

### 8.1 Introduction

The potential significance of visual impact resulting from the construction and operation of the Boco Rock wind farm would result primarily from the combination of the following factors:

- The visibility or extent to which the proposed wind farm structures would be visible from surrounding areas;
- The degree of visual contrast between the wind farm structures and the capability of the surrounding landscape to visually accommodate the wind farm;
- The category and type of situation from which receptors may view the wind farm (examples of receptor categories include residents or motorists);
- The distance between the receptor and the wind farm;
- The potential number of receptors with a view toward the proposed wind farm from any one location;
- The duration of time the receptor may view the wind farm from any static or dynamic view location, and
- The visual sensitivity of receptors surrounding the wind farm.

An overall determination of visual impact at each receptor location has also been assessed and determined against the criteria outlined in **Table 14** below:

**Table 14 - Receptor Location Assessment Criteria**

Criteria	Definition
<b>Category of Viewer</b>	
Static	Residence
Dynamic	Motorist or passenger
<b>Number of Viewers</b>	
High	>500 people per day
Moderate	250 - 500 people per day
Low	100 - 250 people per day
Very Low	<100 people per day
<b>View Distance</b>	
Distant	>15km
Long	10km – 15km
Medium	5 – 10km
Short	1 – 5km
Very short	<1km

Criteria	Definition
<b>Period of View</b>	
Long term	> 2 hours
Moderate term	30 - 120 minutes
Short term	10 – 30 minutes
Very Short Term	< 10 minutes

**Table 15 - Visibility Criteria Matrix**

	Distant and Long Distance			Medium Distance			Short Distance			Very Short Distance		
Period of View	L/M	S	VS	L/M	S	VS	L/M	S	VS	L/M	S	VS
High No. of Viewers	M	L	L	H	M	M	H	H	M	H	H	H
Moderate No. of Viewers	L	L	L	M	M	L	H	M	M	H	H	M
Low No. of Viewers	L	L	L	M	L	L	M	M	L	H	M	L
Very Low No. of Viewers	L	L	L	L	L	L	M	L	L	M	M	L

- **Period of View** L/M=Long to Moderate term, S=Short term , VS=Very Short term
- **Levels of visibility** L=low, M=medium and H=high

The visibility criteria matrix is used **as a guide** to determine visibility ratings. The visibility rating for each receptor location is also considered against other factors, which include the sensitivity of the receptor category. The general relationship between receptor category and its potential level of sensitivity is outlined in the following table:

**Table 16 – Receptor Sensitivity**

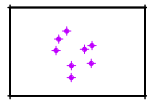
Receptor Category	Sensitivity
<b>Residential Properties</b>	<b>Highest Sensitivity</b>
Pedestrians (recreational)	▽
Public Recreational Space	▽
Rural employment/farming	▽
Motorists	▽
Business (commercial)	▽
Industry	Lower Sensitivity

## 8.2 Residential and Selected Public Receptor Visibility Matrices

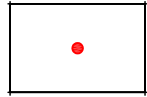
**Tables 17** and **18** present Visibility Matrices for the '125' and '107' layouts of the Boco Rock wind farm development for residential and selected public receptor locations.

Potential residential and selected public receptor locations are illustrated in **Figures 21** and **22**.

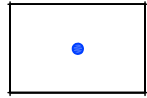
## LEGEND



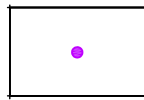
WIND TURBINES - '125'  
INDICATIVE DESIGN LAYOUT



ASSOCIATED RESIDENCE



RESIDENCE BETWEEN 1.5 AND  
5KM FROM TURBINES



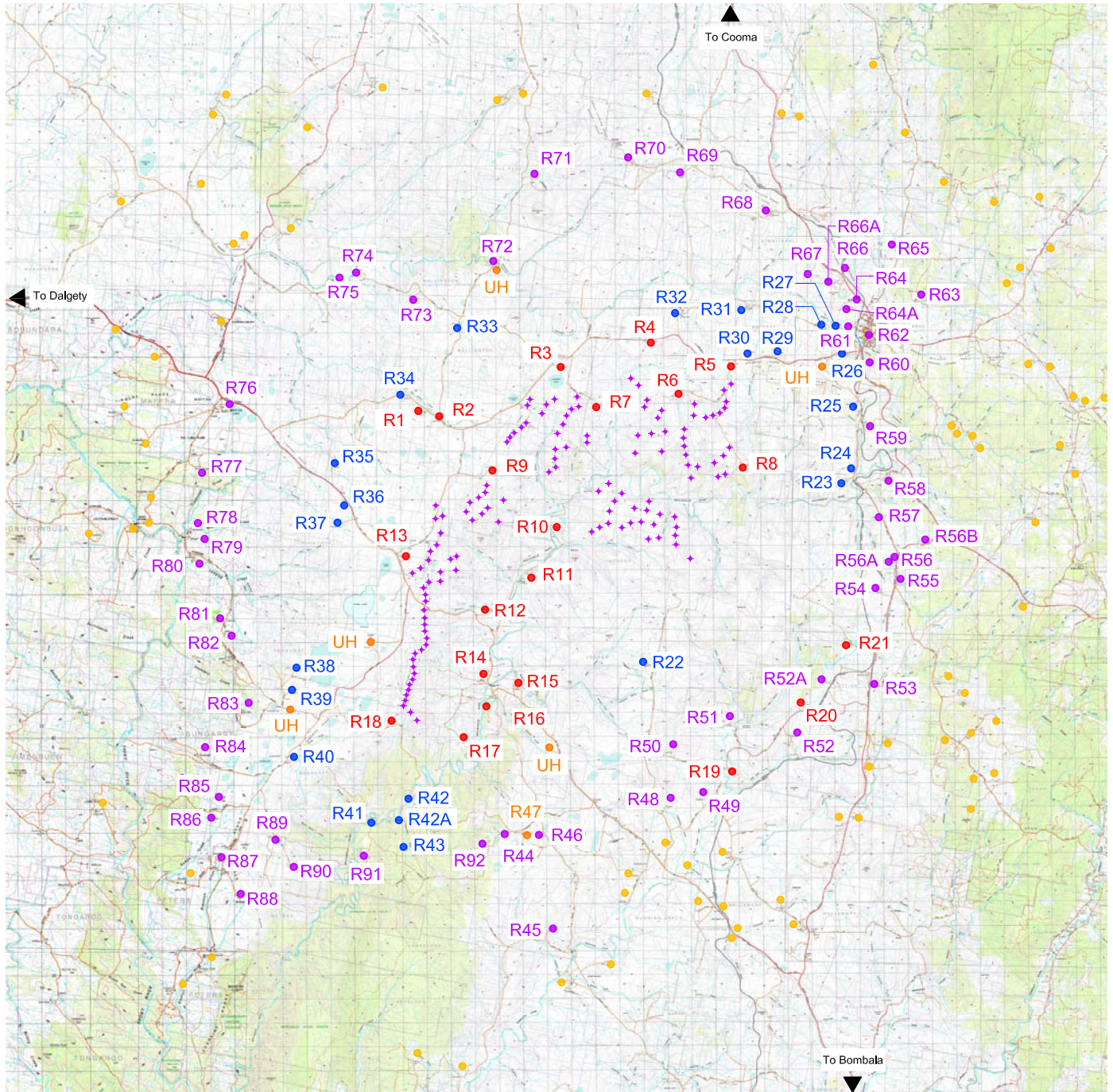
RESIDENCE BETWEEN 5 AND  
10KM FROM TURBINES



RESIDENCE BEYOND 10KM  
FROM TURBINES

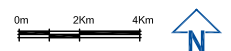


UNINHABITED RESIDENCE



BOCO ROCK WIND FARM - RESIDENTIAL RECEPTOR LOCATIONS

Source: Copyright Department of Lands  
Panorama Avenue Bathurst 2795  
([www.lands.nsw.gov.au](http://www.lands.nsw.gov.au))



# BOCO ROCK WINDFARM

Fig 21 - Residential  
Receptor Locations

**Table 17 - Residential Receptor Matrix**

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R1	Resident 'Springfield' (Associated landowner)	Views east to south east and south from the residence toward the 'Springfield' and 'Sherwins' turbine groups are generally screened through a combination of undulating landform and vegetation surrounding the residential curtilage.	3.9km	3.9km	Low	Potentially long term	Moderate	High	Low	Low	Low
R2	Resident 'Old Springfield' (Associated landowner)	Views east to south east and south from the residence toward the 'Springfield' and 'Sherwins' turbine groups are generally screened through a combination of undulating landform and vegetation surrounding the residential curtilage.	3.1km	3.1km	Low	Potentially long term	Moderate	High	Low	Low	Low
R3	Resident 'Roselea' (Associated landowner)	A band of mature tree planting visually contains views south and east from the residence toward the 'Springfield' and 'Yandra' turbine clusters.	1.5km	1.5km	Low	Potentially long term	Moderate	High	Low	Low	Low



Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R4	Resident 'Wyuna' <b>(Associated landowner)</b>	Views south to south west from the residence toward the wind farm site, including short distance views toward turbines structures.	1.4km	1.4km	Low	Potentially long term	Medium	High	High	High	High
R5	Resident 'Glenfinnan' <b>(Associated landowner)</b>	Very short distance views south from the residence toward the 'Yandra' turbine group are potentially screened by a dense coniferous shelterbelt planted around the south and south west portions of the residence. A number of the Yandra turbines would be visible from areas beyond the shelterbelt planting.	850m	850m	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R6	Resident 'Yandra' <b>(Associated landowner)</b>	Very short distance views east from the residence would potentially include a small number of the 'Yandra' turbine group. Views south and west from the residence are generally screened by mature tree and shelterbelt planting.	960m	960m	Low	Potentially long term	Medium	High	High	High	High
R7	Resident	Views east, south and west from the residence toward	815m	815m	Low	Potentially	Medium	High	High	High	High

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
	'Rockybah' (Associated landowner)	the 'Springfield', 'Boco' and 'Yandra' turbine groups have the potential to include a number of turbine structures or portions of turbines. The extent of views may be restricted by landform rising either side of the residence and tree planting surrounding the residence.				long term					
R8	Resident 'Benbullen' (Associated landowner)	Short distance views west from residence are screened by mature tree and shelterbelt planting surrounding and beyond the residence.	855m	855m	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R9	Resident 'Nestlebrae' (Associated landowner)	Views east to north east from residence toward 'Springfield' and 'Boco' turbine groups.	694m	694m	Low	Potentially long term	Medium	High	High	High	High
R10	Resident 'Boco' (Associated landowner)	Views north and east from residence toward 'Springfield' and 'Boco' turbine groups include a number of turbine structures. Views west from residence toward the 'Sherwins' turbine group are generally screened by	1.7km	1.7km	Low	Potentially long term	Medium	High	High	High	High

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		rising landform.									
R11	Resident 'Riverside' <b>(Associated landowner)</b>	Views west from the residence toward the 'Sherwins' turbine group include a small number of turbine structures. Views north to east from the residence toward the 'Boco' and 'Springfield' turbine groups are screened by undulating landform and vegetation surrounding the residence.	2.4km	2.4km	Low	Potentially long term	Medium	High	High	High	High
R12	Resident 'Sherwood' <b>(Associated landowner)</b>	Views north to north west from the residence toward turbines within the 'Sherwins' turbine group.	2.1km	2.1km	Low	Potentially long term	Medium	High	High	High	High
R13	Resident 'Avonlake' <b>(Associated landowner)</b>	Views east to south east from residence toward the 'Sherwins' turbine group, including short distance view toward a number of turbine structures in the groups northern portion.	652m	652m	Low	Potentially long term	Medium	High	High	High	High
R14	Resident 'Brooklyn' <b>(Associated landowner)</b>	Views north to north west and west from residence toward the 'Sherwins' turbine group are partially screened by tree planting	2.7km	2.7km	Low	Potentially long term	Medium	High	High	High	High



Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		around the residence, although some views toward turbines on ridgelines are likely to occur from the north of the residence.									
R15	Resident 'Windella' (Associated landowner)	Views north to north west and west from the residence toward the 'Sherwins' turbine group are partially screened by windbreak planting around the residence, although some views toward turbines situated on the Sherwin Range ridgeline may occur through gaps in planting.	4.2km	4.2km	Low	Potentially long term	Medium	High	High	High	High
R16	Resident (part time occupant)	Views north west from residence toward 'Sherwins' turbine group are generally directed along Attwater Creek drainage line, with some screening provided by rising landform to the southwest and northeast of the residence. A number of turbines toward the mid and north section of the 'Sherwins' group may be visible along the Sherwin	3.7km	3.7km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		Range ridgeline. It is understood that this residence is a 'weekender' and not permanently occupied.									
R17	Resident (Associated landowner)	Views north to north west from residence toward the southern portion of the 'Sherwins' turbine group, including short distance views toward turbines along the Sherwins Range ridgeline.	2.1km	2.1km	Low	Potentially long term	Medium	High	High	High	High
R18	Resident 'Coopers Hill' (Associated landowner)	Views north to north east from residence toward southern portion of the 'Sherwin' turbine group, including potential short distance and direct views toward turbines situated on the Sherwins Range ridgeline.	884m	884m	Low	Potentially long term	Medium	High	High	High	High
R19	Resident 'Mount Cooper' (Associated landowner)	Views north to north west from residence toward wind farm are blocked by rising landform.	8.6km	8.6km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R20	Resident	Views north to north west from residence toward the	7.6km	7.6km	Low	Potentially	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
	'Telebugrm' (Associated landowner)	wind farm turbines are blocked by a combination of tree cover surrounding the residence and rising landform to the north west of the residence.				long term					
R21	Resident 'Shirley' (Associated landowner)	View north west from residence toward 'Yandra' and 'Boco' turbine groups are blocked by a combination of tree cover and landform.	7.5km	7.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R22	Resident 'Rosemount'	Long distance views north and west toward the Boco and Sherwins turbine groups are generally screened by vegetation and farm buildings surrounding the residence.	5.6km to Yandra turbine group and 9.2km to Sherwins Range turbine group.	5.6km to Yandra turbine group and 9.2km to Sherwins Range turbine group.	Low	Potentially long term	Medium	High	Low	Low	Low
R23	Resident 'Mohawke'	Views west from the residence toward the 'Yandra' and 'Boco' turbine groups would be blocked by landform.	4.5km	4.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R24	Resident Unnamed	Views west from the residence toward the 'Yandra' and 'Boco' turbine groups would be blocked by landform.	5.3km	5.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R25	Resident 'Hyland Grange'	Views west and south west from the residence toward the 'Yandra' and 'Boco' turbine groups are likely to be blocked by a combination of scattered tree cover and undulating landform.	5.2km	5.2km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R26	Resident Unnamed	Short distance views west to south west from residence toward the 'Yandra' turbine group are generally screened by landform rising to the west of the residence, although there is a potential view toward portions of a small number of turbines at the northern extent of the 'Yandra' group.	4.9km	4.9km	Low	Potentially long term	Medium	High	Low	Low	Low
R27	Uninhabited residence	N/A	-	-	-	-	-	-	N/A	N/A	N/A
R28	Resident Unnamed	Views south west from residence toward the 'Yandra' turbine group are potentially screened by adjoining shed and planting around the residence.	4.5km	4.5km	Low	Potentially long term	Medium	High	Low (Nil)	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R29	Resident 'Mia Mia'	Views south west from the residence toward the 'Yandra' turbine group are generally screened by a combination of landform and scattered tree cover.	2.3km	2.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R30	Resident 'Woodbine'	Views south to south west from the residence toward the 'Yandra' turbine group are generally screened by a combination of tree planting along the driveway leading to the residence, as well as the landform rising south toward and beyond Springfield Road. There may be potential for partial views toward a very small number of turbines from areas immediately adjoining the residence.	1.5km	1.5km	Low	Potentially long term	Medium	High	Low (Nil)	Low	Low
R31	Resident 'Curry Flat'	Views south and south west from the residence toward the 'Yandra' and 'Springfield' turbine groups are generally screened by a combination of landform rising toward the Springfield Road and mature tree shelterbelt planting surrounding the	3.3km	3.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		residence.									
R32	Resident 'Old Curry Flat'	Views south to south east from portions of the residence toward the 'Yandra' turbine group are partially screened by tree planting, although potential may exist for views toward turbines from some portions of the residence. The east to north east building orientation offers open views across adjoining farmland. Views west to south west from the residence are likely to be subject to some screening by surrounding agricultural sheds and tree planting beyond.	3.4km	3.4km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate
R33	Resident 'Lynndarra'	Views south to south east from residence toward the 'Springfield' and 'Sherwins' turbine groups are likely to be partially screened by the rising and undulating landform. Views toward turbines are likely to be restricted to upper portions of structures.	4.3km	4.3km	Low	Potentially long term	Medium	High	Low	Low	Low



Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R34	Resident 'Kenilworth'	Views south and south east to east from residence toward the 'Springfield' and 'Sherwins' turbine groups are generally screened by local landform, surrounding structures and vegetation.	4.6km	4.6km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R35	Resident 'Edendale'	Views south east from the residence toward the 'Sherwins' turbine group would be partially restricted by the landform rising to Avonlake Road, although views toward turbines in the northern portion of the 'Sherwins' group may occur from east facing areas of the residence.	4.6km	4.6km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate
R36	Resident 'Tinbury Range'	Views east to south east toward the northern portion of the 'Sherwins' turbine group are generally screened by shelterbelt tree planting beyond the residence.	3.5km	3.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R37	Resident 'Mountain View'	Views east to south east toward the 'Sherwins' turbine group are partially screened by landform, although views from the	3.5km	3.5km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		south of the residence may extend toward the mid to upper sections of the wind turbine structures.									
R38	Uninhabited residence	N/A	-	-	-	-	-	-	N/A	N/A	N/A
R39	Resident 'Belmore'	Views east to north east from residence toward the 'Sherwin' turbine group extend along the Sherwin Range, although some potential exists for screening by existing tree planting.	4.6km	4.6km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate
R40	Uninhabited residence	N/A	-	-	-	-	-	-	N/A	N/A	N/A
R41	Resident 'Xenmore'	Views north from the residence toward the southern portion of the 'Sherwin' turbine group are screened by rising landform to the north and tree cover adjoining the river.	4.5km	4.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R42	Resident 'Merrima'	View north from residence toward the southern portion of the 'Sherwins'	3.3km	3.3km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		turbine group, including potential views toward a small number of turbine structures. The majority of turbines within the 'Sherwins' group would be screened by landform rising to the north of the residence.									
R42A	Resident Unamed	View north from residence toward the southern portion of the 'Sherwins' turbine group, including potential views toward a small number of turbine structures. The majority of turbines within the 'Sherwins' group would be screened by landform rising to the north of the residence.	4.2km	4.2km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate
R43	Resident 'Yarandoo'	View north from the residence toward the 'Sherwins' turbine group is screened by a forested area to the north of the residence.	5.3km	5.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R44	Resident 'Kangaroo Camp'	Views north to north west from the residence toward the 'Sherwins' turbine group are partially	5.8km	5.8km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		screened by tree cover extending along a spur north west of the residence. There is potential for views toward a small number of turbine structures along the southern portion of the 'Sherwins' group.									
R45	Resident 'Khalassa'	Views north from residence toward the wind farm are blocked by landform rising from a drainage line north to northeast from the residence.	10km	10km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R46	Resident 'Long Corner'	Views north to north west from the residence toward the 'Sherwins' turbine group are generally screened by a combination of local landform rising to the northwest of the residence, together with windbreak planting northwest of the residence.	7km	7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R47	Transmitter tower on Wangellic Hill	N/A	-	-	-	-	-	-	N/A	N/A	N/A

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R48	Resident 'Dungaree'	Views north to north west from residence toward wind farm are blocked by rising landform.	9.8km	9.8km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R49	Resident 'Inverlochie'	Views north to north west from residence toward wind farm are blocked by rising landform.	9.6km (12km to closest visible turbine)	9.6km (12km to closest visible turbine)	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R50	Resident 'Wyandra'	View north to north west from residence toward wind turbines are generally blocked by landform.	7.6km	7.6km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R51	Resident 'Le Tompe'	Views north to north west from residence toward wind farm are blocked by rising landform.	6.7km	6.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R52	Resident 'Rosedale'	View north to north west from residence toward wind farm turbine is blocked by landform.	8.3km	8.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R52A	Resident	View north to north west from residence toward wind farm turbine is blocked by landform.	7.5km	7.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R53	Resident	Long distance view west to north west from residence generally screened by tree planting west of residence.	9.4km	9.4km	Low	Potentially long term	Medium	High	Low	Low	Low
R54	Resident 'Jettiba'	Medium distance views west to north west from the residence toward the wind farm turbines are generally contained by scattered tree planting and sections of shelterbelt tree planting around the property. Some limited potential for views toward portions of a small number of turbines from areas within the property.	8.0km	8.0km	Low	Potentially long term	Medium	High	Low	Low	Low
R55	Resident 'Tea Gardens'	Medium distance views west to north west toward the 'Yandra' and 'Boco' turbine groups are generally blocked by a combination of surrounding mature tree planting and local undulating landform to the north west of the residence.	8.8km	8.8km	Low	Potentially long term	Medium	High	Low	Low	Low
R56	Resident 'Bellevue'	Views west to north west from the residence toward the 'Boco' and 'Yandra' turbine groups are	7.9km	7.9km	Low	Potentially long term	Medium	High	Nil	Nil	Nil



Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		generally contained by mature tree cover surrounding the residence.									
R56A	Resident	Views west to north west from residence toward the 'Boco' and 'Yandra' turbine groups are blocked by mature tree planting around the west to north west.	7.8km	7.8km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R56B	Resident	Views west to north west from residence toward the 'Boco' and 'Yandra' turbine groups are blocked by mature tree planting and shelterbelt planting to the west of the residence.	8.9km	8.9km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R57	Resident	Views west from residence toward the 'Yandra' and 'Boco' turbine groups are generally screened by tree and shrub vegetation surrounding the property as well as established shelterbelt planting within the property.	6.7km	6.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R58	Resident 'Riverview'	Views west from residence toward the 'Yandra' turbine group are generally	6.8km	6.8km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		screened by a combination of tree planting surrounding the residence together with undulating landform to the west and north west of the residence.									
R59	Resident 'Clifton'	Views west from residence toward the 'Yandra' turbine group are generally screened by a combination of tree planting surrounding the residence together with undulating landform to the west and north west of the residence.	6.0km	6.0km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R60	Resident	Views from residence are generally orientated north south, with views west toward the 'Yandra' turbine group screened by surrounding vegetation.	5.9km	5.9km	Low	Potentially long term	Medium	High	Low (Nil)	Low	Low
R61	Residents – Clarke Street west	Views south west from residences toward the 'Yandra' turbine group are generally screened by tree planting around residences, including windbreak planting to the south west of residences.	5.5km	5.5km	Low	Potentially long term	Medium	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		Views toward the majority of turbines are also restricted by landform rising beyond Springfield Road.									
R62	Residents Nimmitabel Township	<p>The majority of views from residences within Nimmitabel are contained or generally restricted within the urban envelope, largely by adjoining or surrounding buildings and/or tree cover.</p> <p>Views from elevated areas within Nimmitabel, including residences around St.Andrews Church may have medium distance views toward a small portion of the 'Yandra' turbine group, although views are likely to be partially restricted by landform and scattered tree cover east of the wind farm site.</p>	6.0km	6.0km	Low	Potentially long term	Medium	High	Low (Nil for majority of residents)	Low (Nil for majority of residents)	Low (Nil for majority of residents)
R63	Residents Nimmitabel north east	Views from a small number of residences south west toward the 'Yandra' turbine group are generally screened by tree cover	8.5km	8.5km	Low	Potentially long term	Medium	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		around and beyond residences.									
R64	Resident	Medium distance views from residence toward the 'Yandra' turbine group potentially and partially screened by landform rising above Springfield Road together with scattered tree cover. Views toward a small number of the Yandra' turbines are likely to be restricted to upper portions of the turbine structures.	6.3km	6.3km	Low	Potentially long term	Medium	High	Low	Low	Low
R64A	Resident	View south west from residence toward the 'Yandra' turbine group is screened by mature tree planting surrounding the residence.	5.7km	5.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R65	Resident	View south west from residence toward the 'Yandra' turbine group is screened by mature tree planting surrounding the residence.	8.8km	8.8km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R66	Resident 'Erindale'	View south west from residence toward the	6.7km	6.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		'Yandra' turbine group is screened by mature tree planting surrounding the residence.									
R66A	Resident 'Kookaburra'	View south west from residence toward the 'Yandra' turbine group is screened by mature tree planting surrounding the residence.	5.9km	5.9km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R67	Resident 'Murrumbong'	View south west from residence extends toward the 'Yandra' turbine group across undulating landform with scattered tree cover. Tree planting surrounding residence is likely to provide some partial screening.	5.6km	5.6km	Low	Potentially long term	Medium	High	Low	Low	Low
R68	Resident 'Bobingah'	Views south west from residence toward the 'Yandra' turbine group are screened by a combination of vegetation within the curtilage of the residence as well as landform rising to the south west.	7.3km	7.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R69	Resident 'Fairfield'	View south from residence (and tennis court) toward	8.7km	8.7km	Low	Potentially long term	Medium	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		the 'Yandra' turbine group above the Springfield Road ridgeline. Views would be generally restricted to 'leading edge' of the 'Yandra' group with lower portions of turbines partially screened by scattered tree cover.									
R70	Resident 'The Peak'	Views south from residence toward wind farm turbine groups, although position of residence is set back from break of slope, with views extending along 3km of ridgeline extending south from The Peak.	8.9km	8.9km	Low	Potentially long term	Medium	High	Low	Low	Low
R71	Resident 'Lincluden'	Views south from the residence toward the turbines are blocked by landform.	9.3km	9.3km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R72	Resident 'Rock Lodge'	Views south east from the residence toward the turbines are blocked by landform.	5.8km	5.8km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R73	Resident 'Koolula'	Views south east from the residence toward the turbines are blocked by	6.5km	6.5km	Low	Potentially long term	Medium	High	Nil	Nil	Nil



Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		landform.									
R74	Resident 'Maloppo'	Views south east from the residence toward the turbines are blocked by landform.	8.9km	8.9km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R75	Resident 'Avondale'	Views south east from the residence toward the turbines are blocked by landform.	9.6km	9.6km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R76	Resident 'Maffra'	Views east to south east from residence toward the 'Sherwins' and 'Springfield' turbine groups are screened by tree planting and windbreaks surrounding and beyond the residence.	9.7km	9.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R77	Resident 'Torwood Lea'	Views extend east to south east from residence toward the 'Springfield' and 'Sherwins' turbine groups. Distant views are likely to be partially screened by scattered tree cover crossing ridgeline areas.	9.6km	9.6km	Low	Potentially long term	Medium	High	Low	Low	Low
R78	Resident 'Booroola'	Views east from the residence toward the 'Sherwins' turbine group	9.4km	9.4km	Low	Potentially long term	Medium	High	Nil	Nil	Nil

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		are generally blocked by landform.									
R79	Resident 'Billigal'	Views east from the residence toward the 'Sherwins' turbine group are generally blocked by landform.	9.4km	9.4km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R80	Resident 'Mynora'	Views east to south east from the residence toward the 'Sherwins' turbine group are generally screened by a combination of tree planting and undulating landform rising toward the Sherwin Range. Some limited potential for views toward upper sections of wind turbine structures.	9.2km	9.2km	Low	Potentially long term	Medium	High	Low	Low	Low
R81	Resident 'Kinross'	Views east from residence toward the 'Sherwins' turbine group are generally screened by landform rising to the east and south east, as well as tree planting/windbreak around the residence.	8.1km	8.1km	Low	Potentially long term	Medium	High	Low	Low	Low
R82	Resident 'Idaho'	Views east from residence toward the 'Sherwins'	8.0km	8.0km	Low	Potentially long term	Medium	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		turbine group are generally screened by landform rising to the east and south east. Any potential views toward the turbine structures are likely to be restricted to the upper portions, or tips of blades.									
R83	Resident 'Bayliss Glen'	Views east from the residence toward the 'Sherwins' turbine group are generally blocked by landform.	6.7km	6.7km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R84	Resident 'Snowleigh'	Views northeast from the residence toward the 'Sherwins' turbine group are generally blocked by landform.	8.4km	8.4km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R85	Resident 'Pineleigh'	Views northeast from residence toward the 'Sherwins' turbine group extend across open and gently undulating agricultural land. There is some potential for local screening by windbreak planting around residence.	8.6km	8.6km	Low	Potentially long term	Medium	High	Low	Low	Low
R86	Resident 'Lochiel'	Views northeast from residence toward the	9.2km	9.2km	Low	Potentially long term	Medium	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
		'Sherwins' turbine group extend across open and gently undulating agricultural land. There is some potential for local screening by windbreak planting around residence.									
R87	Resident 'Banda'	Long distance views north east from residence toward the 'Sherwins' turbine group are partially screened by the undulating landform between the residence and the turbine group.	10.0km	10.0km	Low	Potentially long term	Medium	High	Low	Low	Low
R88	Resident 'Merambego'	Long distance views north east from residence toward the 'Sherwins' turbine group are partially screened by the undulating landform between the residence and the turbine group.	10.0km	10.0km	Low	Potentially long term	Medium	High	Low	Low	Low
R89	Resident 'Barbers Lake'	Views north from residence toward the southern portion of the 'Sherwins' turbine group, including views toward a small number of turbine structures.	7.8km	7.8km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Distance to closest turbine '125' layout	Distance to closest turbine '107' layout	Relative number of receptors	Period of view	Landscape Sensitivity	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layout
R90	Resident 'Fern Glen'	Views north from the residence toward the southern portion of the 'Sherwins' turbine group are partially screened by landform rising to the north of the residence, together with scattered tree cover.	8.0km	8.0km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate
R91	Resident 'Monastery'	Views north from the monastery toward the southern portion of the 'Sherwins' turbine group are blocked by rising landform and surrounding tree cover.	6.0km	6.0km	Low	Potentially long term	Medium	High	Nil	Nil	Nil
R92	Resident 'The Vineyard'	Views north from the residence toward the southern portion of the 'Sherwins' turbine group are partially screened by tree planting surrounding the residence, although turbines may be visible through gaps between trees.	5.8km	5.8km	Low	Potentially long term	Medium	High	Moderate	Moderate	Moderate

### 8.3 Residential Receptors beyond 10km

The residential receptor matrix included locations up to a distance of 10km from the wind turbines. In addition to the assessment of residential receptor locations within 10km of the wind farm project area, the LVIA also reviewed potential wind farm visibility for a number of residential receptors beyond 10km of the wind farm. These residential receptor locations are illustrated on **Figure 21**.

Potential residential receptors beyond 10km occur within small groups or are individually dispersed throughout the surrounding landscape. As with the majority of residential receptors within the landscape surrounding the wind farm project area, the residential dwellings beyond 10km are generally located in sheltered positions avoiding exposed hilltop locations, or occur within timbered areas.

A number of the distant residential dwellings also utilise windbreak planting to reduce the influence of the prevailing wind and weather, which tend to screen potential and distant views toward portions of the wind farm. The majority of windbreak planting around residences within, and surrounding, the project area principally consist of evergreen tree species; and are therefore not subject to seasonal loss of foliage.

Overall the LVIA determined that residential receptors beyond 10km from the wind farm would be unlikely to experience a visual impact any greater than Low, and for the majority of these distant receptors, views toward the wind farm would be likely to be screened by a combination of undulating landform and timbered areas.

### 8.4 Future Residential Receptors

The LVIA notes comments provided by Bombala Council in their response to a request for input into the Director General's Requirements for the Boco Rock wind farm. The comments provided by Council included a request for an assessment of impacts on (future) residential developments adjacent to the site. Although the comment provided by Council relates specifically to potential noise impacts, the potential visual impact for future residential development is also considered relevant.

Council advise that the Bombala Local Environmental Plan currently allows for the erection of a dwelling on existing crown portions, and that a large number of such portions may be located immediately adjacent to the wind farm development. Although there are no detailed plans for future residential development that would enable a comprehensive assessment of potential visual impact to be determined, it is possible to review the characteristics of existing residential development in areas surrounding the proposed wind farm development.

In general existing residential dwellings in the vicinity of the wind farm are located below surrounding ridgelines to maximise potential for shelter from prevailing wind, and/or where

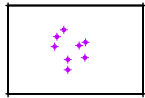


exposed tend to include a degree of shelter from windbreak planting or tree planting around dwellings. The tendency to locate residential dwellings in sheltered situations also acts to limit the extent of available views across the surrounding landscape for the majority of residential receptors, although there are a small number of dwellings that appear to have been located on properties to take advantage of distant and panoramic views.

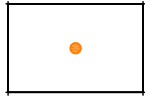
Potential future planning for residential dwellings would be able to take advantage of an approved layout design whilst determining the optimal location for residential dwellings on individual portions of land to minimise views toward wind turbines. In some circumstances future residential dwellings could be located to take advantage of local topographic features in order to screen views toward wind turbines or implement in advance mitigation measures such as tree planting for windbreak and/or screening purposes.

Should, as Council suggest, a large number of residential dwellings be constructed on existing crown portions immediately adjacent to the wind farm site, there is likely to be an associated visual impact not only with additional residential structures within the landscape but also a range of domestic infrastructure associated with it.

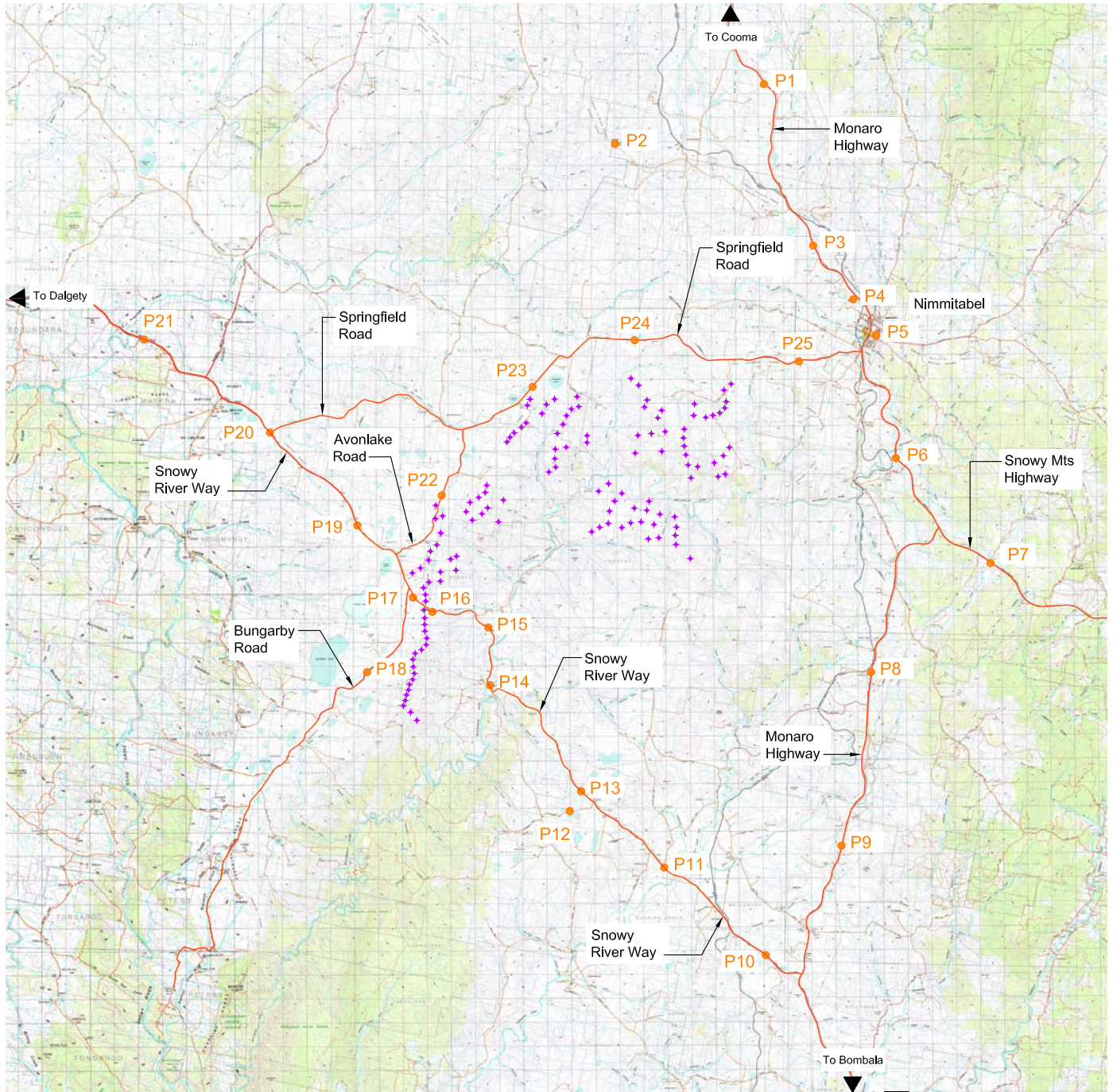
## LEGEND



WIND TURBINES - '125' INDICATIVE  
DESIGN LAYOUT



KEY PUBLIC VIEW LOCATION



BOCO ROCK WIND FARM - SELECTED PUBLIC RECEPTOR LOCATIONS

Source: Copyright Department of Lands  
Panorama Avenue Bathurst 2795  
([www.lands.nsw.gov.au](http://www.lands.nsw.gov.au))



Fig 22 - Selected Public  
Receptor Locations

# BOCO ROCK WINDFARM

**Table 18 - Selected Public Receptor Matrix**

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
P1	Monaro Highway (southbound, north of Nimmitabel)	Views from vehicles travelling south along the highway extend across the surrounding Monaro landscape, with views toward the wind farm blocked by undulating landform.	10 – 15km	10-15km	High	Very short term	High	Nil	Nil	Nil
P2	The Peak – lookout	Extensive regional views across the Monaro toward the Snowy Mountain Range and Victorian Alps. Views toward the wind farm site from the transmitter station are partially screened by trees to the east of the control building, but visibility is variable depending on receptor position.  The wind turbines, when viewed from above and against the backdrop of the landscape, would only form a small element within the overall and available view catchment from this location.	9.8km	9.8km	Low	Short to Moderate	High	Low	Low	Low
P3	Monaro Highway (southbound, north of Nimmitabel)	Views from vehicles travelling south to south east along the highway are partially contained and restricted by landform rising to the south west of the road	6-10km	6-10km	High	Very short term		Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
		corridor.  Opportunities to view the wind farm are limited and, if available, would be for a very short duration from a vehicles travelling at the permitted speed (100km per hour) on this section of the highway.								
P4	Nimmitabel Cemetery	Views south west from the western portion of the Nimmitabel 'pioneers cemetery' toward the 'Yandra' turbine group include potential views toward upper sections of a small number of turbines (around <6).	6km	6km	Low	Short term	High	Low	Low	Low
P5	Nimmitabel Township	Views toward the wind farm from public areas within Nimmitabel, including streets, parks and the driver rest area, are generally screened by surrounding buildings, vegetation and landform.  Potential views from elevated areas within the Nimmitabel township, including Kirke Street, may extend toward upper sections of turbine structures; however views would be limited to a small number of turbines (around >5)	6 – 6.5km	6-6.5km	High	Moderate	High	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
P6	Monaro Highway (south of Nimmitabel to junction with Snowy Mountain Highway)	Indirect views west toward the wind farm would be blocked by landform rising to the west.	6 -7km	6-7km	High	Very short term	Low	Nil	Nil	Nil
P7	Snowy Mountains Highway	Views toward the wind farm from the Snowy Mountains Highway would be screened by a combination of landform and vegetation.	9.5 -15km	9.5 -15km	High	Very short term	Low	Nil	Nil	Nil
P8	Monaro Highway (Holts Flat)	Indirect views from the highway toward the wind farm tend to be screened by a combination of landform and vegetation.	9km	9km	High	Short term	Low	Nil	Nil	Nil
P9	Monaro Highway (south)	Indirect views from vehicles travelling north to north east on highway are likely to be screened by the rising and undulating landform between the highway and the wind farm.	10 - 16km	10 - 16km	High	Short term		Nil	Nil	Nil
P10	Snowy River Way (southeast)	Long distance views toward the wind farm are generally screened by rising and undulating landform extending north to north west from the	<15km	<15km	Low	Very short term	Low	Nil	Nil	Nil



Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
		road corridor.								
P11	Snowy River Way (at Fishy Lane Road)	Views from vehicles travelling north west toward the wind farm are likely to be screened by landform rising above and beyond the Cambalong Creek line.	10 – 15km	10 – 15km	Low	Very short term	Low	Nil	Nil	Nil
P12	Gunningrah Road	Indirect views from road corridor west to north west over extensive area of landscape, including views toward turbine structures.	7.5 – 12km	7.5 – 12km	Low	Very short term	Low	Low	Low	Low
P13	Snowy River Way (crossing plateau)	Views from vehicles travelling north west crossing the plateau beyond Gunningrah road junction. Distant views extend toward the Sherwins turbine group located along ridgeline.	8km	8km	Low	Very short term	Low	Low	Low	Low
P14	Snowy River Way (at Alan Caldwell bridge)	Generally open views toward the 'Sherwins' turbine group from vehicles descending Snowy River Way north west toward the Maclaughlin River. Views from the vicinity of the bridge crossing are subject to some degree of screening toward some turbine structures due to the influence of the local landform.	3km	3km	Low	Very short term	Low	Low	Low	Low

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
P15	Snowy River Way (at Boco Road)	Indirect views from vehicles toward the 'Sherwins' turbine group heading north from the Alan Caldwell bridge, with a steep section of landform rising to the west of the road, although views tend to open and extend along the Sherwin Range ridgeline as the road begins to climb toward the top of the ridgeline.	2.8km	2.8km	Low	Very short term	Low	Moderate	Moderate	Moderate
P16	Snowy River Way (crossing Sherwins Range east to west)	Views from vehicles crossing the Sherwin Range ridgeline, east to west, extend across a gently undulating section of pasture tableland with small lake depressions. The 'Sherwins' turbine group, extending north to south, either side of the Snowy River Way would be visible for a short section of road (<2km) before the main direction of travel would direct views away from the turbine structures.  The road crosses the ridgeline at around 990m AHD and continues at this height in a northwest direction for a short distance before dipping slightly toward a drainage line. There are no significant views toward	<1km	<1km	Low	Very short term	Low	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
		the Snowy Mountain Range at this general location.								
P17	Snowy River Way (crossing Sherwins Range west to east)	Views from vehicles crossing the Sherwin Range ridgeline, west to east, extend down toward the Maclaughlin River valley and beyond across the undulating Monaro landscape. Potentially distant views toward the 'Boco' wind turbine group, although these views diminish rapidly as vehicles descend into the Maclaughlin River valley.	<1km – 8km	<1km – 8km	Low	Very short term	Low	Moderate	Moderate	Moderate
P18	Bungarby Road	Views from approximately 12km of road travelling north to north east and south to south west, toward 'Sherwins' turbine group. Views would extend toward the majority of turbine structures along the Sherwin Range ridgeline.	Varies with receptor location along road (1 to 8km)	Varies with receptor location along road (1 to 8km)	Very Low	Very short term	Moderate (local residential traffic)	Moderate	Moderate	Moderate
P19	Snowy River Way	Views from vehicles travelling south east toward the 'Sherwins' turbine group extend across and along the Sherwin Range ridgeline, taking in a number of turbine structures. Views beyond 4km of the wind turbines tend to be influenced, and partially screened, by the landform falling alongside	2km	2km	Low	Very short term	Low	Moderate	Moderate	Moderate



Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
		drainage lines.								
P20	Snowy River Way (at Springfield Road)	View from vehicles travelling south east toward the 'Sherwins' turbine group are likely to extend north east and south east across the Sherwin Range and toward a number of the turbine structures.	7 – 8km	7 – 8km	Low	Very short term	Low	Low	Low	Low
P21	Snowy River Way (north west)	Views from vehicles travelling south east toward the 'Sherwins' turbine group are partially screened in places by landform and road descending to the Bobundara Creek line, although distant views are likely to extend toward northern portions of the 'Sherwins' and 'Springfield' turbine groups.	10km	10km	Low	Very short term	Low	Low (Nil in places)	Low (Nil in places)	Low (Nil in places)
P22	Avonlake Road	Views from vehicles travelling north east and south west along an approximate 6.5km section of Springfield Road toward the 'Springfield' and northern portion of the 'Sherwins' turbine groups, including a short section of road passing between turbine structures.	<1km – 1.5km	<1km – 1.5km	Very Low	Very short term	Low	Moderate	Moderate	Moderate
P23	Springfield Road	Views from vehicles travelling north east and south west along an approximate 5km section of	<1km – 2km	<1km – 2km	Low	Very short	Low	Moderate	Moderate	Moderate

Receptor Location	Category of Potential Receptor	View context	Approx. distance to closest turbine '125' layout	Approx. distance to closest turbine '107' layout	Relative number of receptors	Period of view	Receptor sensitivity	Visibility Rating '125' layout	Visibility Rating '107' layout	Overall Visual Impact for '125' and '107' layouts
		Springfield Road toward the 'Springfield' and northern portion of the 'Sherwins' turbine groups.				term				
P24	Springfield Road	Indirect and prominent view from ridgeline location on a short section Springfield Road. Views extend south to south west across the wind farm project area with potential for extensive regional views.	1.6km	1.6km	Low	Very short term	Low	Low	Low	Low
P25	Springfield Road (east of wind farm)	Views from vehicles travelling west along Springfield Road are generally screened by a combination of landform and tree cover for a distance of around 4km west of Nimmitabel.	1 – 6km	1 – 6km	Low	Very short term	Low	Nil	Nil	Nil

## 8.5 Summary of Potential Visual Impact

The LVIA identified a total of ninety-seven potential residential receptor locations within 10km of the wind farm. Three of the residential receptor locations (R27, R38 and R40) were determined to be uninhabited. One receptor location identified during the desk top study was identified as a communication facility with no residential dwelling (R47) recorded as present.

An assessment of each potential residential receptor location indicated that for the wind farm '125' and '107' design layouts:

- 12 of the 94 residential receptor locations have been determined to have a **High** visual impact.
- 11 of the 94 residential receptor locations have been determined to have a **Moderate** visual impact;
- 27 of the 94 residential receptor locations have been determined to have a **Low** visual impact; and
- 44 of the 94 residential receptor locations have been determined to have a **Nil** visual impact.

All of the twelve residential receptors determined to have a potential **High** visual impact are associated landowners hosting wind turbines on their property.

The field assessment for the majority of residential receptors was undertaken from the closest publicly accessible location, with a conservative approach adopted where there was no opportunity to confirm the actual extent of available view from areas within or immediately surrounding the residence. It is anticipated that some visibility ratings would be less than those determined subject to a process of verification from private property.

A total of 25 selected public receptor locations were identified as part of the visual assessment process.

An assessment of the visual impact for each potential selected public receptor location indicated that for the Boco Rock wind farm '125' and '107' layout options:

- 0 of the 25 public receptor locations have been determined to have a **High** visual impact;
- 7 of the 25 public receptor locations have been determined to have a **Moderate** visual impact;
- 10 of the 25 public receptor locations have been determined to have a **Low** visual impact; and
- 8 of the 25 public receptor locations have been determined to have a **Nil** visual impact.

It should be noted that the term 'visual impact' may not necessarily imply or represent an individual's negative response toward the visibility of wind turbines, and that perceptions of wind farms amongst individuals within any community can be positive, negative or neutral.

Note: Traffic Volume figures (AADT's) and resultant determination of motorist receptor numbers have been sourced from the Boco Rock wind farm Traffic and Transport Study, prepared by Bega Duo Designs (March 2009).

### 9.1 On site electrical works (subject to Part 3A assessment)

The Boco Rock wind farm would include a range of electrical infrastructure to collect and distribute electricity generated by the wind turbines. Electrical works would include:

- Single circuit 33kV overhead electrical line;
- 100m x 100m collector substation facility;
- Generator transformer; and
- Underground 33kV and control cables.

The majority of electrical connections between the wind turbines and on site substation would be via underground cabling, including areas along a number of the prominent ridgelines within the project boundary.

Some overhead electrical line would be required to connect the 'Yandra', 'Boco' and 'Springfield' turbine groups to the collector substation. Around 4km of overhead line would extend approximately east to north east from the collector substation toward the 'Yandra' turbine group, with a short section, around 0.5km, extending north toward the 'Springfield' group. The 'Boco' group would be connected to the collector substation by around 3.5km of overhead line extending approximately east to west from the turbine group. The overhead electrical line would generally extend down slopes from minor spurs between drainage lines and along slopes above the MacLaughlin River. The overhead lines would cross a small number of drainage lines, including the MacLaughlin River between Gentle Barlow Creek and Coal Pit Gully. The final design and alignment of the overhead line would seek to minimise disturbance to, or removal of, existing vegetation.

The 33kV electrical line is a relatively small infrastructure element, and where mounted on single spun concrete poles would appear similar in scale to domestic distribution lines and other small scale electrical infrastructure located in surrounding areas.

Overall the 33kV electrical lines would tend to be visually contained within the project area.

### 9.2 132kV transmission line and off-site substation (subject to Part 5 assessment)

The off-site substation and 132kV transmission line would be subject to Part 5 approval of the EP&A Act. The Part 5 assessment would include a detailed consideration and determination of potential landscape and visual impacts associated with the proposed transmission line and off site substation works.

Subject to the alignment of the preferred route, the 132kV transmission line is unlikely to impact on a significant number of residential receptors, but is likely to be exposed to a high

number of motorists travelling along the Monaro Highway. A detailed landscape and visual assessment would also need to consider the potential impacts associated with the transmission line crossing or following drainage lines, as well as the clearance of vegetated areas to accommodate the transmission line easement.

The proposed pole design for the 132kV transmission line is anticipated to be a single tapered concrete pole. **Plate 15 and 16** illustrate a typical arrangement for a single circuit pole 132kV transmission line, including angle and intermediate poles; however, the final selected pole assembly may incorporate an alternative arrangement for the location of cross arms and insulators as a dual circuited transmission line.



**Plate 15.** 132kV transmission line – typical intermediate pole.



**Plate 16.** 132kV transmission line – typical angle pole.

A key consideration within the design process for the 132kV transmission line would be to avoid residential dwellings and sensitive receptors wherever possible. **Table 17** provides a summary of typical mitigation measures which could be adopted to minimise potential visual impact.

**Table 19 – 132kV transmission line mitigation measures**

Component	Potential Mitigation	Life Cycle Stage
General alignment	A careful and considered route selection process to avoid sensitive receptors and loss of existing vegetation where possible.	Planning, Construction and Operation.
Pole location	Wherever possible, select angle positions in strategic locations to minimise potential visual impact (eg avoiding, where possible, skyline views) and to provide a maximum setback from residences and road corridors.	Planning and Construction.
Pole design	Selection of suitable component materials with low reflective properties.	Construction and Operation.
Conductors	Selection of materials with low reflective	Construction and Operation.

Component	Potential Mitigation	Life Cycle Stage
	properties.	
Insulators	Selection of materials with low reflective properties.	Construction and Operation.
Erosion control	Appropriate control and removal of spoil from construction areas.	Construction.
Construction materials and equipment storage areas	Selection of suitable storage areas for materials or plant with minimum visibility from residences and roads with screening where necessary.	Construction.
Landscape Treatments	Strategic tree or shrub planting between the receptor and the transmission line.	Construction and Operation.

The off site substation would be located toward the point of connection to the existing transmission lines. The substation would contain a mix of electrical infrastructure typically included in this type of facility. The substation would be around 20m x 20m, surrounded by a security fence.

### 10.1 Photomontages

Photomontages have been prepared by Garrad Hassan to illustrate the general appearance of the Boco Rock wind farm following construction. Seven locations were selected for the '125' design layout (Locations A to G) and two for the '107' design layout (Locations B and C) to illustrate the Boco Rock wind farm from surrounding areas.

The photomontage locations were selected following a review of preliminary ZVI maps, together with a site inspection to identify potential representative viewpoints. As none of the non-associated residential dwellings surrounding the wind farm project area was considered to result in a high visual impact, the photomontage locations were selected from surrounding public areas and road corridors. The photomontages locations illustrate a range of distances between the viewpoint and wind turbine (between 1.2km and 7.4km) and illustrate the potential influence of distance on visibility.

The majority of the photomontages represent the '125' design layout, as with the greater number of wind turbines the '125' design layout could present a worst case visual impact. Two of the '125' design layout photomontages locations were also selected for the '107' design layout photomontages locations to provide a direct comparison of the alternative design layouts.

The photomontages locations are illustrated in **Figure 23** and photomontages presented in the following figures:

- **Figure 24**, Location A from Springfield Road, for the '125' design layout.
- **Figure 25**, Location B from the Snowy River Way (east of the Sherwin Range), for the '125' design layout.
- **Figure 26**, Location C from the Snowy River Way (west of the Sherwin Range), for the '125' design layout.
- **Figure 27**, Location D from Ironmungy Road (west of the Sherwin Range), for the '125' design layout.
- **Figure 28**, Location E from Bungarby Road (west of the Sherwin Range), for the '125' design layout.
- **Figure 29**, Location F from Old Bombala Road (east of the wind farm site), for the '125' design layout.
- **Figure 30**, Location G from Richardson's Road (east of the Sherwin Range) for the '125' design layout.



- **Figure 31**, Location B from the Snowy River Way (east of the Sherwin Range), for the '107' design layout.
- **Figure 32**, Location C from the Snowy River Way (west of the Sherwin Range), for the '107' design layout.

Each photomontage was generated through the following steps:

- A digital terrain model (DTM) of the Boco Rock wind farm site was created from a terrain model of the surrounding area using digital contours;
- The site DTM was loaded in the Garrad Hassan 'WindFarmer' software package;
- The layout of the wind farm and 3 dimensional representation of the wind turbine was configured in GH 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;
- Adjustments were made to the combined image for fogging due to haze or distance, as well as screening by vegetation or obstacles;
- The final image was converted to JPG format and imported and annotated as the final figure.

The photomontage figures have been included at A4 format in the LVIA for discussion purposes only, and are also included at an A3 format in **Volume 2** of the Environmental Assessment.

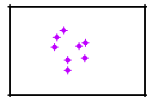
The extent of horizontal and vertical views within the majority of the photomontage illustrations generally exceed the parameters of normal human vision; however, in reality the eyes, head and body can all move and under normal conditions a person will sample a broad area of the landscape within a panoramic view. Rather than restricting the extent of each photomontage to a single photographic image, a broader field of view is presented to more fully illustrate the extent of the wind turbines.

A bench mark study was carried out to verify the production of the photomontages in both technical and perceptual accuracy. The bench mark study, carried out for the superseded '127' design layout, confirmed that the procedures used to construct the photomontages

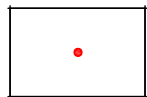
resulted in a technically accurate representation of wind turbines. The Capital Hill wind farm bench mark study is included in the LVIA **Appendix B**.

Whilst a photomontage can provide an image that illustrates a reasonably accurate representation of a wind turbine in relation to its proposed location and scale relative to the surrounding landscape, the 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.

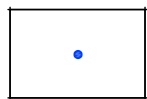
## LEGEND



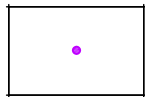
WIND TURBINES  
INDICATIVE '125' DESIGN LAYOUT



ASSOCIATED RESIDENCE



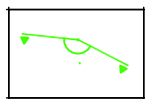
RESIDENCE BETWEEN 1 TO 5KM  
OF WIND FARM



RESIDENCE BETWEEN 5 TO 10KM  
OF WIND FARM



RESIDENCE BEYOND 10KM  
OF WIND FARM



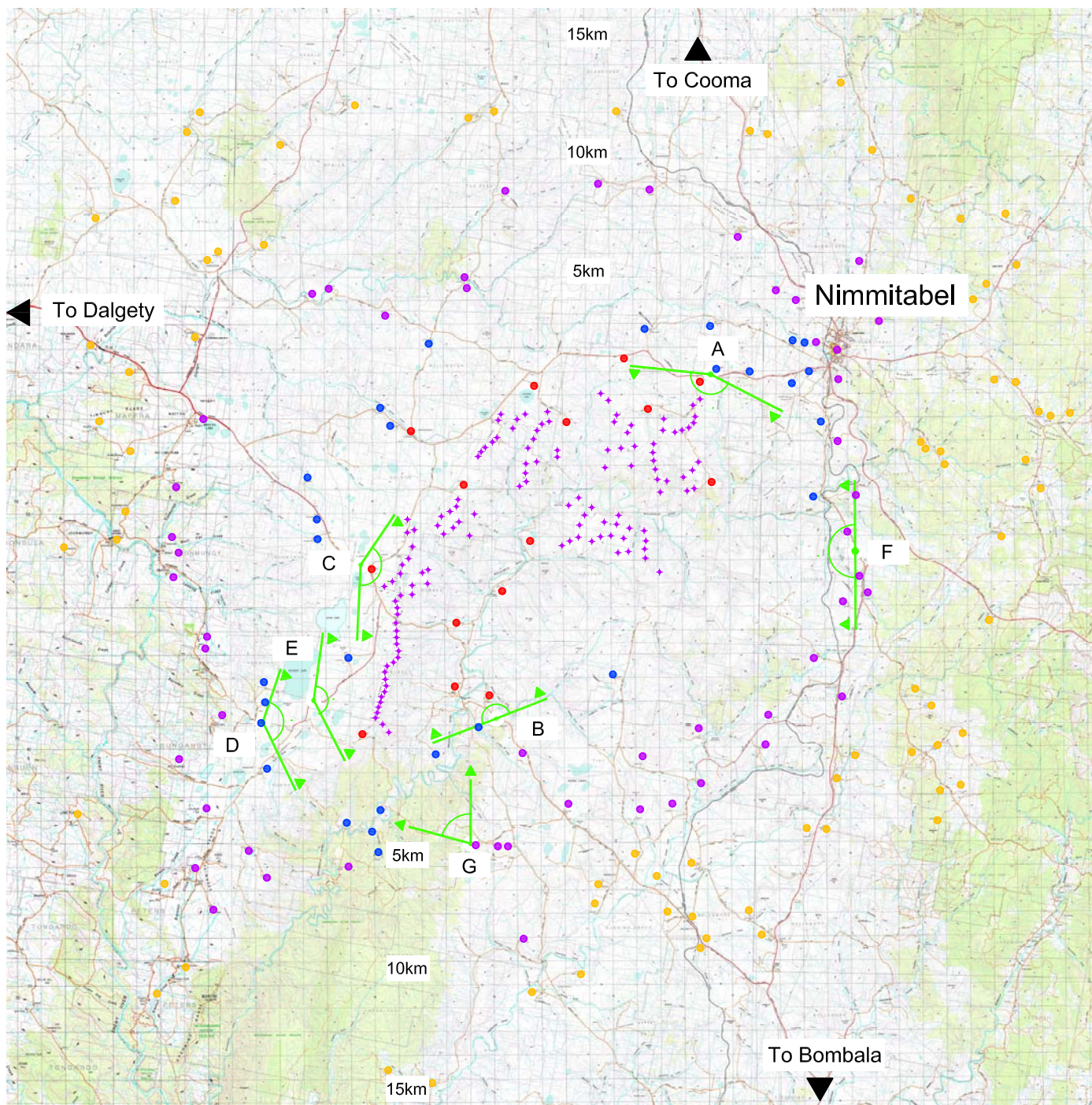
PHOTOMONTAGE LOCATION &  
INDICATIVE DIRECTION

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LOCATION REF#	EASTING	NORTHING
A	698953	5955641
B	690108	5941095
C	684020	5947801
D	680196	5940929
E	682181	5941782
F	705119	5948537
G	689824	5935976

DATUM: Aust Geod 84



## BOCO ROCK WIND FARM - PHOTOMONTAGE LOCATION

Sources: Copyright Department of Lands  
Panorama Avenue Balthurst 2795  
([www.lands.nsw.gov.au](http://www.lands.nsw.gov.au))

Note:  
Locations B and C include photomontage for  
both the '125' and '107' design layouts.

0m 2Km 5Km



# BOCO ROCK WINDFARM

Fig 23 -  
Photomontage Location



Associated Residence

Springfield Road



Photomontage Location A - Springfield Road, existing view west to south west

Indicative extent of visible turbines from photomontage location A

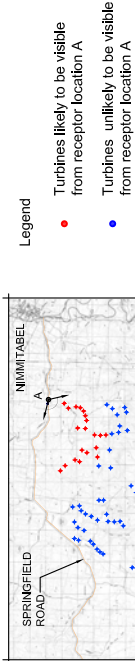
Springfield Road



Photomontage Location A - Springfield Road, proposed view west to south west (125 design layout)

Distance to closest turbine 1.2km

Photo Coordinates: Easting 698953 : Northing 5955641  
(Datum Aust Geod 84)  
Approximate Elevation 1079m  
Number of visible turbines: Approximately 20 of 125



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# BOCO ROCK WINDFARM

Fig 24 - Photomontage Sheet 1

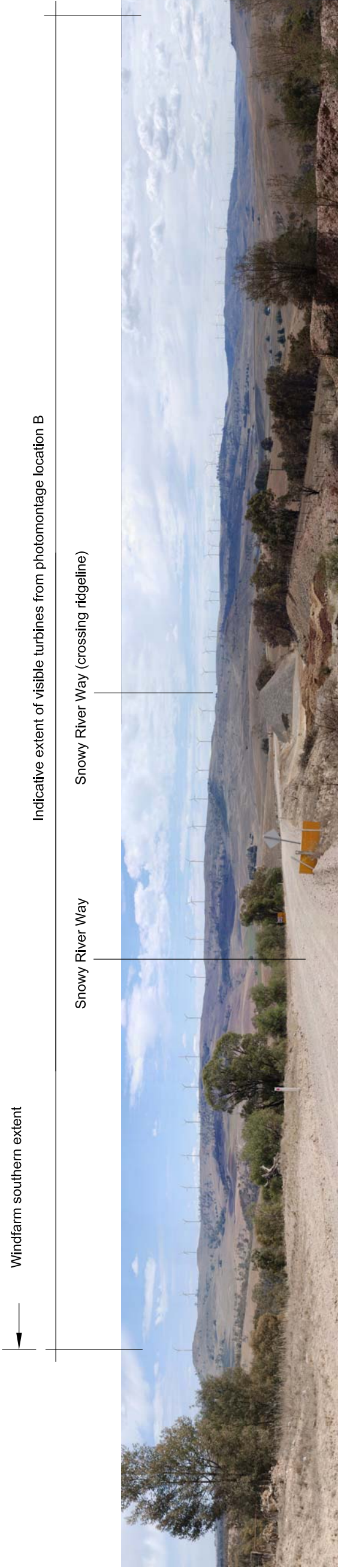


Snowy River Way

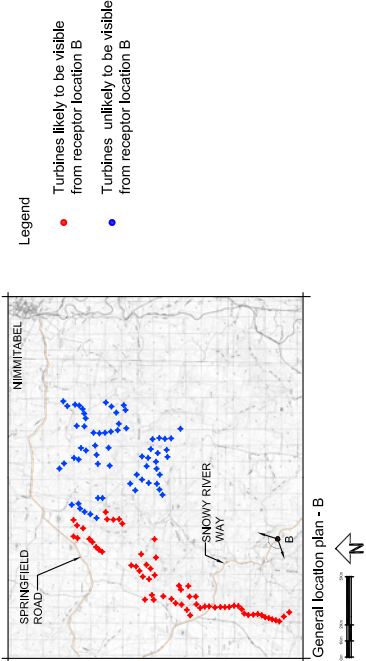
Snowy River Way (crossing ridgeline)



Receptor Location B - Snowy River Way, existing view south west to north east



Receptor Location B - Snowy River Way, proposed view south west to north east (125 design layout)  
Distance to closest turbine 4.6km



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Fig 25 - Photomontage Sheet 2

# BOCO ROCK WINDFARM



Snowy River Way  
(crossing ridgeline)



Photomontage Location C - Snowy River Way, existing view north east to south

Indicative extent of visible turbines from photomontage location C

Windfarm southern extent

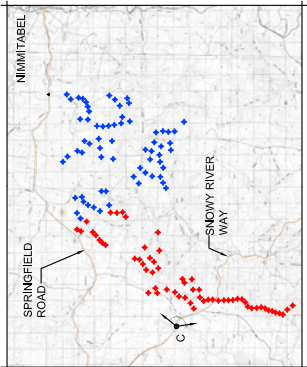
Snowy River Way  
(crossing ridgeline)



Photomontage Location C - Snowy River Way, proposed view north east to south (125 design layout)

Distance to closest turbine 1.5km

Photo Coordinates: Easting 684020 : Northing 5947801  
(Datum Aust Geod 84)  
Approximate Elevation 981m  
Number of visible turbines: Approximately 60 of 125



- Legend
- Turbines likely to be visible from photomontage location C
  - Turbines unlikely to be visible from photomontage location C



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# BOCO ROCK WINDFARM

Fig 26 - Photomontage Sheet 3



Ironmungy Road

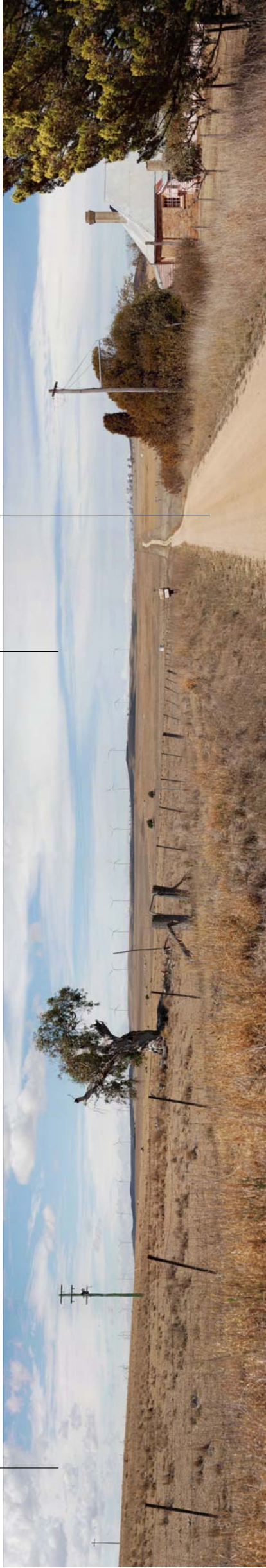


Photomontage Location D - Ironmungy Road, existing view north east to south east

Windfarm southern extent

Indicative extent of visible turbines from photomontage location D

Ironmungy Road



Photomontage Location D - Ironmungy Road, proposed view north east to south east (125 design layout)

Distance to closest turbine 4.6km

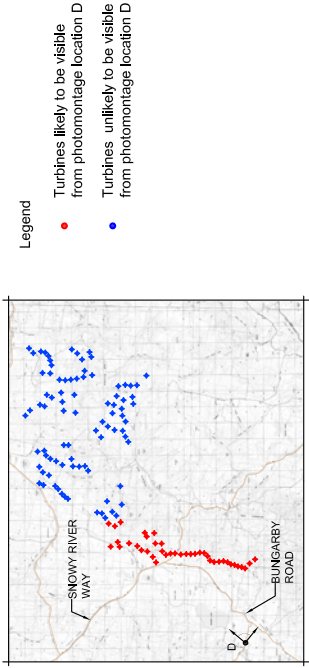


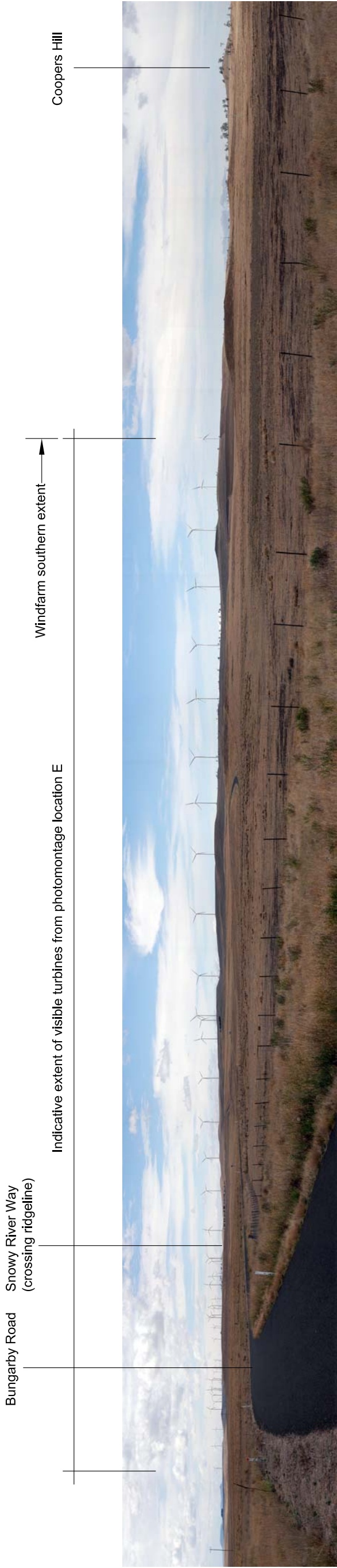
Photo Coordinates: Easting 680196 ; Northing 5940929  
(Datum Aust Geod 84)  
Approximate Elevation 952m  
Number of visible turbines: Approximately 40 of 125







Photomontage Location E - Bungarby Road, existing view east to north east



Photomontage Location E - Bungarby Road, proposed view east to north east (125 design layout)

Distance to closest turbine 2.8km

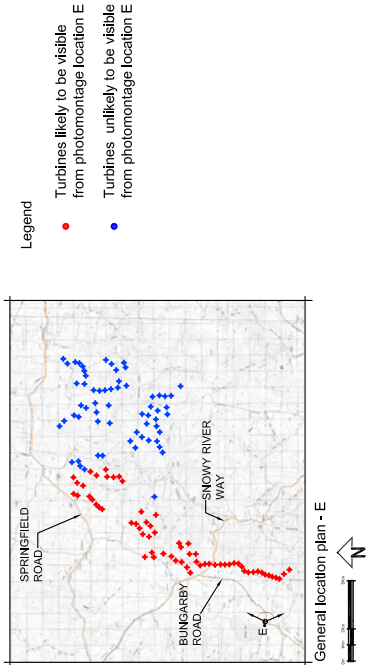


Photo Coordinates: Easting 682181 : Northing 5941782  
(Datum Aust Geod 84)  
Approximate Elevation 967m  
Number of visible turbines: Approximately 65 of 125



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# BOCO ROCK WINDFARM

Fig 28 - Photomontage Sheet 5



Old Bombala Road



Photomontage Location F - Old Bombala Road, existing view north west to south west

Old Bombala Road

Indicative extent of visible turbines from photomontage location F



Photomontage Location F - Old Bombala Road, proposed view north west to south west (125 design layout)  
Distance to closest turbine 7.4km

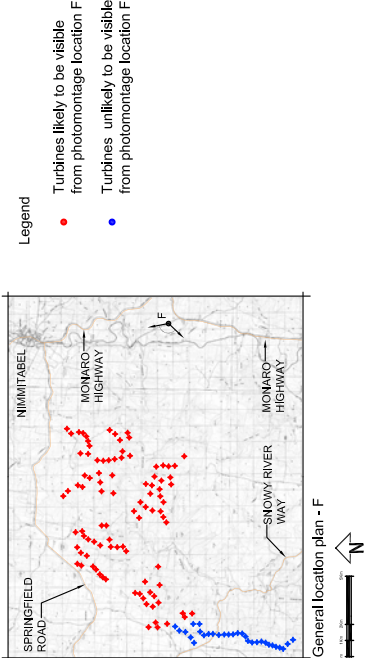


Photo Coordinates: Easting 705119 : Northing 5948537  
(Datum Aust Geod 84)  
Approximate Elevation 1041m  
Number of visible turbines: Approximately 95 of 125



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# BOCO ROCK WINDFARM

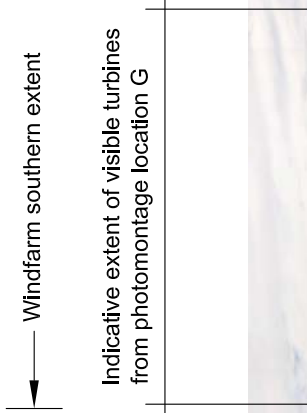
Fig 29 - Photomontage Sheet 6



Coopers Hill



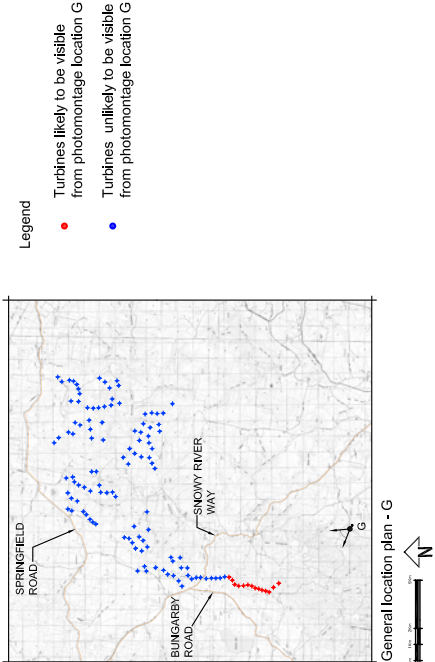
Photomontage Location G - Kangaroo Camp, existing view north west to north



Coopers Hill



Photomontage Location G - Kangaroo Camp, proposed view north west to north  
(125 wind turbine layout) Distance to closest turbine 5.7km



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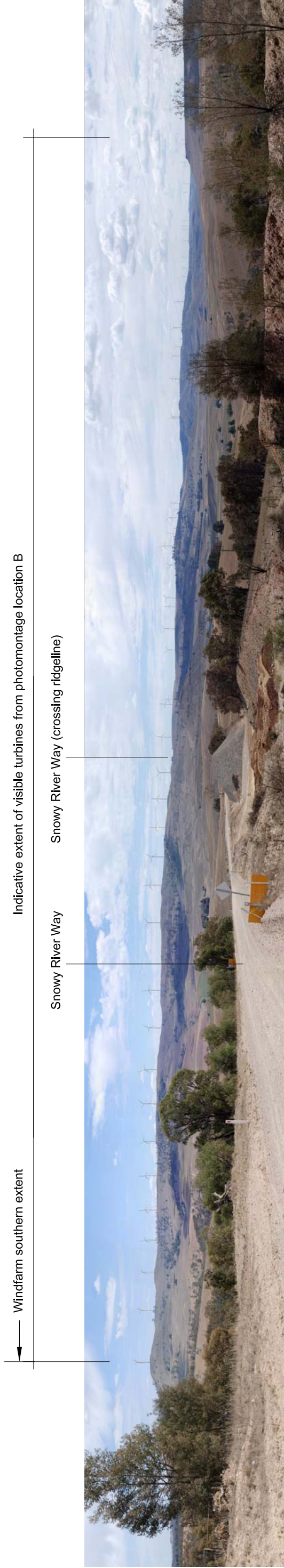
Fig 30 - Photomontage Sheet 7

# BOCO ROCK WINDFARM





Photomontage Location B - Snowy River Way, existing view south west to north east



Photomontage Location B - Snowy River Way, proposed view south west to north east (107 design layout).  
Distance to closest turbine 4.6km

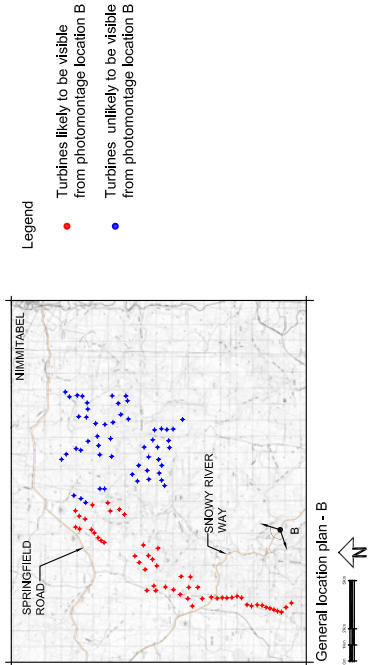


Photo Coordinates: Easting 690108 : Northing 5941095  
(Datum Aust Geod 84)  
Approximate Elevation 837m  
Number of visible turbines: Approximately 54 of 107



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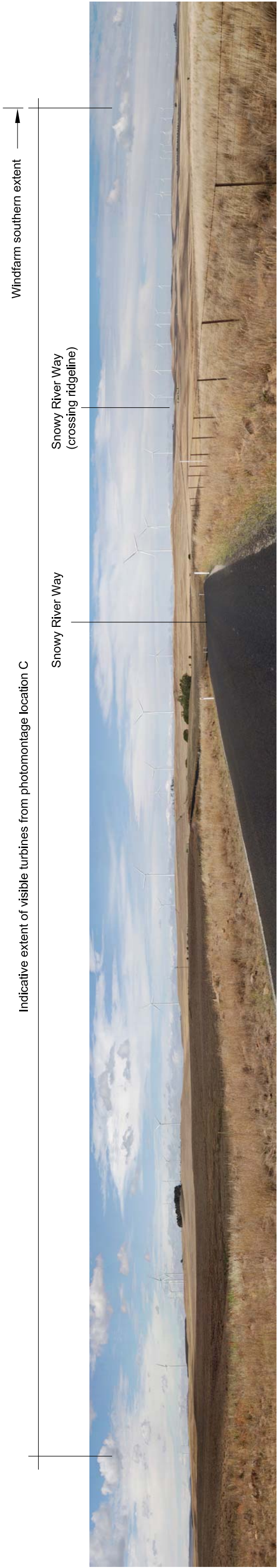




Snowy River Way  
(crossing ridge)

Snowy River Way  
(crossing ridge)

Photomontage Location C - Snowy River Way, existing view north east to south



Indicative extent of visible turbines from photomontage location C

Snowy River Way  
(crossing ridge)

Snowy River Way  
(crossing ridge)

Windfarm southern extent

Photomontage Location C - Snowy River Way, proposed view north east to south (107 design layout)

Distance to closest turbine 1.5km

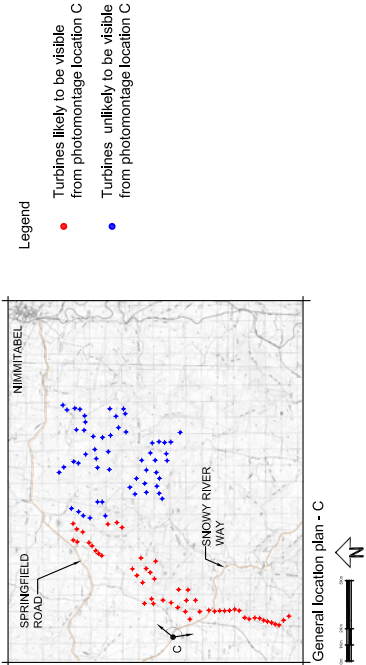


Photo Coordinates: Easting 684020 : Northing 5947801  
(Datum Aust Geod 84)  
Approximate Elevation 981m  
Number of visible turbines: Approximately 52 of 107



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# BOCO ROCK WINDFARM

Fig 32 - Photomontage Sheet 9