

Scotland England Green Link 2 - English Onshore Scheme

Environmental Assessment Report:
Volume 3

Appendix 8B: Visualisations

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For: National Grid Electricity Transmission

Quality information

Prepared by	Checked by	Verified by	Approved by
Minchen Liang	Ruth Mauritzen	John Devenny	Michael Williams

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Prepared for:

National Grid Electricity Transmission

Prepared by:

AECOM Infrastructure & Environment UK Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com

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1. Visualisations

This appendix of the Environmental Statement (ES) provides an overview of the approach and methodology used to produce the visualisations which support the landscape and visual assessment, followed by a series of visualisations from each of the visual assessment representative viewpoints, as listed below:

- Figure 8B-1: Viewpoint 1: Fraisthorpe Beach Coastal Car Park
- Figure 8B-2: Viewpoint 2: Public Right of Way east of Little Kelk
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- Figure 8B-11: Viewpoint 11: Public Right of Way north of Drax Village
- Figure 8B-12: Viewpoint 12: Public Right of Way near Pear Tree Avenue
- Figure 8B-13: Viewpoint 13: Public Right of Way east of Carlton
- Figure 8B-14: Viewpoint 14: Public Right of Way, Newland

The type and scope of visualisations was agreed in consultation with East Riding of Yorkshire Council and Selby District Council and includes type 1 visualisations (annotated baseline photography) for the majority of viewpoints, supplemented with type 3 visualisations (photomontages) of the converter station from the following locations:

- Viewpoint 9: Viewpoint 9: Barmby Barrage
- Viewpoint 10: Public Right of Way near Wren Hall
- Viewpoint 11: Public Right of Way north of Drax Village
- Viewpoint 12: Public Right of Way near Pear Tree Avenue
- Viewpoint 13: Public Right of Way east of Carlton
- Viewpoint 14: Public Right of Way, Newland

Type 3 visualisations have been produced for two scenarios, providing an indication of how the English Onshore Scheme would appear at year 1 of operation, and year 15 of operation. These are linked to the temporal scope of the assessment, with the year 1 visualisations providing an impression of the likely worst case and year 15 visualisations demonstrating the influence of proposed mitigation planting as it becomes established and begins to mature.

1.1 Visualisation Method

1.1.1 Introduction

The following section sets out the approach to preparation of the visualisations and provides details of key assumptions and limitations in the use of visualisations.

1.1.2 Guidelines

The photomontages have been prepared with reference to the following good practice guidance publications:

- Visual Representation of Development Proposals Technical Guidance Note 06/19, Landscape Institute, 2019;
- Photography and Photomontage in Landscape and Visual Impact Assessment Advice Note 01-11, Landscape Institute, 2011; and
- Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute, 2013.

In addition, reference has also been made to guidance published by NatureScot. Although specific to wind farms this offers additional guidance on photography and the presentation of visualisations.

- Visual Representation of Wind Farms Version 2. 2, Scottish Natural Heritage, 2017.

1.1.3 Site Photography

The procedure for taking photography on site is described below:

- Site visits are planned around time of day and taking the weather into consideration. The photographs are best taken with the sun behind or side on to the camera. This means views facing west are best taken in the morning and views facing east in the afternoon.
- Photographs are taken using a full-frame FX format digital camera with a fixed 50mm focal length lens mounted to a panoramic head on a steady tripod.
- The camera is levelled in both pitch and roll referencing a bubble level or electronic 'virtual horizon' feature in the camera.
- Manual camera settings are used to ensure consistent exposure across all photos taken.
- The camera position is captured using Global Navigation Satellite System (GNSS) smart antennae with real time kinematic correction for increased accuracy.
- The panoramic head is rotated to the next interval using the built-in step rotator and another photo is taken ensuring sufficient overlap of one image to the next. This is repeated until a full 360° sweep of photos is taken.

1.1.4 Photo Stitching and Postproduction

When dealing with panoramic views the photographs are loaded into specialist photo stitching software. The images are automatically corrected for lens distortion and stitched to create a full 360° image. Adjustments can be made to manually correct the blend between images where appropriate.

The resulting image is output as Spherical projection to correctly match the virtual camera to be used later in the 3D software. The software can remap images as cylindrical or planar projection in accordance with LVIA requirements.

A virtual camera is positioned in the 3D software according to the same real-world position and height as per the captured GNSS location data. This camera is set-up to match the same field of view as the stitched panorama. The stitched image is then loaded as the camera back plate.

The camera target is aligned to match existing elements visible in the photograph. For Type 3 photomontages a combination of Digital OS and 3D contours is used to match features in the photography. When the landscape is particularly flat Lidar Digital Surface Model (DSM) is used to obtain existing structures to aid a match.

The daylight settings in the scene are matched to the time and location of the original photography.

The proposed design is modelled and placed at the correct geo-referenced position. The virtual camera views are rendered and composited into the background photography. The images are adjusted to mask the correct parts of the render behind existing elements in the photography and to erase existing features from the view that will be removed as part of the project. Proposed mitigation planting and earthworks is then added, where relevant.

In accordance with TGN 06/19, the panoramic images, where required to show sufficient landscape context have been displayed using a cylindrical projection. As explained in TGN 06/19 Appendix 8, Section 8.3, cylindrical images can be difficult to view as a printed image especially for close viewpoints, such as Viewpoint 10, where cylindrical panoramas will look unrealistic. Section 8.4 explains that using a planar projection can overcome the ‘curved distortion’ which can occur with a cylindrical image. Consequently for Viewpoint 10 (which is located in very close proximity to the converter station), a planar projection has been applied. Whilst TGN 06/19 advises that for planar projection a horizontal field of view (HFoV) of around 60° should be used to avoid the increasing distortion that can be present towards the edges of the panorama, this also loses the landscape context otherwise present in a wider HFoV. Consequently for Viewpoint 10, a 90° HFoV has been used to maintain the landscape context whilst reducing the curved distortion which would otherwise be present with a cylindrical projection.

1.1.5 Assumptions and limitations

The converter station indicated in the photomontages is based on the maximum parameters of the English Onshore Scheme (30 m from a finished platform level of 6.48 m AOD), as described in ES Chapter 03: Description of the English Onshore Scheme. The colour of the converter station photomontage is indicative only and used to provide an indication of the worst case scenario of scale and massing. The final building heights, materials and colours will be determined at the detailed design stage.

The photomontages for year 1 of operation assume that all construction activities would be completed, with all temporary structures and elements removed, earthworks reprofiling completed and grass seeding established.

The photomontages for year 15 of operation are intended to provide an indication of how the English Onshore Scheme would appear in the longer term once proposed mitigation planting has established. Mitigation planting is based on that shown on the outline landscape plan (Figure 8-5 of the ES). A conservative approach to tree heights (up to 8m) has been applied to proposed planting in the photomontages. In reality the planting may reach a greater height at year 15 and will continue to grow and mature beyond this timeframe.

It is important to note that visualisations are not able to show exactly what a proposed development will look like in reality but provide a reasonable representation of the scale and distance of the structures and their relationship to existing features in the view. Where existing features, such as vegetation and/or structures are removed from the existing view background features are added based on interpretation of photography and observations in the field. Visualisations should be reviewed in the field at the viewpoint location in order to form the best impression of the existing context and potential change.

1.2 Visualisations