production of visual material.

In the context that the visual material is to accompany a planning application, Macro Works has followed a highly accurate and verifiable process to accurately communicate the scale, appearance, context, form, and extent of development, and ensure that the visual material is accurate, objective, and unbiased. The VVM are considered consistent with Type 4 in the guidance.

The photography was captured during good weather conditions with high levels of visibility. Photography has been taken to a very high standard in accordance with the guidance, and locational information is captured with a high degree of accuracy with regard to location and elevation.

The locations of the visualisations have been identified through the Landscape/Townscape and Visual Impact Assessment (LVIA or TVIA) process, and produced from 3D model information received from project architects/engineers.

This methodology has been prepared by Macro Works to explain the production of the VVM, ensuring the process is transparent and auditable.

Photography and GPS/GNSS Data

At the agreed locations, high-quality photography is captured in RAW format using either a Canon 5D Mark II or Canon 6D Mark II Full Frame Sensor camera. A Manfrotto tripod and panoramic head and leveller are used to ensure the photography is taken level and at consistent angles to ensure consistent overlapping.

Viewpoint locations are captured by inhouse trained personnel using a survey-grade GNSS unit and made compatible with the GIS referenced drawings of the proposed development. Where deemed necessary, the camera location is paint-marked and photographed and subsequently surveyed by a qualified topographical surveyor. In these circumstances, surveyors are given the photograph locations, together with marked-up photography that shows elements in the view (parapet heights, kerbing, lamp posts, etc.) that are to be surveyed as control points for model alignment within the panorama.

TGN 06/19 advocates the use of a 50mm prime lens as the industry standard, and this is the default approach adopted. In urban contexts, where a 50mm lens cannot fully capture the proposed development, the guidance accepts the use of alternative fixed-length prime lenses (Appendix 11, P.28). This approach is adopted dependent on the proximity of the development.

Following the site visit, RAW images are processed via Adobe Lightroom and panoramas are stitched and generated using the recommended industry standard software, PTGui Pro.

Post Production and Formatting

Post-production, the rendered image is taken into Adobe Photoshop where it is ‘masked’ into the existing captured panorama. This essentially involves ensuring that anything in the foreground of the proposals is brought in front of the rendered image.

Adjustments are made as required to ensure that the lighting, reflections, and material characteristics of each render are accurate to the time and date of the photography and that the images meet GDPR standards (via blurring faces and car registrations, etc.).

Proposed mitigation is added where indicated via a Landscape Mitigation Plan.

Each VVM is subject to a thorough review and approval process which includes discussions with project engineers and architects to ensure it accurately reflects the architectural proposals.

3D Modelling and VVM Creation

The proposed development is accurately modelled into a 3D environment in GIS mapping software and 3DS Max 2023 using a combination of data sources (REVIT files, AutoCAD drawings, DTM/DSM data etc.) received from the project architects and engineers.

Virtual 3D cameras are positioned according to the survey coordinates, and the focal length is set to match the captured photography.

For rural projects, the visualisation preparation methodology recommended in the Scottish Natural Heritage 2017 ‘Visual Representation of Wind Farms’ is strictly followed. This involves the creation of 360° wirelines using GIS software, which perfectly match the generated panoramas and 3DS Max renders for each viewpoint. This allows for the development to be accurately placed within the captured photography.

For urban projects, camera matching or photographic alignment is a method by which a combination of data is used to produce an accurate camera match for each view. Virtual 3D cameras are positioned and the captured photography is then placed into the background of the 3DS Max Viewpoint. The surveyed information is then matched to the existing buildings in the photography.

Where appropriate, colour palettes and material references provided by the wider design team are applied to the model to provide a real-world representation. To ensure a high degree of accuracy, renders of the development are generated from 3DS Max 2023 with identical image characteristics to that of the baseline photography, including reference to the date and time of capture.

Image Presentation

The objective of Type 4 visualisation is to present a printed image which gives a realistic impression of scale and detail.

VVMs are presented in accordance with the TGN 06/19 guidance, and final views are formatted into a booklet using Adobe InDesign, with all accompanying information relating to the photography, modelling, topography, post-production and viewpoints included.

For each viewpoint location, a 90° Horizontal Field of View (HFoV) cylindrical baseline photograph is provided to allow a 96% enlargement contextual reference. Image enlargement of 150% is recommended in the guidance (where feasible) to allow for binocular image scaling when printed, which results in an image with a 53.5° HFoV. Where this is not feasible because of proximity, or infrastructure occupying a wide field of view well beyond 53.5° that would necessitate splitting the view across multiple images, 90° HFoV cylindrical images are presented to avoid confusion for the viewer. A bounding box illustrates the extent of a 53.5° image where this is the case.

This document contains a site location map with VVM locations plotted, and all reference information, including photography, modelling, topographic, post-production, formatting, viewpoint and viewing instructions.



Ballyloo SID Substation & Grid Connection - RFI Photomontages

Viewpoint Ref: RFI VP1a L3050 at Ballyloo, entrance to the proposed substation

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Easting (ITM):	674404
Northing (ITM):	670081
Direction of View:	226 °
Distance to Site:	0.0086 km
Elevation:	99.7 m

Horizontal Field of View:	90˚ (cylindrical projection)
Principal Distance:	522 mm
Paper size:	841 x 297 mm
Correct printed image size:	820 x 251 mm
Enlargement Factor:	96%

Date and Time:	202608/06 10:14
Camera:	Canon SD Mark II Digital SLR
Lens:	Canon Fixed 50mm Full Frame Sensor
Panoramic Head:	Manfrotto Pano Head/Leveller
Camera Height:	1.7m (AGL)

Photography Software:	Adobe Lightroom
Panorama Stitching Software:	PTGui Pro
Post-Production Software:	Adobe Photoshop
Formatting Software:	Adobe Illustrator/InDesign

Modelling Software:	3DS Max 2023
Rendering Software:	Mental Ray/Corona
GNSS Unit:	Trimble Catalyst (GNSS)
Topographical Data:	LiDAR/OSI Terrain Data
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90° Outline View - Option A

indicating physical position and scale of the proposed and consented development irrespective of screening



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90˚ Baseline View



Ballyloo SID Substation & Grid Connection - RFI Photomontages

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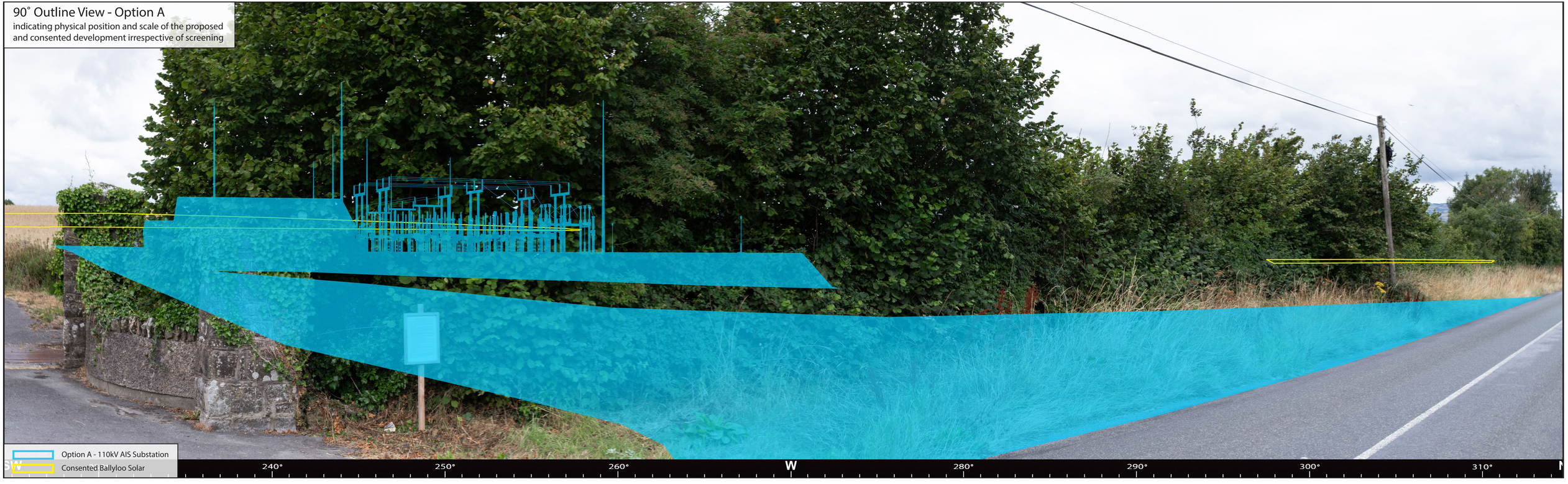
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90˚ Outline View - Option A

indicating physical position and scale of the proposed and consented development irrespective of screening



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90˚ Photomontage - Option A



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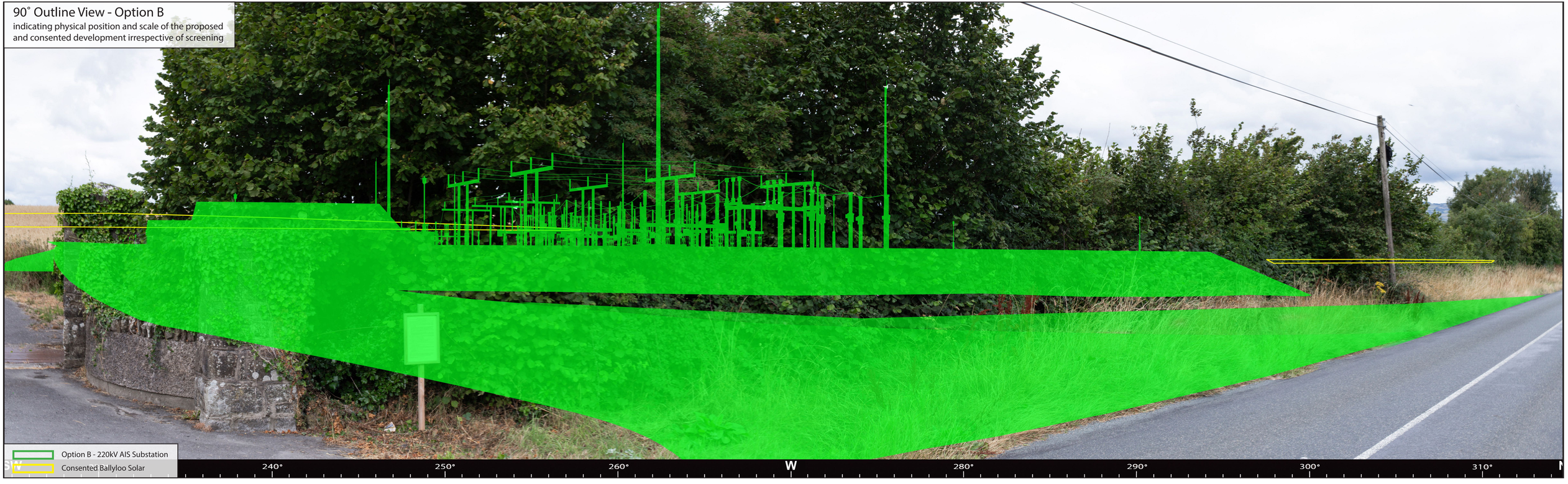
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90˚ Outline View - Option B

indicating physical position and scale of the proposed and consented development irrespective of screening



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90˚ Photomontage - Option B



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90˚ Outline View - Option C

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Date and Time:	202608/06 10:14
Camera:	Canon SD Mark II Digital SLR
Lens:	Canon Fixed 50mm Full Frame Sensor
Panoramic Head:	Manfrotto Pano Head/Leveller
Camera Height:	1.7m (AGL)

Photography Software:	Adobe Lightroom
Panorama Stitching Software:	PTGui Pro
Post-Production Software:	Adobe Photoshop
Formatting Software:	Adobe Illustrator/InDesign

Modelling Software:	3DS Max 2023
Rendering Software:	Mental Ray/Corona
GNSS Unit:	Trimble Catalyst (GNSS)
Topographical Data:	LiDAR/OSI Terrain Data
GPS Ref:	Georeferenced/Surveyed DWGS

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90˚ Photomontage - Option C



Ballyloo SID Substation & Grid Connection - RFI Photomontages

Viewpoint Ref: RFI VP1b L3050 at Ballyloo, entrance to the proposed substation

Visualisation Type 4 - This 90˚cylindrical projection panorama has been captured, prepared and presented in accordance with the guidance set out in the Landscape Institute Technical Guidance Note 06/19 for Type 4 Visualisations and the Scottish Natural Heritage 2017 guidance 'Visual Representation of Wind Farms'. This image has been presented in a 90˚ cylindrical format to aid visual comprehension of linear infrastructure occupying a wide FoV, which avoids splitting the view across numerous multiple images.

Easting (ITM):	674404
Northing (ITM):	670081
Direction of View:	270 ˚
Distance to Site:	0.0086 km
Elevation:	99.7 m

Horizontal Field of View:	90˚ (cylindrical projection)
Principal Distance:	522 mm
Paper size:	841 x 297 mm
Correct printed image size:	820 x 251 mm
Enlargement Factor:	96%

Date and Time:	202608/06 10:14
Camera:	Canon 5D Mark II Digital SLR
Lens:	Canon Fixed 50mm Full Frame Sensor
Panoramic Head:	Manfrotto Pano Head/Leveller
Camera Height:	1.7m (AGL)

Photography Software:	Adobe Lightroom
Panorama Stitching Software:	PTGui Pro
Post-Production Software:	Adobe Photoshop
Formatting Software:	Adobe Illustrator/InDesign

Modelling Software:	3DS Max 2023
Rendering Software:	Mental Ray/Corona
GNSS Unit:	Trimble Catalyst (GNSS)
Topographical Data:	LiDAR/OSI Terrain Data
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