

Photomontages

Section 10

10.1 Photomontages

The DGR's state that the EA must *"include photomontages of the project taken from potentially affected residences (including approved but not yet developed dwellings or subdivisions with residential rights), settlements and significant public view points..."*

Whilst it is possible for any residential dwelling with a view toward the Project turbines to be potentially affected (with a resultant high, moderate or low impact), it is not feasible or practical to prepare a photomontage for each and every residential dwelling within the Project 10 km viewshed.

A total of 11 photomontage locations were selected to represent uninvolved residential dwellings and public view locations from surrounding road corridors. The photomontages locations are illustrated in **Figure 18** and are presented in **Figures 19 to 40**.

10.2 Photomontage preparation

The photomontages have been prepared with regard to the general guidelines set out in the Scottish Natural Heritage (2006) Visual representation of windfarms: good practice guidance and British Landscape Institute Advice Note 01/11 (March 2011) Photography and photomontage in landscape and visual impact assessment.

Photography for the photomontages was undertaken by GBD using tripod mounted Nikon D700 a digital single-lens reflex (SLR) camera. A 50 mm focal length prime lens was attached to the Nikon D700 and D90 SLR cameras.

The Nikon D700 has a full frame image sensor (36 x 23.9 mm Nikon FX format), and when mounted with a 50mm lens results in a single photographic image with a view angle equivalent to a 35 mm SLR camera with a 50 mm lens. The 50 mm lens is commonly utilised, and cited in landscape and visual assessment manuals and guidelines, for the preparation of landscape and visual assessment photomontages. Following site photography the photomontages were generated through the following steps:

- a digital terrain model (DTM) of the Project site was created from a terrain model of the surrounding area using digital contours;

- the site DTM was loaded in the G-L Garrad Hassan ‘WindFarmer’ software package;
- the layout of the wind farm and 3D representation of the wind turbine was configured in WindFarmer;
- the location of each viewpoint (photo location) was configured in WindFarmer – the sun position for each viewpoint was configured by using the time and date of the photographs from that viewpoint;
- the view from each photomontage location was then assessed in WindFarmer. This process requires accurate mapping of the terrain as modelled, with that as seen in the photographs. The photographs, taken from each photomontage location were loaded into WindFarmer and the visible turbines superimposed on the photographs;
- the photomontage were adjusted using Photoshop CS3 to compensate for fogging due to haze or distance, as well as screening by vegetation or obstacles; and
- the final image was converted to JPG format and imported and annotated as the final figure.

Table 20 identifies the eleven photomontage locations, property names (where relevant), corresponding reference number identified in the residential view matrix (**Table 19**) as well as the status of each photomontage location.

Table 20 – Photomontage details

Photomontage Location	Figure Reference	Status: Residential (uninvolved) Road corridor
L2 Rotherwood Road	Figure 19 and 20	Unsealed road corridor (minor local road)
L3 Rotherwood Road	Figure 21 and 22	Sealed road corridor (minor local road)
L5 Glenwood	Figure 23 and 24	Uninvolved and unoccupied residential dwelling
L7 Bill's block	Figure 25 and 26	Uninvolved residential dwelling
L8 Turee Vale Road	Figure 27 and 28	Sealed road corridor (minor local road)

Table 20 – Photomontage details

Photomontage Location	Figure Reference	Status: Residential (uninvolved) Road corridor
L9 Cassilis Road	Figure 29 and 30	Sealed road corridor (local road)
L10 Coolah	Figure 31 and 32	Sealed road corridor (local road)
L11 Cooks Road	Figure 33 and 34	Sealed road corridor (minor local road)
L13 Warung State Forest Road	Figure 35 and 36	Unsealed road corridor (minor local road)
L14 Pandoras Road	Figure 37 and 38	Unsealed road corridor (minor local road)
L23 St Antoine	Figure 39 and 40	Uninvolved and unoccupied residential dwelling

The horizontal and vertical field of view within the majority of the photomontages exceeds the parameters of normal human vision. However, in reality the eyes, head and body can all move and, under normal conditions, the human brain will ‘see’ a broad area of landscape within a panorama view. Each of the Liverpool Range photomontage panoramas indicates the extent of a single photograph within the full extent of the panorama.

Whilst a photomontage can provide an image that illustrates a photo realistic representation of a wind turbine in relation to its proposed location and scale relative to the surrounding landscape, this LVIA acknowledges that large scale objects in the landscape can appear smaller in photomontage than in real life and is partly due to the fact that a flat image does not allow the viewer to perceive any information relating to depth or distance.

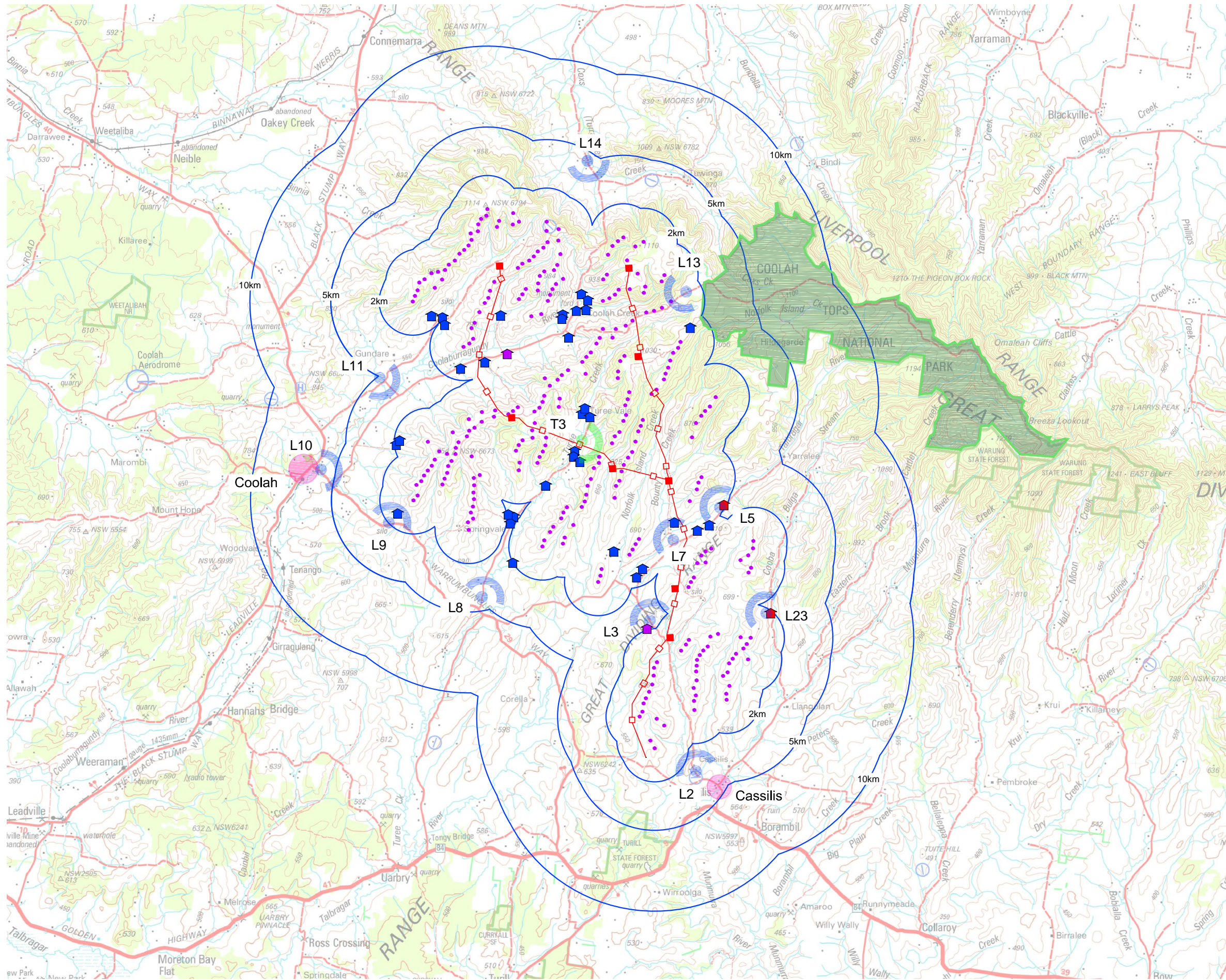
The British Landscape Institute states that *‘it is also important to recognise that two-dimensional photographic images and photomontages alone cannot capture or reflect the complexity underlying the visual experience and should therefore be considered an approximate of the three-dimensional visual experiences that an observer would receive in the field’.*

10.3 Photomontage verification

Photomontages prepared for wind farm developments are sometimes claimed not to represent the correct relative scale of the wind turbines within the baseline panorama or single photographic images. Whilst modern windfarm industry software, such as WindFarmer, is able to produce correctly scaled turbines within photomontages, GBD undertook to independently verify the scale of the Liverpool Range wind turbines within the photomontages.

The verification process involved the direct photographic comparison of constructed and operational wind turbines at the Gunning wind farm development with those presented in the photomontages.

The results of the verification are illustrated in **Figure 41**, and demonstrate that the wind turbines in the Liverpool Range photomontages are proportional relative to distance when compared to photographs of existing and operation wind turbines photographed at the same distance.



Legend










-  Involved residential dwelling within 2 km of wind turbine
-  Uninvolved residential dwelling within 2 km of wind turbine
-  Uninvolved residential dwelling beyond 2 km of wind turbine
-  Photomontage location
-  Photomontage location (powerline refer Figure 54)
-  Coolah Tops National Park
-  Proposed Liverpool Range wind turbine (indicative layout)
-  Distance from proposed Liverpool Range wind turbine
-  Proposed 330 kV powerline route

Figure 18
Photomontage location

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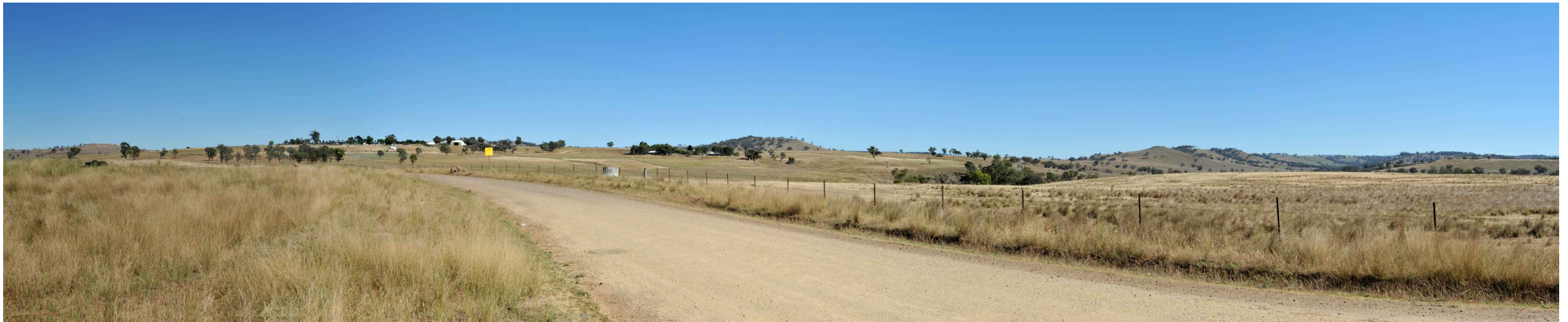
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0km 10km





Public view location L2 Rotherwood Road - Existing view west to north north east. Photo coordinate Easting:780570 Northing:6455467 (MGAz55)



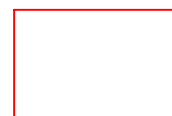
Public view location L2 Rotherwood Road- Proposed view through 120°. Approximate distance to closest visible wind turbine 3 km

Notes

Composite panorama photograph taken with a Nikon D700 digital SLR camera with 50 mm prime lens.
 Individual panorama photograph coordinate map datum is MGAz55 to ± 5 m.
 Extent of potential wind turbine visibility and directional bearing illustrated on each photomontage is indicative only.

The Nikon D700 digital SLR camera with a 50mm lens results in a single photograph with a view angle equivalent to a 35mm digital SLR camera photograph taken with a 50mm lens.

Refer Figure 18 for photomontage locations



Indicative extent of a single frame photograph (in landscape format) taken with the Nikon D700 digital SLR camera with a 50mm lens



Extent of wind turbines visible in panorama

Figure 19
Photomontage Location L2
Rotherwood Road

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Indicative extent of a single frame photograph (in landscape format) taken with the Nikon D700 digital SLR camera with a 50mm lens

Photomontage location L2 Rotherwood Road- Proposed view through 47°. Approximate distance to closest visible wind turbine 3 km

Figure 20
Photomontage Location L2
Rotherwood Road

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Public view location L3 Rotherwood Road - Existing view west north west to north north east. Photo coordinate Easting:777806 Northing:6465161 (MGAz55)



Public view location L3 Rotherwood Road- Proposed view through 120°. Approximate distance to closest visible wind turbine 3.9 km

Notes

Composite panorama photograph taken with a Nikon D700 digital SLR camera with 50 mm prime lens.

Individual panorama photograph coordinate map datum is MGAz55 to ± 5 m.

Extent of potential wind turbine visibility and directional bearing illustrated on each photomontage is indicative only.

The Nikon D700 digital SLR camera with a 50mm lens results in a single photograph with a view angle equivalent to a 35mm digital SLR camera photograph taken with a 50mm lens.

Refer Figure 18 for photomontage locations



Indicative extent of a single frame photograph (in landscape format) taken with the Nikon D700 digital SLR camera with a 50mm lens



Extent of wind turbines visible in panorama

Figure 21
Photomontage Location L3
Rotherwood Road

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Indicative extent of a single frame photograph (in landscape format) taken with the Nikon D700 digital SLR camera with a 50mm lens

Photomontage location L3 Rotherwood Road- Proposed view through 47°. Approximate distance to closest visible wind turbine 3.9 km

Figure 22
Photomontage Location L3
Rotherwood Road

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Public view location L5 Glenwood (unoccupied residential dwelling) - Existing view south west to north east. Photo coordinate Easting:782499 Northing:6471879 (MGaz55)



Public view location L5 Glenwood (unoccupied residential dwelling)- Proposed view through 120°. Approximate distance to closest visible wind turbine 1.8 km

Notes

Composite panorama photograph taken with a Nikon D700 digital SLR camera with 50 mm prime lens.

Individual panorama photograph coordinate map datum is MGaz55 to ± 5 m.

Extent of potential wind turbine visibility and directional bearing illustrated on each photomontage is indicative only.

The Nikon D700 digital SLR camera with a 50mm lens results in a single photograph with a view angle equivalent to a 35mm digital SLR camera photograph taken with a 50mm lens.

Refer Figure 18 for photomontage locations



Indicative extent of a single frame photograph (in landscape format) taken with the Nikon D700 digital SLR camera with a 50mm lens



Extent of wind turbines visible in panorama

Figure 23
Photomontage Location L5
Glenwood (Uninvolved and
unoccupied residential dwelling)

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