

5.0 LANDSCAPE CHARACTER

5.2.4 LCU 4: COMOBELLA

The Comobella LCU includes Comobella, Comobella road and the land to the east of Montefiores Nr Elong Elong Road. The LCU incorporates the northern section of Mitchell Creek and Yarindury State Forest to the north.

The landscape quality of this LCU has been rated as low - moderate.

CHARACTER	LANDSCAPE QUALITY RATING		
	LOW	MEDIUM	HIGH
LANDFORM & SCALE			
LANDCOVER			
SETTLEMENT & HUMAN INFLUENCE			
MOVEMENT			
RARITY			
INTERVISIBILITY WITH ADJACENT LANDSCAPES			

TABLE 9: LCU 4 Comobella Landscape Quality Rating



Comobella Road



Windora Road



Grazing land

VIEWS:

Views from the Comobella LCU are typically vast towards the east. A number of local rises and foreground vegetation obstruct most views out of the LCU and therefore the proposed wind farm would be screened from view in most parts.

TOPOGRAPHY:

The LCU is typified by low undulating hills ranging in elevation from 300 - 500 metres. The landscape is generally sloping with a local relief from 40-100m. There are some local rises that slightly incline at a grade of approximately 3-10%.

ROADS / INFRASTRUCTURE:

Montefiores Nr Elong Elong Road is a sealed local travel corridor which runs along the eastern edge of the LCU in a north south direction from Montefiores (north of Wellington) to Comobella. A number of unsealed and some unnamed minor roads run off Montefiores Nr Elong Elong Road servicing properties to the east and west. Comobella Road runs off Montefiores Nr Elong Elong Road to the east connecting Comobella to Geurie.

VEGETATION:

Vegetation coverage through the LCU varies, however for the most part it is typically cleared grazing land with a sparse coverage of native vegetation. Dense vegetation surrounds Comobella and riparian vegetation associated with the northern extent of Mitchell Creek. The Yarindury State Forest to the north contains a large area of retained vegetation.

LAND USE:

The land use in this LCU is dominated by grazing of improved pasture and lucerne and dryland cropping of wheat, canola, oats and legume crops. A number of isolated homesteads are scattered throughout the LCU associated with the agricultural land use.

WATERCOURSES:

The main watercourse is Mitchell Creek which runs through the LCU eventually into the Talbragar River to the north. A number of smaller intermittent water courses run through the LCU draining into Mitchell Creek.

5.0 LANDSCAPE CHARACTER

5.2.5 LCU 5: SPICERS CREEK

The Spicers Creek LCU encompasses land between Mullion Creek and Gollan Road. The LCU incorporates Spicers Creek, Spicers Creek Road, Oakley Creek Road and Browie Road. The LCU is characterised by gently undulating land with Red / Brown Soils and areas of improved pasture.

The landscape quality of this LCU has been rated as moderate.

CHARACTER	LANDSCAPE QUALITY RATING		
	LOW	MEDIUM	HIGH
LANDFORM & SCALE			
LANDCOVER			
SETTLEMENT & HUMAN INFLUENCE			
MOVEMENT			
RARITY			
INTERVISIBILITY WITH ADJACENT LANDSCAPES			

TABLE 10: LCU 5 Spicers Creek Landscape Quality Rating



Spicers Creek Road



Spicers Creek



Improved pasture along Oakley Creek Road

VIEWS:

Views from this LCU are generally contained within as a result of the local rises and vegetation. It is likely that views to the proposed wind farm would be limited from this LCU and potentially screened due to distance, topography and vegetation.

TOPOGRAPHY:

The topography of the Spicers Creek LCU is characterised by gently undulating rises and undulating low hills ranging from 280 - 560 metres above sea level. Slopes gently incline at approximately 2 - 6% and extend approximately 1500 - 3000 m.

ROADS / INFRASTRUCTURE:

Gollan Road runs along the northern edge of the LCU connecting Goolma and Gollan. A few minor unsealed roads run south off Gollan Road through the LCU. Old Station Road, Oakley Creek Road, Browie Road and Spicers Creek Road run through the LCU servicing isolated homesteads.

VEGETATION:

The LCU is mostly cleared for agricultural use however some retained vegetation occurs as open woodlands on slopes. Riparian vegetation is present in Spicers Creek and several of the smaller drainage lines.

LAND USE:

The landscape is intensely utilised for agriculture with improved pastures and large areas of cropping. Crops include wheat, oats, canola, peas and large areas of lucerne. Grazing of sheep and cattle is also undertaken in this LCU. A number of isolated homesteads are present within the LCU.

WATERCOURSES:

Spicers Creek is the main water body running through the LCU. A number of small drainage lines and intermittent water courses run through the landscape into Spicers Creek at approximately 1000 - 2000m apart.

6.0 THE PROPOSAL

6.1 PROPOSED WIND FARM LAYOUT

The proposed Bodangora Wind Farm consists of 36 wind turbines to be sited within 1km north east of Mudgee Road. The wind turbines are sited in an irregular pattern along two low ridges to the north and north west of Mount Bodangora on land between 400 - 700 metres above sea level.

The proposed development envelope spans approximately 11km from east to west and 6.5 km north to south. Spacings between the proposed wind turbines range from approximately 300 metres to 1300 metres. It important to note the layout identified in Figure 9 is based on worst case scenario and each turbine has a development envelope of 200m.

In addition to the wind turbines, associated infrastructure is included as part of the proposal. An overview of these additional components is included in Section 6.3 of this report.

6.2 WIND TURBINE DESIGN

The wind turbines proposed for the development have an overall height of approximately 150m base to blade tip from ground level. Supporting towers taper from 6 metres diameter at the base to 3 metres at the top. The three blades are approximately 56m long from the hub to the tip and have a diameter of approximately 112m (See Figure 8 and Table 12). Each wind turbine will have a generator transformer located at the base of the structure.

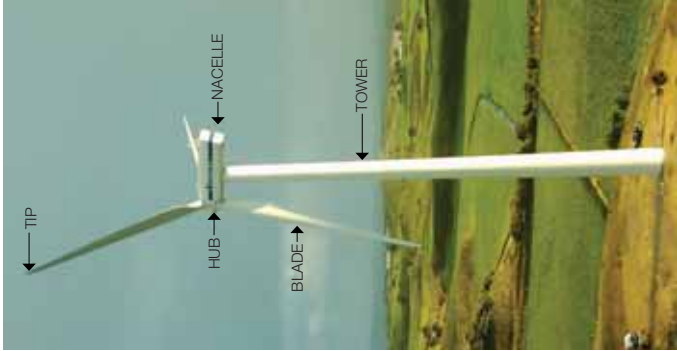


FIGURE 8: Proposed Vesta Wind Turbine.

COMPONENT	NUMBER/SIZE
Total number of Turbines	36
Hub Height (Max.)	94 metres
Blade Length	54.65 metres
Number of Blades	3
Rotor Diameter	112m
Tower (Max. Diameter)	4.2m
Overall height (to tip of blade)	150 metres
Colour	White
Swept Area	9852m2
Generator transformer	Located at the base of each turbine

TABLE 12: Details of proposed wind turbines

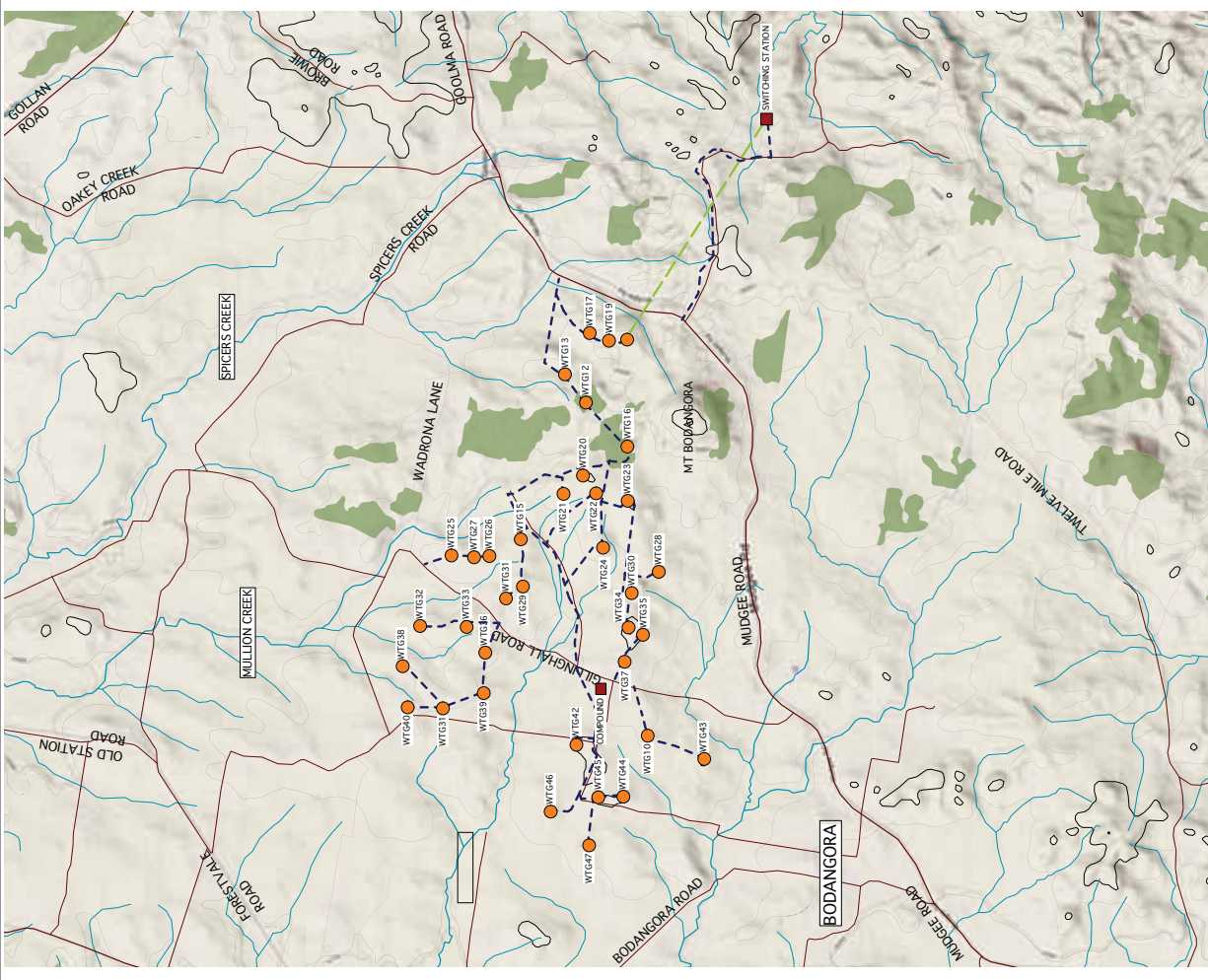


FIGURE 9: Proposed Wind Farm Layout

6.0 THE PROPOSAL

6.3 ASSOCIATED INFRASTRUCTURE

The visual character of the associated components proposed for the development of Bodangora Wind Farm which may have a visual effect are outlined in this section of the VIA.

6.3.1 Access Roads

A number of internal access tracks are proposed as part of the wind farm development. These access roads are generally proposed to be located along existing roads and between wind turbines for construction and maintenance purposes. The proposed roads are typically located to minimise cut and fill and the clearing of vegetation. Access roads are generally an extension of existing farm roads and are generally not visible from the surrounding viewpoints.

Following the installation of the turbines it is envisaged that any temporary access roads will be returned to grazing land or utilised as farm roads. Site entrances will be gated, sign posted and set back from major roads.

6.3.2 Substation

The existing Wellington electrical substation is located approximately 12.5km south west of the proposed wind farm on Mudgee Road.

6.3.3 Connection to the Grid

Individual wind turbines will be connected via underground power and control cables. An overhead power line will be used to connect the wind turbines to the switching station. The overhead power line is less than 6km long and runs between WTG 18, crossing the Mudgee Road and connecting to the proposed switching station (refer to figure 9). The proposed switching station will connect to the existing high voltage power lines that run through the landscape.



Generator Transformer (Source: Infigen Energy)



Concrete Footings (Source: Infigen Energy)

7.0 ZONE OF VISUAL INFLUENCE

7.0 ZONE OF VISUAL INFLUENCE

7.1.1 Zone of Visual Influence Process

Infigen Energy engaged Aurecon to undertake an assessment of visibility and shadow flicker effects in the vicinity of the wind farm (Refer to Appendix A). The assessment of visibility or Zone of Visual Influence (ZVI) identifies the areas of surrounding land from which the Wind Farm may be partially or completely visible. The ZVI has been determined through the use of digital topographic information and 3D modelling software.

As accurate information on the height and coverage of vegetation and buildings is unavailable, it is important to note the ZVI is based solely on topographic information. Therefore this form of mapping should be acknowledged as representing the worst case scenario. In reality the zone of visibility of the Bodangora Wind Farm is far less than that shown in the following ZVI figures due to the screening from vegetation and buildings.

Although it is possible for the development to be visible from further than 10km away, distance limits visibility greatly. The ZVI has been assessed on a distance of up to 10km (as per the Director Generals Requirements) and defines the number of visible turbines from 1-10, 11-20 and 21-37.

Following the development of the ZVI using a digital terrain model, detailed site investigations were undertaken to ground truth the findings and define a visual catchment for the proposal. The visual catchment essentially being the area of land which will have views to the wind turbines. It is from this analysis that viewpoint locations were selected for further investigation.

7.1.2 Zone of Visual Influence Results

Figure 10 on the following page illustrates the extent to which the proposed wind turbines would be visible based on a wind turbine at a height of 150m above ground level. It is important to note since the ZVI was developed, the two wind turbines indicated plan to the south east of Mudgee Road have been removed.

Due to the elevation of the proposed wind turbines and the gently undulating landscape, the modelled ZVI suggests the visual catchment extends through a large portion of the landscape. However the ZVI is based solely on topographic information and the proposed wind turbines will have a much lower visual catchment.

Overall the ZVI indicates the highest visual impact would be felt within 2km of the proposed wind turbines. Land immediately surrounding the wind turbines the ZVI shows that up to 100% of the proposed wind turbines will be visible within a 2km range. A larger percentage of wind turbines are shown to be visible towards the north east towards Comobella. As retained native vegetation covers a large portion of this land, it is likely the true ZVI would be significantly reduced.

It is illustrated that land to the south east of the proposed wind farm has a significantly lower visual

impact. Views from land to the south east appear to be obstructed by the undulating topography typical of the Mount Bodangora Landscape Character Unit. A moderate to dense coverage of vegetation forms part of the landscape character through this south eastern area of the study area and therefore the visual impact is likely to be further reduced through this area.

As the ZVI is based on topographic mapping it should be considered as a worst case scenario and is used only as a guide to select areas for further assessment. The ZVI has been included in this report to demonstrate the methodology used in the viewpoint analysis process and should not be considered to be an accurate portrayal of the visual impact.

LANDSCAPE & VISUAL IMPACT ASSESSMENT



moir landscape architecture

8.0 VIEWPOINT ANALYSIS

8.1 VIEWPOINT ANALYSIS

This part of the visual assessment report considers the likely impact that development would have on the existing landscape character and visual amenity by selecting prominent sites, otherwise referred to as viewpoints.

8.1.1 Viewpoint Selection Process

Viewpoints are selected to illustrate a combination of the following:

- Present landscape character types.
- Areas of high landscape or scenic value.
- Visual composition (eg. focused or panoramic views, simple or complex landscape pattern).
- Range of distances.
- Varying aspects.
- Various elevations.
- Various extent of wind farm visibility (full and partial visibility).
- Sequential views along specific routes.

Viewpoints have been carefully selected to be representative of the range of views within the study area. The selection of viewpoints is informed by ZVI and topographical maps, field work observations and other relevant influences such as access, landscape character and the popularity of vantage points.

A total of 35 viewpoints were taken as apart of the field work process. Of these 35 viewpoints, 30 have been selected for inclusion in the report. The viewpoints which have been included represent the areas from where the development would appear most prominent, either based on the degree of exposure or the number of people likely to be affected.

It is important to note that viewpoints for this study have been taken only from accessible public land, however this does incorporate viewpoints adjacent to residences potentially affected by the development.

8.1.2 Process of Viewpoint Analysis

Once the viewpoint had been selected, panoramic photographs were taken on a level tripod at a height of 150cm (to represent eye level). Photographs were taken with a Canon 40D digital SLR through a 50mm fixed focal lens (Equivalent to 80mm on 35mm) in portrait.

The visual impact of the viewpoint was then assessed both on site and with the topographic and aerial information to ensure accuracy. Viewpoint photographs and analysis are included on pages 24 to 53 of this report. The findings of each viewpoint analysis have been quantified and are summarised in table 13.

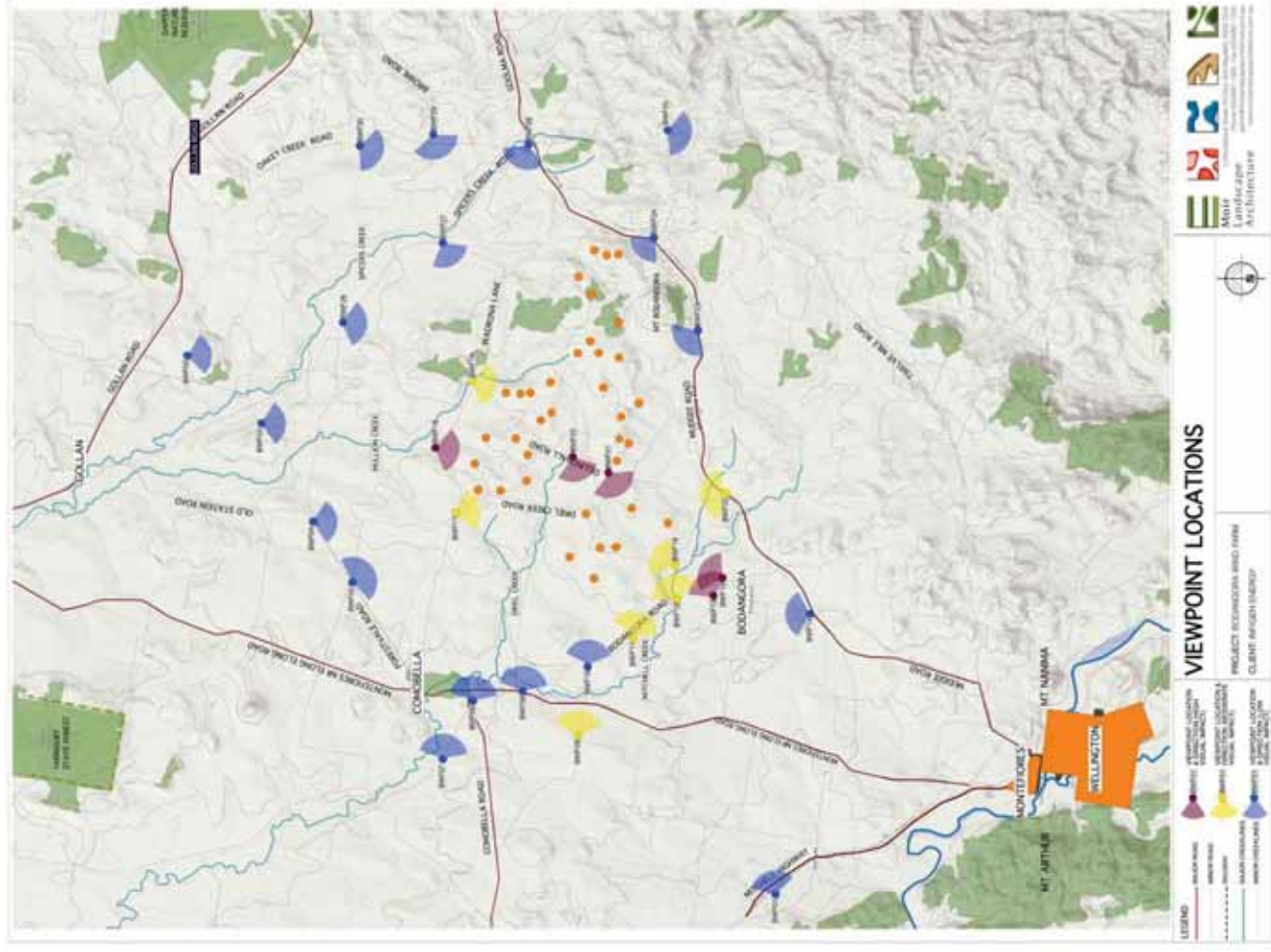


FIGURE 11: Viewpoint Locations

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF01 - Mitchell Highway



VIEWPOINT BWF01 - Mitchell Highway



Image cropped from BWF01

VIEWPOINT BWF01		Landscape Description	Potential Visual Impact
Location	Mitchell Highway	Photograph taken from a raised roadside mound along the Mitchell Highway approximately 11km north of Wellington. The Mitchell Highway is a major road connecting Dubbo and Wellington. The topography of the area is gently undulating. Views are open and expand to the distant ridge lines. The landscape is typically cleared sheep grazing land with improved pasture. Scattered groups of trees occur in the foreground.	From this viewpoint it is likely that approximately 27 of the proposed wind turbines would be visible. However due to a combination of the distance from the site and the speed of travel along the Mitchell Highway, the visual effect from viewpoint has been rated as low.
Coordinates	S 32 ° 27.596 E 148 ° 53.737		
Elevation	350m		
Viewing Distance (to nearest turbine)	12.18 km		
Viewing Direction	East		
Land use	Major Road	The visual sensitivity of this viewpoint has been rated as low. This is due to the land use as a travel corridor and the long distance to the proposed wind farm.	The potential visual impact has been rated as low from this viewpoint.
LCU	Wellington		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF02- Old Station Road



VIEWPOINT BWF02- Old Station Road



Image cropped from BWF02

VIEWPOINT BWF02		Landscape Description	Potential Visual Impact
Location	Old Station Road	View from Old Station Road approximately 1.34 km south of Gollan Road. The northern section of Old Station Road between Gollan Road and Spicers Creek is characterised by dense roadside vegetation. Photograph was taken from a clearing in roadside vegetation on top of an embankment on the southern side of the road. Land use in the area is typically open grazing land with isolated native trees. Screen planting of native vegetation can be seen in the middle ground along the boundary line. Mount Bodangora is a local high point and is visible in the distance. The visual sensitivity from this viewpoint has been rated as low.	From this viewpoint views are typically contained to the study area by local rises and road side vegetation. Approximately 32 of the proposed wind turbines would be visible from this viewpoint. Due to the distance from the proposal visual effect from this viewpoint has been rated as low. The overall visual impact from this viewpoint has been rated as low.
Coordinates	S 32 ° 16.774' E 149 ° 05.259'		
Elevation	427m		
Viewing Distance (to nearest turbine)	10.27 km		
Viewing Direction	South east		
Land use	Grazing Land		
LCU	Spicers Creek		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF03- Old Station Road



VIEWPOINT BWF03- Old Station Road



Image cropped from BWF03

VIEWPOINT BWF03		Landscape Description	Potential Visual Impact
Location	Old Station Road	View from Old Station Road towards the study area. The photograph was taken from the base of a local high point. The viewpoint is slightly elevated providing distant views towards the mountain ranges of the Dapper Nature Reserve to the east. The topography slopes away to the north east towards Spicers Creek. The land use is predominantly grazing land with small pockets of improved pasture towards the east. Views to the proposed study area are screened from this viewpoint by a combination of dense vegetation and local rises in topography to the south. The visual sensitivity from this viewpoint has been assessed as low.	From this viewpoint it is unlikely that any of the proposed wind turbines will be visible. Views to the study area are obstructed by a rise in topography and dense vegetation. This viewpoint has been included to illustrate the landscape character of Old Station Road. There would be no visual effect and therefore no visual impact resulting from the proposed development from this viewpoint.
Coordinates	S 32 ° 18.215' E 149 ° 03.683'		
Elevation	412m		
Viewing Distance (to nearest turbine)	7.09 km		
Viewing Direction	South		
Land use	Local Road / Grazing Land		
LCU	Spicers Creek		
Visual Sensitivity	Low		
Visual Effect	-		
Potential Visual Impact	-		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF04- Forrestvale Road



VIEWPOINT BWF04- Forrestvale Road



Image cropped from BWF04

VIEWPOINT BWF04			Landscape Description	Potential Visual Impact
Location	Forrestvale Road		View from Forrestvale approximately 300m north east of the end of Old Station Road. The photograph has been taken from a slightly elevated area. The landscape is gently undulating, and falls away from the road. The area is characterised by open grazing land with isolated trees and farm dams. Improved pasture and groupings of roadside vegetation occur in the mid distance. Mount Bodangora is visible in the distance and views extend to the ranges associated with Lake Burrendong are visible in the distance. The visual sensitivity of this viewpoint has been assessed as low.	From this viewpoint approximately 25 of the proposed wind turbines would be visible. Although it is likely that these wind turbines have the potential to be noticeable, a combination of the distance from the viewpoint and the speed of travel along the road results in a low visual effect. From this viewpoint the proposed wind turbines would appear as a small element in the distance. The overall visual impact of the proposed wind turbines from this viewpoint has been assessed as low.
Coordinates	S 32 ° 18.215' E 149 ° 03.683'			
Elevation	412m			
Viewing Distance (to nearest turbine)	5.89 km			
Viewing Direction	South			
Land use	Minor Road / Grazing Land			
LCU	Bodangora			
Visual Sensitivity	Low			
Visual Effect	Low			
Potential Visual Impact	Low			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF05- Forrestvale Road



VIEWPOINT BWF05- Forrestvale Road

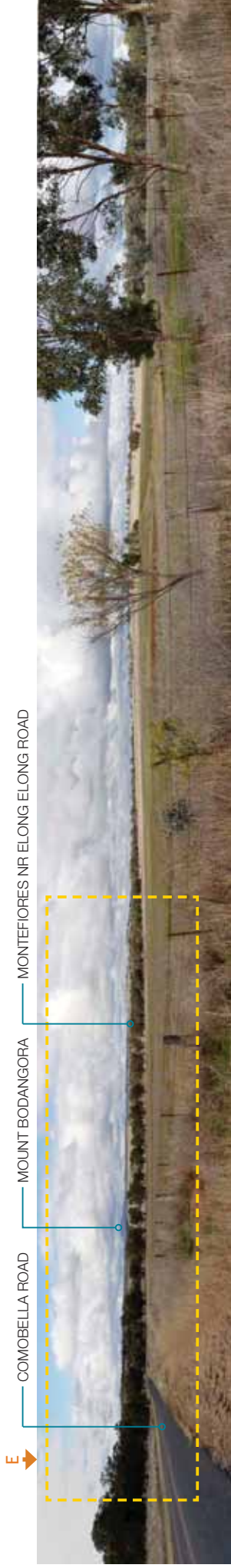


Image cropped from BWF05

VIEWPOINT BWF05		Landscape Description	Potential Visual Impact
Location	Forrestvale Road	View from Forrestvale Road, close to the intersection to Boonah Lane. Photograph was taken from a slightly elevated section of the road near a crest in the road. The topography is slightly undulating with localised rises. The land is typically open improved pasture used for sheep grazing with no visible homesteads or infrastructure. Scattered retained trees are visible throughout the landscape becoming dense towards the south west. Views from this location are expansive and extend towards the study area with Mount Bodangora visible in the distance. The visual sensitivity from this viewpoint has been assessed as low.	From this viewpoint approximately 28 of the proposed wind turbines would be visible. The proposed wind turbines would be in the sub-regional setting and would have a low visual effect. The distance to the proposed wind turbines and speed of travel along the road would result in a low visual impact from this viewpoint.
Coordinates	S 32 ° 19.858' E 149 ° 00.311'		
Elevation	453m		
Viewing Distance (to nearest turbine)	5.33 km		
Viewing Direction	South east		
Land use	Minor Road / Grazing Land		
LCU	Bodangora		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF06- Comobella Road



VIEWPOINT BWF06- Comobella Road



Image cropped from BWF06

VIEWPOINT BWF06		Landscape Description	Potential Visual Impact
Location	Comobella Road	View from Comobella Road approximately 400m west of Montefiores Nr Elong Elong Road. Photograph was taken opposite the entry to a property located on a hill top to best represent the impact from the property. Comobella Road is a Minor Road connecting Montefiores Nr Elong Elong Road to the township Comobella. The landscape is predominately open and cleared grazing land with roadside vegetation visible to the east along Montefiores Nr Elong Elong Road. Views from this point are distant and extend towards Mount Bodangora to the east. The visual sensitivity of this viewpoint has been assessed as low due to the distance of the proposed wind farm.	From this viewpoint, approximately 24 of the proposed wind turbines will be visible. From this viewpoint the wind turbines would be noticeable. Due to the distance from the proposed wind farm the visual effect of this viewpoint has been assessed as low. The overall visual impact from this viewpoint has been assessed as low.
Coordinates	S 32 ° 22.032' E 148 ° 57.706'		
Elevation	402m		
Viewing Distance (to nearest turbine)	7.29 km		
Viewing Direction	East		
Land use	Minor Road / Rural Residential		
LCU	Comobella		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF07 - Windora Road



VIEWPOINT BWF07 - Windora Road



Image cropped from BWF07

VIEWPOINT BWF07			Landscape Description	Potential Visual Impact
Location	Windora Road		View from Windora Road, approximately 2 kilometres north west of Comobella Road. Windora Road is a minor unsealed road servicing a small number of isolated homesteads. The photograph was taken in a south easterly direction towards the proposed wind turbines near the entry to a homestead. The landscape is predominately flat to gently undulating with cleared land being used for cattle grazing. For the majority of Windora Road, views to the proposed wind turbines are restricted by a combination of vegetation and topography. The visual sensitivity of this viewpoint has been assessed as low due to a combination of the land use and proximity to the proposed wind farm.	From this viewpoint a small number of wind turbines may be noticeable. However due to the dense vegetation in middle ground, low rises in topography and distance from the wind turbines the visual effect has been ranked as low. The overall visual impact from this viewpoint has been assessed as low.
Coordinates	S 32 ° 21.366' E 148 ° 56.323'			
Elevation	369m			
Viewing Distance (to nearest turbine)	8.02 km			
Viewing Direction	South east			
Land use	Grazing Land / Rural Properties			
LCU	Comobella			
Visual Sensitivity	Low			
Visual Effect	Low			
Potential Visual Impact	Low			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF08- Montefiores Nr Elong Elong Road - ‘Bodangora Station’



VIEWPOINT BWF08- Montefiores Nr Elong Elong Road (Entry to Bodangora Station)

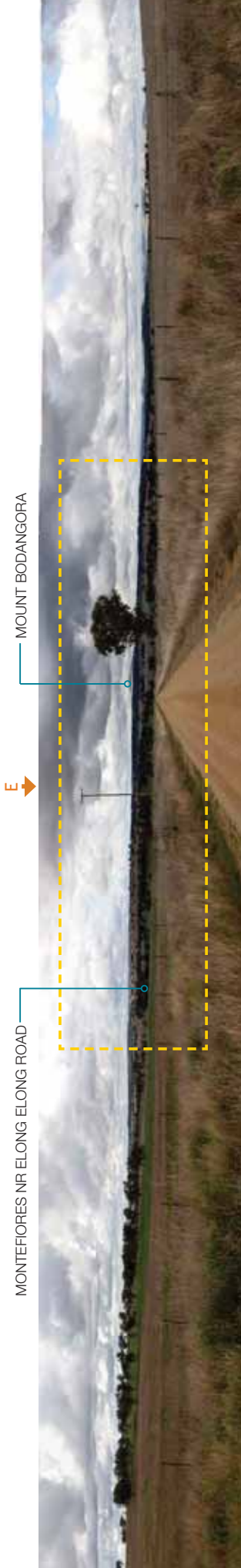


Image cropped from BWF08

VIEWPOINT BWF08			Landscape Description	Potential Visual Impact
Location	Montefiores Nr Elong Elong Road		View from Montefiores Nr Elong Elong Road, approximately 1.6 km south of Comabella Road. Montefiores Nr Elong Elong Road sealed, major connecting road which runs west of the study area. The photograph was taken from the entry to Bodangora Station, an isolated homestead setback approximately 600m from the roadside. The landscape is predominantly grazing land with improved pasture. The property is surrounded by screening vegetation running along the paddock edges visible in the foreground and middle ground of the photograph. The topography is gently undulating with a densely vegetated ridge line visible in the background of the photograph. The visual sensitivity of this viewpoint has been assessed as moderate.	From this viewpoint some glimpses of a small number of the proposed wind turbines may be visible through the vegetation. Dense screening vegetation surrounding the homesteads would assist in screening views to the proposed wind turbines. The visual effect from this viewpoint has been assessed as low. The overall visual impact from this viewpoint has been assessed as low.
Coordinates	S 32 ° 22.902'	E 148 ° 57.965'		
Elevation	410m			
Viewing Distance (to nearest turbine)	4.52 km			
Viewing Direction	East			
Land use	Rural Residence			
LCU	Comabella			
Visual Sensitivity	Moderate			
Visual Effect	Low			
Potential Visual Impact	Low			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF09- Unsealed Local Road



VIEWPOINT BWF09- Unsealed Local Road off Montefiores Nr Elong Elong Road

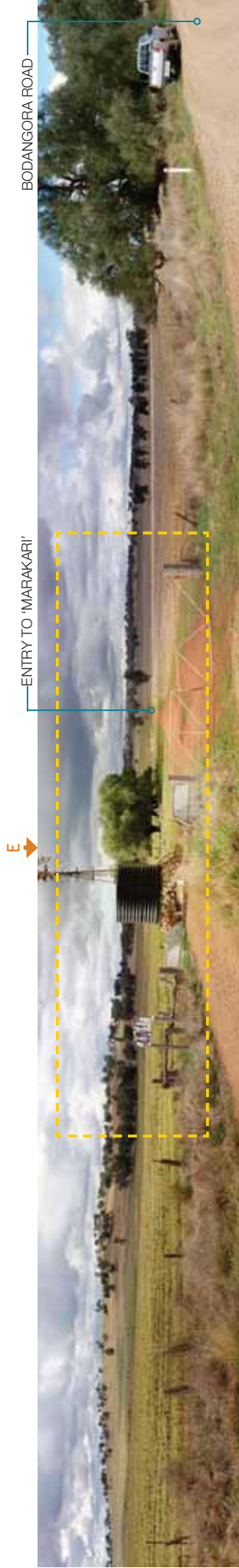


Image cropped from BWF09

VIEWPOINT BWF09		Landscape Description	Potential Visual Impact
Location	Unsealed Local Road off Montefiores Nr Elong Elong Road	View from an unsealed local road approximately 1 km west of Montefiores Nr Elong Elong Road. The road services a number of isolated homesteads to the west of the study area. The photograph was taken from an elevated crest on the road, aligned with Mount Bodangora (visible in the background of the photograph). Travelling further west along this road the crest prevents views to the east. The landscape is predominately cleared and open grazing land with some improved pasture. Intermittent roadside vegetation associated with Montefiores Nr Elong Elong Road is visible in the middle ground. The viewpoint was taken roughly in line with an elevated property approximately 700m to the north to provide a representation of the potential visual impact from the property. The visual sensitivity of this viewpoint has been rated as moderate.	From this viewpoint approximately 30 of the proposed wind turbines would be visible in the distance. However, due to the distance of the viewpoint the wind turbines would be a noticeable element in the landscape. The visual effect of the proposal has been rated as moderate due to the number of visible turbines. The overall potential visual impact has been assessed as moderate.
Coordinates	S 32 ° 24.107' E 148 ° 57.077'		
Elevation	441m		
Viewing Distance (to nearest turbine)	5.26 km		
Viewing Direction	East		
Land use	Minor Road / Grazing Land		
LCU	Cornobella		
Visual Sensitivity	Moderate		
Visual Effect	Moderate		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF10- Bodangora Road



VIEWPOINT BWF10- Bodangora Road



Image cropped from BWF10

VIEWPOINT BWF10			Landscape Description	Potential Visual Impact
Location	Bodangora Road		View from the entry to the homestead 'Marakari' on Bodangora Road, approximately 1.4km east of the Montefiores Nr Elong Elong Road. Bodangora Road is an unsealed local road servicing isolated homesteads. The landscape is predominately open, gently undulating grazing land with some groups of native trees. A group of pepper trees are planted at the entry to the property in the foreground and screen views to the proposed wind farm. Roadside vegetation is intermittent along Bodangora Road.	From this viewpoint approximately 7 of the wind turbines would be visible. The majority of the proposed wind turbines would be screened by foreground vegetation and the rise in topography to the north. The homestead 'Marakari' is located approximately 2km east of the viewpoint within 1km of the proposed wind turbines. This property is surrounded by retained vegetation and topography which would assist in reducing the visual impact. The overall visual effect from this viewpoint has been assessed as low due to the land use.
Coordinates	S 32 ° 24.298' E 148 ° 58.557'			
Elevation	426m			
Viewing Distance (to nearest turbine)	2.85 km			
Viewing Direction	East			
Land use	Unsealed Local Road / Grazing Land		The overall visual sensitivity from this viewpoint has been assessed as low.	The potential visual impact from this viewpoint has been assessed as low.
LCU	Bodangora			
Visual Sensitivity	Low			
Visual Effect	Low			
Potential Visual Impact	Low			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF11 - Bodangora Road



VIEWPOINT BWF11 - Bodangora Road



Image cropped from BWF11

VIEWPOINT BWF11		Landscape Description	Potential Visual Impact
Location	Bodangora Road	View from the entry to an unnamed property (1008 Bodangora Road) approximately 3.4km from Montefiores Nr Elong Elong Road. The property is located approximately 500m south west of the viewpoint along Mitchell Creek. The landscape is gently undulating and predominantly cleared grazing land with improved pasture. Views are panoramic and extend to a vegetated rise in the middle ground and continue out towards distant ranges to the south in the background.	From this viewpoint, 5 of the wind turbines will be visible to the north east. The visible turbines will most likely be partially screened by vegetation along the top of the ridge line in the middle ground of the photograph. Due to the small number of visible turbines, and the extent of existing screening factors the visual effect has been rated as low.
Coordinates	S 32 ° 25.124' E 148 ° 59.135'		
Elevation	442m		
Viewing Distance (to nearest turbine)	2.42 km		
Viewing Direction	North east		
Land use	Unsealed Minor Road	The visual sensitivity of this viewpoint has been assessed as high as it provides a representation of the potential visual impact from a nearby homestead.	The potential visual impact has been assessed as moderate for this viewpoint.
LCU	Bodangora		
Visual Sensitivity	High		
Visual Effect	Low		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF12- Bodangora Road



VIEWPOINT BWF12- Bodangora Road



Image cropped from BWF12

VIEWPOINT BWF12		Landscape Description	Potential Visual Impact
Location	Bodangora Road	View from Bodangora Road at a clearing in roadside vegetation approximately 70m from the entry to the property 'Glen Mitchell'. The landscape is predominantly cleared improved pasture with a few isolated trees. Riparian vegetation associated with Mitchell Creek is visible in the middle ground of the photograph at the base of a low rise in topography. Views from this point are expansive to the east with views to the north and north east contained by dense vegetation and a low rise in topography. The visual sensitivity from this viewpoint has been rated as high due to the close proximity of the property 'Glen Mitchell'.	From this viewpoint approximately 7 of the proposed wind turbines would be visible to the north east however, they will be mostly screened by vegetation. The visual effect from this viewpoint has been assessed as low. The overall visual impact from this viewpoint has been rated as moderate.
Coordinates	S 32 ° 25.926' E 148 ° 59.914'		
Elevation	438m		
Viewing Distance (to nearest turbine)	2.68 km		
Viewing Direction	East		
Land use	Grazing Land		
LCU	Bodangora		
Visual Sensitivity	High		
Visual Effect	Low		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF13- Bodangora Road



VIEWPOINT BWF13- Bodangora Road



Image cropped from BWF13

VIEWPOINT BWF13			Landscape Description	Potential Visual Impact
Location	Bodangora Road		View from Bodangora Road at the northern entry to the Bodangora Village where there is a greater predominance of rural properties and associated buildings. The landform is gently undulating and slopes to the north towards Mitchell Creek. The landscape is predominantly open and cleared grazing land with vegetation associated with a property in the foreground of the photograph. Views from this viewpoint are expansive extending towards Mount Bodangora and a densely vegetated ridge line in the distance.	From this viewpoint 26 of the proposed wind turbines would be visible. The visual effect from this viewpoint has been rated as high. The photograph was taken close to a number of rural residential properties to best represent the visual impact from these properties. Although the visual effect has been rated as high, most properties within the area are characterised by screening vegetation close to the property which would significantly reduce the impact.
Coordinates	S 32 ° 26.556' E 149 ° 00.011'			
Elevation	465m			
Viewing Distance (to nearest turbine)	2.99km			
Viewing Direction	North			
Land use	Rural Residential		The visual sensitivity of this viewpoint has been rated as high due to the number of nearby rural residential properties.	The overall visual impact from this viewpoint has been rated as high.
LCU	Bodangora			
Visual Sensitivity	High			
Visual Effect	Moderate			
Potential Visual Impact	Moderate			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF14- Mudgee Road & Bodangora Road



VIEWPOINT BWF14- Intersection of Mudgee Road & Bodangora Road



Image cropped from BWF14

VIEWPOINT BWF14		Landscape Description	Potential Visual Impact
Location	Mudgee Road	View from an elevated embankment at the intersection of Mudgee Road and Bodangora Road. Mudgee Road is a main travel corridor between Gulgong and Wellington. The entry road to Wellington airport is visible in the centre of the photograph, located 500m north of the viewpoint. The landscape is primarily open grazing land with some vegetation visible surrounding an isolated homestead to the west. Views from this viewpoint are open with a low rise in the topography in the middle ground. The visual sensitivity from this viewpoint has been assessed as low.	From this viewpoint a maximum of 6 wind turbines would be potentially noticeable yet partially screened by vegetation in the mid distance. The speed of travel along Mudgee Road combined with the distance from the proposed wind turbines would result in a low visual effect. The potential visual impact of the proposed wind farm from this viewpoint would be low.
Coordinates	S 32 ° 28.316, E 148 ° 59.602		
Elevation	407m		
Viewing Distance (to nearest turbine)	5.87 km		
Viewing Direction	North		
Land use	Main Travel Corridor		
LCU	Bodangora		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF15- Driel Creek Road



VIEWPOINT BWF15- Driel Creek Road



Image cropped from BWF15

VIEWPOINT BWF15		Landscapse Description	Potential Visual Impact
Location	Driel Creek Road	View from Driel Creek Road at the north eastern edge of Bodangora looking north towards the study site. Driel creek Road is an unsealed minor road connecting Bodangora Village to homesteads to the north. The landscape is predominantly scrubby grazing land with vegetation increasing towards the ridge line. Views are contained to the north by a vegetated ridge line and extend to the east towards Mount Bodangora. The visual sensitivity from this viewpoint has been assessed as high due to the close proximity to a number of rural residential properties.	From this viewpoint it is likely 25 of the proposed wind turbines will be visible. The wind turbines are proposed along the ridge line in the background of the image. The visual effect from this viewpoint has been assessed as high due to the wide horizontal spread of the proposal and lack of screening elements. Although the visual effect has been rated as high, most properties within the area are characterised by screening vegetation close to the property which would significantly reduce the impact. The overall visual effect from this viewpoint has been assessed as high.
Coordinates	S 32 ° 26.621' E 149 ° 00.373'		
Elevation	462m		
Viewing Distance (to nearest turbine)	2.65 km		
Viewing Direction	North east		
Land use	Local Unsealed Road		
LCU	Bodangora		
Visual Sensitivity	High		
Visual Effect	High		
Potential Visual Impact	High		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF16- Driel Creek Road



VIEWPOINT BWF16- Driel Creek Road



Image cropped from BWF16

VIEWPOINT BWF16			Landscape Description	Potential Visual Impact
Location	Driel Creek Road		View from Driel Creek Road approximately 1.5km north of Bodangora Village. The landscape is gently undulating with views largely enclosed due to low rises and ridges in the foreground. Vegetation associated with Mitchell Creek and retained roadside vegetation contains views. The land is predominantly grazing land. The closest property is approximately 400m to the north east of this viewpoint. The visual sensitivity of this viewpoint has been rated as moderate due to the close proximity of the proposed wind turbines.	From this viewpoint it is likely that 3 wind turbines will be potentially noticeable to the north, however the dense vegetation will screen the majority of the wind turbines, providing glimpse views of the blades. The visual effect of the proposed wind farm from this viewpoint has been assessed as moderate. The overall potential visual impact from this viewpoint has been rated moderate.
Coordinates	S 32 ° 25.858' E 149 ° 00.663'			
Elevation	445m			
Viewing Distance (to nearest turbine)	1.50 km			
Viewing Direction	North east			
Land use	Local Unsealed Road / Rural Residential			
LCU	Bodangora			
Visual Sensitivity	Moderate			
Visual Effect	Moderate			
Potential Visual Impact	Moderate			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF17- 'Westview'



VIEWPOINT BWF17- Road entry to property 'Westview'



Image cropped from BWF17

VIEWPOINT BWF17		Landscape Description	Potential Visual Impact
Location	Road to 'Westview'	View from the junction of two minor roads at they entry to 'Westview'. 'Westview' is a large farmhouse and property with expansive views to the west across the valley floor. The landscape is typically improved pasture with retained vegetation containing most views along the road.	From this viewpoint approximately 7 wind turbines would be visible through the vegetation. Vegetation associated with the unsealed access road would screen most views to the proposed wind farm. The visual effect from this viewpoint has been assessed as moderate.
Coordinates	S 32 ° 21.923' E 149 ° 01.823'		
Elevation	506m		
Viewing Distance (to nearest turbine)	0.88 km		
Viewing Direction	South East	The landscape sensitivity from this viewpoint has been assessed as high.	The overall visual impact from this viewpoint has been assessed as moderate.
Land use	Rural Residence		
LCU	Bodangora		
Visual Sensitivity	High		
Visual Effect	Moderate		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF18- Driel Creek Road



VIEWPOINT BWF18- Driel Creek Road



Image cropped from BWF18

VIEWPOINT BWF18			Landscape Description	Potential Visual Impact
Location	Driel Creek Road		View looking south from Driel Creek Road, approximately 300m to the west of an isolated homestead 'Meadowlands'. The landscape is predominantly open improved pasture used for sheep grazing. The landform is gently undulating and views are contained in the mid distance by low rises. Mount Bodangora and a vegetated ridge line is visible in the distance.	From this viewpoint approximately 23 wind turbines would be visible. Views to the southern most wind turbines would be screened by low rises in the mid distance. The visual effect of the proposed wind farm from this viewpoint has been rated as high.
Coordinates	S 32 ° 21.575' E 149 ° 03.188'			
Elevation	465m			
Viewing Distance (to nearest turbine)	1.14 km			
Viewing Direction	South			
Land use	Grazing Land		The landscape sensitivity from this viewpoint has been assessed as moderate.	The overall visual impact from this viewpoint has been assessed as high.
LCU	Bodangora			
Visual Sensitivity	Moderate			
Visual Effect	High			
Potential Visual Impact	High			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF19- Wandrona Lane



VIEWPOINT BWF19- Wandrona Lane



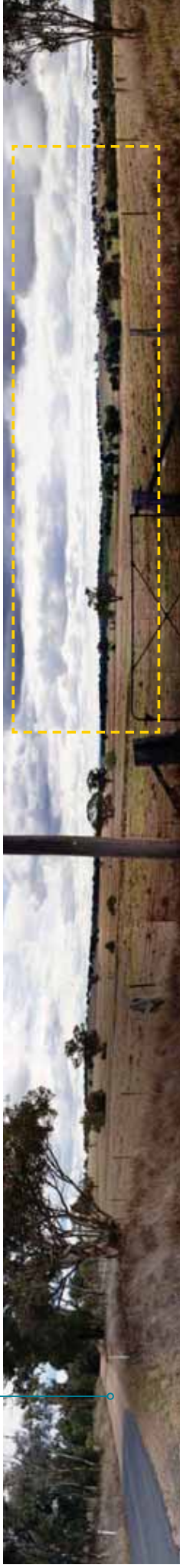
Image cropped from BWF19

VIEWPOINT BWF19		Landscape Description	Potential Visual Impact
Location	Wandrona Lane	View from unsealed road 'Wandrona Lane' off Gillinghall Road at the entry gates to the homestead 'Wandrona'. The viewpoint is located on the northern edge of the proposed wind farm. The property visible in the centre of the photograph is 'Landsgrove'. The landscape in this area is predominantly grazing land with a coverage of retained vegetation surrounding the homestead and roadside. The topography is sloping with a low rise in the foreground containing views. The visual sensitivity from this viewpoint has been assessed as high. (Note: Landsgrove is an involved landowner).	A combination of the topography, vegetation and farm sheds would obstruct views to most of the wind turbines from this viewpoint. It is likely that approximately 4 of the proposed wind turbines would be visible to the west. The visual effect from this viewpoint has been rated as moderate. The overall visual impact from this viewpoint has been assessed as moderate.
Coordinates	S 32 ° 22.292' E 149 ° 04.569'		
Elevation	493m		
Viewing Distance (to nearest turbine)	0.84 km		
Viewing Direction	South		
Land use	Rural Residence		
LCU	Spicers Creek		
Visual Sensitivity	High		
Visual Effect	Moderate		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF20- Gillinghall Road

GILLINGHALL ROAD



VIEWPOINT BWF20- Gillinghall Road



Image cropped from BWF20

VIEWPOINT BWF20			Landscape Description	Potential Visual Impact
Location	Gillinghall Road		View from Gillinghall Road, approximately 5.3 km north east of Mudgee Road. The viewpoint has been taken from the entry gate to a paddock across the road from the property 'Glen Oak', located in the centre of the proposed wind farm. The landscape is gently undulating, sloping up from the valley floor. Land use is predominantly grazing land with groups of retained vegetation. Views extend to the vegetated ridge lines in the distance. The visual sensitivity from this viewpoint has been assessed as high due to the close proximity to a rural residence. (Note: Glen Oak is an involved landowner).	From this viewpoint approximately 28 of the wind turbines would be visible to the east. Views of proposed wind turbines to the west would be predominantly obstructed by retained vegetation associated with both Gillinghall Road and 'Glen Oak'. The visual effect from this viewpoint has been assessed as high. The overall visual impact from this viewpoint has been assessed as high.
Coordinates	S 32 ° 24.096' E 149 ° 02.863'			
Elevation	488m			
Viewing Distance (to nearest turbine)	1.26 km			
Viewing Direction	East			
Land use	Rural Residence			
LCU	Mount Bodangora			
Visual Sensitivity	High			
Visual Effect	High			
Potential Visual Impact	High			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF21 - Gillinghall Road



VIEWPOINT BWF21 - Gillinghall Road



Image cropped from BWF21

VIEWPOINT BWF21			Landscape Description	Potential Visual Impact
Location	Gillinghall Road		View from the western road side of Gillinghall Road at the entry to a property 'Strathmore'. The landscape is generally flat, slightly sloping away from the road. The land use is predominantly open grazing land with the property 'Strathmore' sited approximately 250m west of the road. Retained vegetation is dense in sections along Gillinghall Road with tree plantings along the paddock boundary and driveway entry.	From this viewpoint it is likely that approximately 10 of the proposed wind turbines would be visible to the south west and north east. Vegetation associated with the roadside and property entry will obstruct views to a number of the proposed turbines from this viewpoint. The visual effect has been rated as high due to the close proximity and number of wind turbines surrounding the viewpoint.
Coordinates	S 32 ° 24.645' E 149 ° 02.595'		The visual sensitivity from this viewpoint has been assessed as high due to the close proximity of a rural residences. (Note: Strathmore is an involved landowner).	The overall visual impact has been assessed as high from this viewpoint.
Elevation	525m			
Viewing Distance (to nearest turbine)	0.51 km			
Viewing Direction	South			
Land use	Rural Residence / Local Unsealed Road			
LCU	Mount Bodangora			
Visual Sensitivity	High			
Visual Effect	High			
Potential Visual Impact	High			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF22- Mudgee Road



VIEWPOINT BWF22- Mudgee Road



Image cropped from BWF22

VIEWPOINT BWF22		Landscape Description	Potential Visual Impact
Location	Mudgee Road	Photograph taken from the entry to property 'Geenobby' along Mudgee Road. Mudgee Road is a major road in the area connecting Wellington and Gulgong. The landscape is gently undulating with low rises in the mid distance. Views extend towards mount Bodangora and nearby vegetated ridges. The landscape is typically cattle grazing land with some improved pasture and groups of retained vegetation. The visual sensitivity from this viewpoint has been assessed as moderate due to the land use as a major travel corridor.	From this viewpoint approximately 16 of the proposed wind turbines will be visible. A combination of the topography and vegetation in the foreground is likely to obstruct views to the turbines. The visual effect has been assessed as moderate. The overall visual impact has been rated as moderate.
Coordinates	S 32 ° 26.761' E 149 ° 02.164'		
Elevation	477m		
Viewing Distance (to nearest turbine)	2.26 km		
Viewing Direction	North		
Land use	Major Travel Corridor	The visual sensitivity from this viewpoint has been assessed as moderate due to the land use as a major travel corridor.	
LCU	Mount Bodangora		
Visual Sensitivity	Moderate		
Visual Effect	Moderate		
Potential Visual Impact	Moderate		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF23- Mudgee Road



VIEWPOINT BWF23- Mudgee Road



Image cropped from BWF23

VIEWPOINT BWF23		Landscape Description	Potential Visual Impact
Location	Mudgee Road	View from Mudgee Road to the south of Mount Bodangora a local high point visible from most locations within the study area. The photograph was taken at the entry to the property 'Mount Bodangora' an isolated homestead sited on the southern foothills of Mount Bodangora. Vegetation surrounds the homestead visible in the centre of the photograph. Views from this point are enclosed by the low rise in topography, vegetation and Mount Bodangora.	From this viewpoint the tips of a few of the wind turbines would be potentially visible. A combination of topography and vegetation obstruct views to the majority of proposed turbines. The visual effect from this viewpoint would therefore be low.
Coordinates	S 32 ° 26.232' E 149 ° 05.659'		
Elevation	548m		
Viewing Distance (to nearest turbine)	2.87 km		
Viewing Direction	North east		
Land use	Major Road / Rural Residence	The visual sensitivity from this viewpoint has been assessed as moderate.	The overall visual impact from this viewpoint has been assessed as low.
LCU	Mount Bodangora		
Visual Sensitivity	Moderate		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF24- Mudgee Road



VIEWPOINT BWF24- Mudgee Road



Image cropped from BWF24

VIEWPOINT BWF24		Landscape Description	Potential Visual Impact
Location	Mudgee Road	View from the intersection of Mudgee Road and Gunnegalderie Road at the entry to the property 'Ahwahnee', located on the eastern side of the road. The topography slopes from the viewpoint to a local rise in the foreground, vegetated by both retained roadside vegetation and plantings along the property boundary. The visual sensitivity from this viewpoint has been assessed as moderate due to the land use as a major travel corridor. (Note: Ahwahnee is an involved landowner).	From this viewpoint it is likely glimpses of a few of the proposed wind turbines would be visible through the vegetation. The visual effect from this viewpoint has been assessed as low due to the speed of travel along Mudgee Road. The overall visual impact from this viewpoint has been assessed as low.
Coordinates	S 32 ° 25.474' E 149 ° 07.574'		
Elevation	612m		
Viewing Distance (to nearest turbine)	1.59 km		
Viewing Direction	North west		
Land use	Major Road / Rural Residence		
LCU	Mount Bodangora		
Visual Sensitivity	Moderate		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF25- Gunnegalderie Road



VIEWPOINT BWF25- Gunnegalderie Road



Image cropped from BWF25

VIEWPOINT BWF25		Landscape Description	Potential Visual Impact
Location	Gunnegalderie Road	View from an enclave of rural properties along Gunnegalderie Road. Gunnegalderie Road is an unsealed minor road servicing a number of homesteads and connecting Mudgee Road to Twelve Mile Road. Photograph was taken looking south towards the proposed location of the sub station. Views towards the proposed sub station are predominantly enclosed by a low rise in the topography and vegetation surrounding the homestead 'Gunnegalderie'.	The proposed wind farm is obstructed from view by the topography and dense vegetation. The proposed substation will not be visible from this viewpoint and therefore there is no visual impact.
Coordinates	S 32 ° 25.723' E 149 °09.882'		
Elevation	575m		
Viewing Distance (to nearest turbine)	1.61 km		
Viewing Direction	South west		
Land use	Local Unsealed Road / Rural Residence	The visual sensitivity from this viewpoint has been assessed as high due to the close proximity of the viewpoint to a residence.	
LCU	Mount Bodangora		
Visual Sensitivity	High		
Visual Effect	-		
Potential Visual Impact	-		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF26 Spicers Creek Road



VIEWPOINT BWF26- Spicer's Creek Road



Image cropped from BWF26

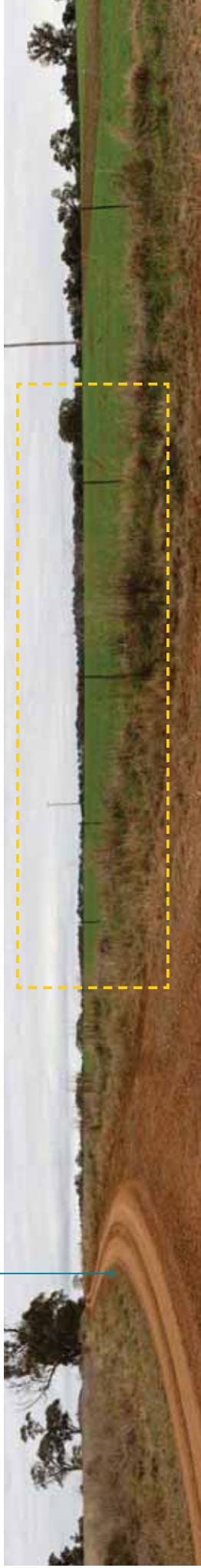
VIEWPOINT BWF26			Landscape Description	Potential Visual Impact
Location	Spicers Creek Road		View from the entry to the property 'Gillinghall' looking in a southerly direction towards the proposed wind turbines. Spicers Creek Road is an unsealed local road to the north east of the study site running from Gollan Road to Mudgee Road servicing a number of isolated homesteads. Spicers Creek Road runs along the valley floor associated with Spicers Creek. The landscape is flat and primarily utilised for canola crops and improved pasture. Some isolated plantings associated with Gillinghall Road are visible in the middle ground.	From this viewpoint it is likely that 10 of the proposed wind turbines will be visible. Vegetation in the mid distance associated with Gillinghall Road will potentially screen the majority of the visible turbines. The visual effect from this viewpoint has been assessed as low due to the distance from the proposed turbines and extent of screening vegetation.
Coordinates	S 32 ° 19,756'	E 149 ° 05,948'		
Elevation	415m			
Viewing Distance (to nearest turbine)	5.88 km			
Viewing Direction	South			
Land use	Unsealed Local Road / Rural Residence		The overall potential visual impact has been rated as low from this viewpoint.	
LCU	Spicers Creek			
Visual Sensitivity	Moderate			
Visual Effect	Low			
Potential Visual Impact	Low			

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF27 - Spicers Creek Road

SPICERS CREEK ROAD

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VIEWPOINT BWF27- Spicer Creek Road



Image cropped from BWF27

VIEWPOINT BWF27		Landscape Description	Potential Visual Impact
Location	Spicers Creek Road	View from an intersection along Spicers Creek Road looking south west towards the Site. The topography is flat improved pasture and a sparse coverage of roadside vegetation. Views extend to a vegetated rise to the west.	From this viewpoint it is likely 9 of the proposed wind turbines will be visible. The visual effect has been rated as low due to the distance from the site.
Coordinates	S 32 ° 21.679' E 149 ° 07.538'		
Elevation	464m	The visual sensitivity from this viewpoint has been assessed as low.	The overall visual impact from this viewpoint has been assessed as low.
Viewing Distance (to nearest turbine)	5.37 km		
Viewing Direction	South west		
Land use	Unsealed minor road		
LCU	Spicers Creek		
Visual Sensitivity	Low		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF28- Spicers Creek Road & Mudgee Road Intersection



VIEWPOINT BWF28- Spicer's Creek Road & Mudgee Road Intersection



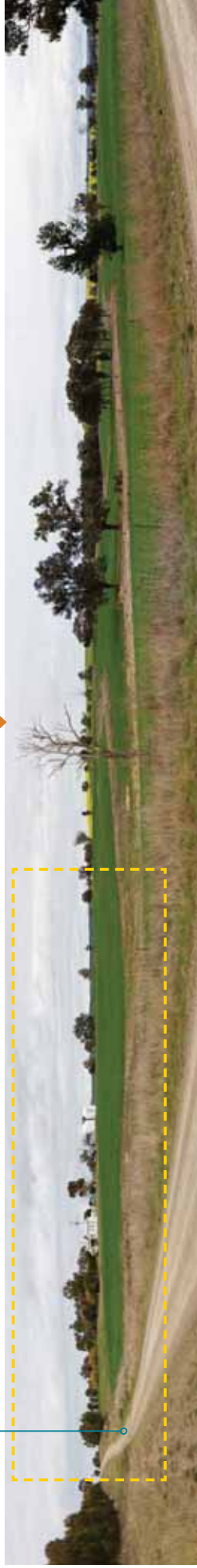
Image cropped from BWF28

VIEWPOINT BWF28		Landscape Description	Potential Visual Impact
Location	Spicers Creek Road	View from the corner of Spicer's Creek Road and Mudgee Road looking east towards the study site. The topography is undulating and a low rise in the foreground obstructs views to the east. Dense vegetation associated with Spicer's Creek is visible in the middle ground of the photograph to the south. Roadside vegetation occurs along most of Mudgee Road. The visual sensitivity from this viewpoint has been rated as moderate.	Views to the proposed wind turbines are obstructed from this viewpoint by a combination of topography and vegetation. None of the proposed wind turbines would be visible from this viewpoint.
Coordinates	S 32 ° 23.256' E 149 ° 09.604'		
Elevation	516m		
Viewing Distance (to nearest turbine)	3.97 km		
Viewing Direction	South west		
Land use	Major Travel Corridor		
LCU	Mount Bodangora		
Visual Sensitivity	Moderate		
Visual Effect	-		
Potential Visual Impact	-		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF29- Oakley Creek Road

OAKLEY CREEK ROAD



VIEWPOINT BWF29 - Oakley Creek Road

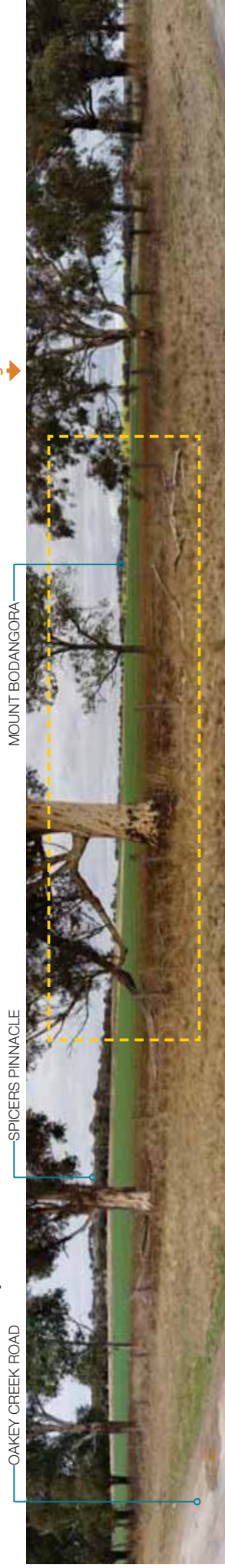


Image cropped from BWF29

VIEWPOINT BWF29		Landscape Description	Potential Visual Impact
Location	Oakley Creek Road	View from Oakley Creek Road, approximately 2.85 km north from Mudgee Road. Photograph was taken in a southerly direction towards the proposed wind turbines. The landscape is predominantly improved pasture. An isolated farmhouse and associated ancillary buildings are visible to the north east, surrounded by a mixture of native and exotic vegetation. Views extend to the distant vegetated ranges. A low rise in topography in the foreground contains most views. The visual sensitivity from this viewpoint has been assessed as moderate due to the close proximity of the farm house to the viewpoint.	From this viewpoint 22 of the proposed wind turbines will be potentially visible. Vegetation along the ridge of the low rise in the mid distance will screen some views to the proposed turbines. Due to the distance from the wind farm, the visual effect has been assessed as low. The overall visual impact from this viewpoint has been assessed as low.
Coordinates	S 32 ° 21.540' E 149 ° 09.782'		
Elevation	517m		
Viewing Distance (to nearest turbine)	6.26km		
Viewing Direction	East		
Land use	Minor Road / Rural Residence		
LCU	Spicers Creek		
Visual Sensitivity	Moderate		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

VIEWPOINT BWF30- Oakley Creek Road



VIEWPOINT BWF30- Oakley Creek Road



Image cropped from BWF30

VIEWPOINT BWF30		Landscape Description	Potential Visual Impact
Location	Oakley Creek Road	View from Oakley Creek Road at a bend in the road approximately 6 km south of Gollan Road. Photograph was taken 200m south of an isolated property looking in a southerly direction towards the proposed wind farm. The landscape is slightly sloping, cleared, improved pasture. Roadside vegetation lines the southern side of the road. Views extend towards the south to Mount Bodangora and are contained to the east by Spicers Pinnacle.	From this viewpoint it is likely that 21 wind turbines will be visible through the vegetation. Due to the distance to the proposed turbines from this viewpoint and the vegetation in the mid distance, the proposed wind turbines will be noticeable, however the visual effect has been rated as low.
Coordinates	S 32 ° 20.053' E 149 ° 09.719'		
Elevation	476m		
Viewing Distance (to nearest turbine)	8.55 km		
Viewing Direction	South		
Land use	Local Road / Rural Residence	The visual sensitivity from this viewpoint has been assessed as moderate due to the close proximity to a rural residence.	The overall visual impact from this viewpoint has been assessed as low.
LCU	Spicers Creek		
Visual Sensitivity	Moderate		
Visual Effect	Low		
Potential Visual Impact	Low		

8.0 VIEWPOINT ANALYSIS

8.2 VIEWPOINT SUMMARY

VIEW- POINT	PHOTO- MONTAGE	DISTANCE To nearest proposed turbine	POTENTIAL VISUAL PROMINENCE Based on distance	VERTICAL ANGLE Based on near- est proposed turbine	VISUAL PROMINENCE Based on vertical angle	% OF VISIBLE TURBINES	EXISTING POTENTIAL SCREENING FACTORS	VISUAL SENSITIVITY RATING	VISUAL EFFECT RATING	VISUAL IMPACT RATING
BWF01	-	12.18 km	Insignificant	0.71°	Potentially Noticable	80%	Distance	LOW	LOW	LOW
BWF02	-	10.27 km	Potentially Noticable	0.84°	Potentially Noticable	20%	Distance & Topography	LOW	LOW	LOW
BWF03	-	7.09 km	Potentially Noticable	1.09°	Potentially Noticable	-	Vegetation & Topography	LOW	-	-
BWF04	PM01	5.89 km	Potentially Noticable	1.46°	Potentially Noticable	80%	Distance	LOW	LOW	LOW
BWF05	-	5.33 km	Potentially Noticable	1.61°	Potentially Noticable	60%	Distance	LOW	LOW	LOW
BWF06	-	7.29 km	Potentially Noticable	1.18°	Potentially Noticable	60%	Distance	LOW	LOW	LOW
BWF07	-	8.02 km	Potentially Noticable	1.07°	Potentially Noticable	-	Distance & Vegetation	LOW	-	-
BWF08	-	4.52 km	Potentially Noticable	1.90°	Potentially Noticable	20%	Foreground Vegetation	MODERATE	LOW	LOW
BWF09	PM02	5.26 km	Potentially Noticable	1.63°	Potentially Noticable	80%	Distance	MODERATE	MODERATE	MODERATE
BWF10	-	2.85 km	Potentially Noticable	4.11°	Potentially Dominant	20%	Foreground Vegetation & Topography	LOW	LOW	LOW
BWF11	-	2.42 km	Highly Visible	3.55°	Potentially Dominant	20%	Topography & Vegetation	HIGH	LOW	MODERATE
BWF12	-	2.68 km	Potentially Noticable	3.20°	Potentially Dominant	20%	Foreground Vegetation & Topography	HIGH	LOW	MODERATE
BWF13	PM03	2.99 km	Potentially Noticable	2.87°	Potentially Dominant	80%	Ridge line Vegetation	HIGH	HIGH	HIGH
BWF14	-	5.87 km	Potentially Noticable	1.46°	Potentially Noticable	20%	Topography & Distance	LOW	LOW	LOW
BWF15	PM04	2.65 km	Potentially Noticable	3.24°	Potentially Dominant	80%	Ridge line Vegetation	HIGH	HIGH	HIGH
BWF16	-	1.50 km	Highly Visible	5.71°	Potentially Dominant	20%	Roadside Vegetation & Topography	MODERATE	MODERATE	MODERATE
BWF17	PM05	0.88 km	Highly Visible	9.67°	Potentially Dominant	40%	Roadside Vegetation	HIGH	MODERATE	MODERATE
BWF18	PM06	1.14 km	Highly Visible	7.50°	Potentially Dominant	80%	Topography	MODERATE	HIGH	HIGH
BWF19	PM07	0.84 km	Highly Visible	10.12°	Potentially Dominant	20%	Foreground Vegetation & Topography	HIGH	LOW	MODERATE
BWF20	-	1.26 km	Highly Visible	6.79°	Potentially Dominant	60%	Roadside Vegetation	HIGH	HIGH	HIGH
BWF21	-	0.51 km	Highly Visible	16.39°	Potentially Dominant	40%	Roadside Vegetation	HIGH	HIGH	HIGH
BWF22	PM08	2.26 km	Highly Visible	3.80°	Potentially Dominant	60%	Vegetation & Distance	MODERATE	MODERATE	MODERATE
BWF23	-	2.87 km	Highly Visible	2.99°	Potentially Dominant	20%	Topography & Vegetation	MODERATE	LOW	LOW
BWF24	PM09	1.59 km	Highly Visible	5.39°	Potentially Dominant	20%	Topography & Vegetation	MODERATE	LOW	LOW
BWF25	-	1.61 km	Highly Visible	5.32°	Potentially Dominant	20%	Topography & Vegetation	HIGH	-	-
BWF26		5.88 km	Potentially Noticable	1.46°	Potentially Noticable	40%	Topography & Vegetation	HIGH	LOW	LOW
BWF27	-	5.37 km	Potentially Noticable	1.60°	Potentially Noticable	20%	Distance & Topography	LOW	LOW	LOW
BWF28	-	3.97 km	Potentially Noticable	2.16°	Potentially Noticable	-	Topography	MODERATE	-	-
BWF29	-	6.26 km	Potentially Noticable	1.37°	Potentially Noticable	60%	Vegetation & Distance	MODERATE	LOW	LOW
BWF30	-	8.55 km	Potentially Noticable	1.01°	Potentially Noticable	60%	Vegetation & Distance	MODERATE	LOW	LOW

TABLE 13: Viewpoint Summary

8.0 VIEWPOINT ANALYSIS

8.2 SUMMARY OF VIEWPOINT ANALYSIS

As it was discussed in the rationale for the viewpoint selection process, these viewpoints are representative of the worst case scenario. For each viewpoint, the potential visual impact was analysed through the use of a combination of the Zone of Visual Influence, 3D terrain modelling, topographic maps and on site analysis.

The visual sensitivity and visual effect of each viewpoint have been assessed which, when combined, result in an overall visual impact for the viewpoint (Refer to Study Method Tables 1 & 2). A summary of the results for each viewpoint has been included in Table 12.

Of the 30 viewpoints assessed as part of this VIA, the wind turbines would be visible from 26 of the viewpoints. Of the 26 viewpoints from which the wind turbines would be visible, 14 of these have been assessed as having a low visual impact, 7 have been assessed as having a moderate visual impact and 5 were assessed as having a high visual impact.

Generally, the further the viewpoint is from the proposed development the more wind turbines would be visible. However as the viewer distance increases the scale and therefore visual impact of the wind turbines decreases. For example, viewpoint BWF09 located off Montefiores Nr Elong Elong Road was taken from an elevated vantage point and 80% of the proposed development is visible. However due to the distance from the proposal, the visual effect is moderate as the view of the wind turbines occupies only 1.46 degrees of vertical angle.

In contrast viewpoints located close to the proposed wind turbines have a large vertical angle, yet generally a much smaller percentage of the turbines are visible due to obstruction by topography and existing vegetation. For example, viewpoint BWF24 is located within 2km of the proposal, however foreground vegetation and topography obstruct views to the majority of the wind turbines.

Of the 5 viewpoints that were rated as having a high visual impact, three were taken near involved landowners (BWF18 Meadowlands, BWF20 Glen Oak, BWF21 Strathmore). BWF13 and BWF15 were taken from the northern edge of Bodangora Village and represent the worst case scenario for the rural residential properties in Bodangora.

It is important to note these rankings are used to make a comparison between viewpoints and do not necessarily reflect the actual visual impact. Each viewpoint has local influences (such as vegetation and topography) which may potentially screen the wind farm from view. These screening factors have been noted in the viewpoint summary.

9.0 PHOTOMONTAGES

9.1 PHOTOMONTAGES

Photomontages of the proposed Wind Turbines within the existing context were prepared to assist in the impact assessment of the proposed Bodangora Wind Farm. The photomontages seek to convey the final visual image of the proposal from typical vantage points. Considerable effort was made to obtain photos in clear weather conditions to ensure that the photomontages would represent the worst case scenario. In some cases where weather conditions were poor, photomontages have been altered with a blue sky to represent the worst case scenario.

The photomontages are based on worst case scenario without the inclusion of the proposed mitigation methods. Additional photomontages are provided showing measures to mitigate the impact of the proposed wind farm and how they reduce the determined impact.

9.1.1 Photomontage Viewpoint Locations

A variety of indicative photomontage viewpoints have been included for the preparation of photomontages to best represent a range of distances as well as locations with differing views. A total of 9 viewpoints were selected for the production of photomontages.

Locations of the photomontages are shown in Figure 14.

MONTAGE	VIEWPOINT	NUMBER OF VISIBLE TURBINES	VISUAL IMPACT
PM01	BWF04	25	LOW
PM02	BWF09	30	MODERATE
PM03	BWF13	26	HIGH
PM04	BWF15	25	HIGH
PM05	BWF17	8	MODERATE
PM06	BWF18	23	HIGH
PM07	BWF19	4	MODERATE
PM08	BWF22	16	LOW
PM09	BWF24	4	MODERATE

TABLE 14: Photomontage Locations

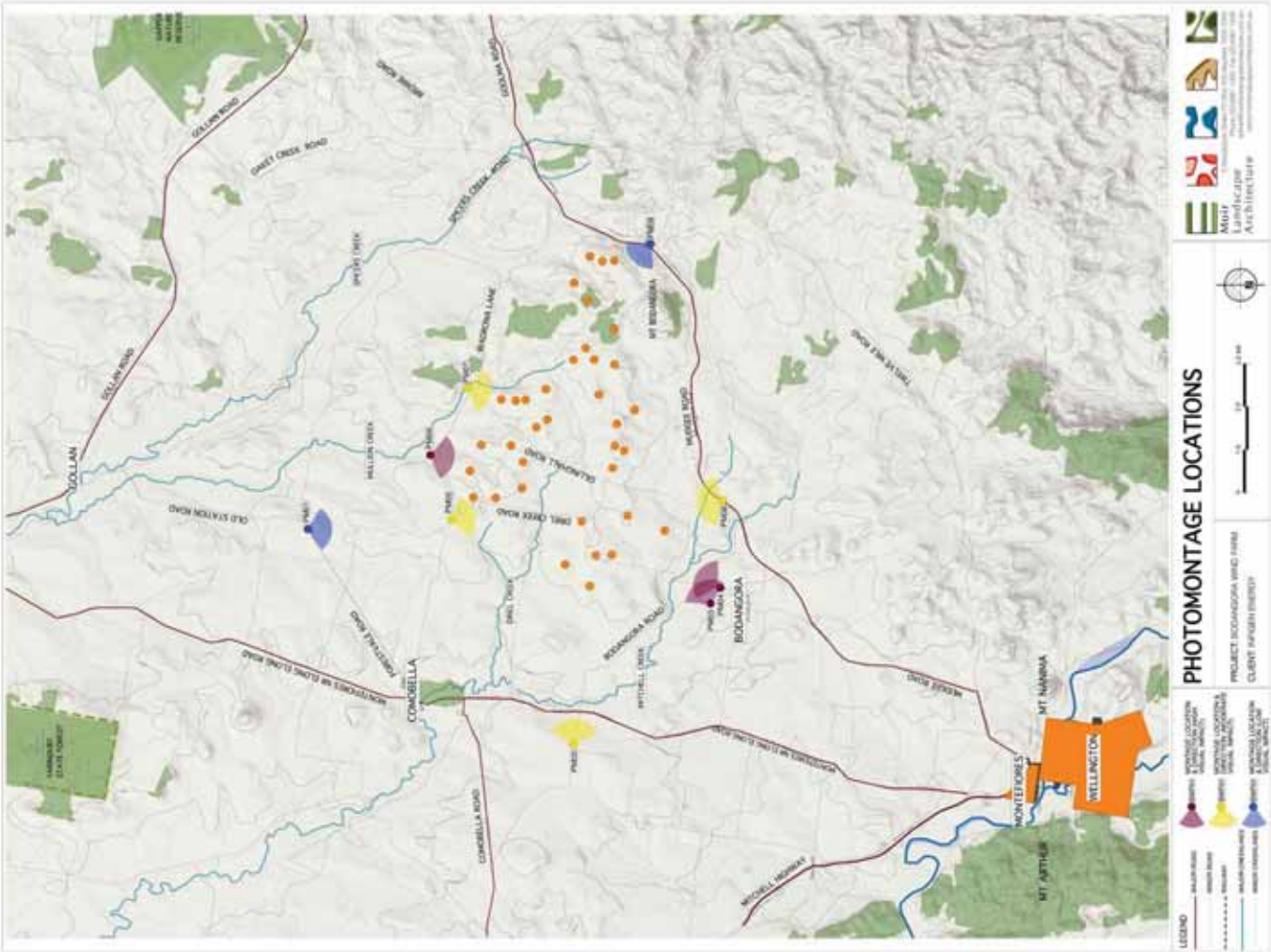


FIGURE 14: Photomontage Locations

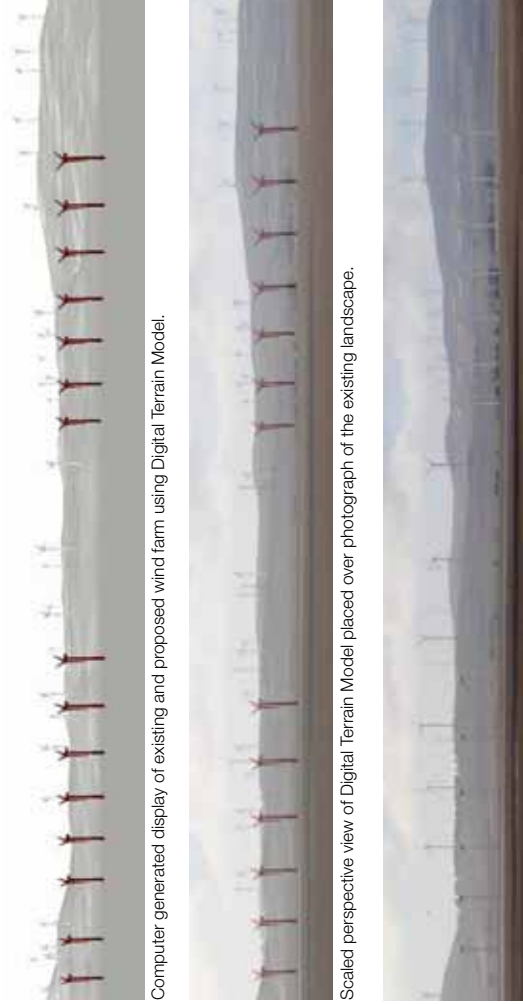
9.0 PHOTOMONTAGES

9.1.2 Photomontage Development Process

Photomontages are representations of the Wind Farm that are superimposed onto a photograph of the Site. The process for generating these images involves computer generation of a wire frame perspective view of the Wind Turbines and the topography from each viewpoint.

The photo simulations based on photography from typical sensitive viewpoints are included within the following analysis section. The images that the photo simulations have been based on have been captured with a Canon 40D SLR digital camera with a lens of 50mm which closely represents the central field of vision of the human eye.

The process for photomontage development is demonstrated in the following example:



Computer generated display of existing and proposed wind farm using Digital Terrain Model.

Scaled perspective view of Digital Terrain Model placed over photograph of the existing landscape.

Photomontage developed using scaled photographs of wind turbines.

FIGURE 15: Photomontage Development Process

9.1.3 Photomontage Sky Comparisons

In addition to generating photomontages comparing the existing and proposed views, photomontages have been developed with superimposed skies to compare different backdrops. Although efforts were made to obtain photographs in clear weather, some photographs were taken with a grey sky back drop. To assist in simulating a worst case scenario, a blue sky was overlaid into each of the photomontages to provide a comparison for each viewpoint.



Proposed photomontage developed using original grey sky photograph

Proposed photomontage developed using superimposed blue sky

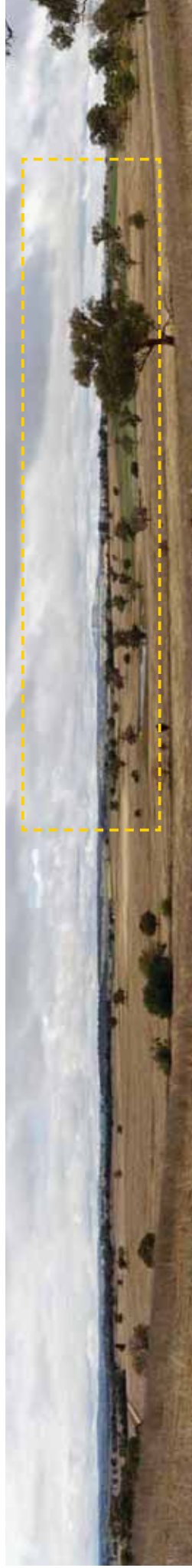
FIGURE 16: Photomontage Sky Comparison Development Process

9.0 PHOTOMONTAGES

PHOTOMONTAGE 1. BWFO4- Forrestvale Road



PHOTOMONTAGE 1A: Existing view from Forrestvale Road



PHOTOMONTAGE 1B: Proposed view from Forrestvale Road



PHOTOMONTAGE 1C: Proposed view zoomed and cropped from Photomontage 1B.



PHOTOMONTAGE 1D: Comparison of backgrounds

9.0 PHOTOMONTAGES

PHOTOMONTAGE 2: BWF09- Unsealed Local Road



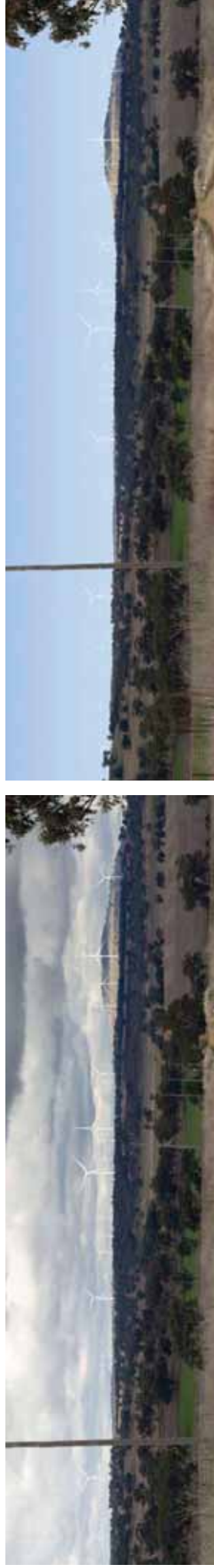
PHOTOMONTAGE 2A: Existing view from unsealed road off Montefiores Nr Elong Elong Road.



PHOTOMONTAGE 2B: Proposed view from unsealed road off Montefiores Nr Elong Elong Road.



PHOTOMONTAGE 2C: Proposed view zoomed and cropped from Photomontage 2B.



PHOTOMONTAGE 2D: Comparison of backgrounds

9.0 PHOTOMONTAGES

PHOTOMONTAGE 3. BWF-13- Bodangora Road



PHOTOMONTAGE 3A: Existing view from Bodangora Road.



PHOTOMONTAGE 3B: Proposed view from Bodangora Road.



PHOTOMONTAGE 3C: Proposed view zoomed and cropped from Photomontage 3B.



PHOTOMONTAGE 3D: Comparison of backgrounds

9.0 PHOTOMONTAGES

PHOTOMONTAGE 4. BWF15- Driel Creek Road



PHOTOMONTAGE 4A: Existing view from Driel Creek Road



PHOTOMONTAGE 4B: Proposed view from Driel Creek Road



PHOTOMONTAGE 4C: Proposed view zoomed and cropped from Photomontage 4B.



PHOTOMONTAGE 4D: Comparison of backgrounds.