

(Image source GBD 2012)



Mid distance views toward proposed Rye Park wind turbines (north cluster)

Photo Location V22- View east to south east from Rye Park - Frogmore Road (Approximate distance to closest wind turbine 2.3 km)  
Photo coordinate Easting:674522 Northing:6184073

(Image source GBD 2012)



Short to mid distance views toward proposed Rye Park wind turbines (north cluster)

Rye Park - Frogmore Road

Photo Location V23- View south from Rye Park - Frogmore Road (Approximate distance to closest wind turbine 2.6 km)  
Photo coordinate Easting:675541 Northing:6181812

(Image source GBD 2012)



Short to mid distance views toward proposed Rye Park wind turbines (north cluster)

Photo Location V24- View east to south east from Rugby - Rye Park Road (Approximate distance to closest wind turbine 0.91 km)  
Photo coordinate Easting:676006 Northing:6180979

### Notes

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

Figure 14  
Photo Sheet 8

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# RYE PARK WIND FARM

(Image source GBD 2012)



Short distance views toward proposed Rye Park wind turbines (north cluster) west of Rye Park - Rugby Road partially obscured by topography.

Rye Park - Rugby Road

Photo Location V25- View east to south east from Rye Park - Rugby Road (Approximate distance to closest wind turbine 1.4 km)  
Photo coordinate Easting:676520 Northing:6181594

**Notes**

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

(Image source GBD 2012)



Short distance views toward proposed Rye Park wind turbines (north cluster)

Rye Park - Rugby Road

Turbine location

Photo Location V26- View south to west from Rye Park - Rugby Road (Approximate distance to closest wind turbine 0.61 km)  
Photo coordinate Easting:677944 Northing:6183569

(Image source GBD 2012)



Short distance views toward proposed Rye Park wind turbines (north cluster)

Rye Park - Rugby Road

Photo Location V27- View south to west from Rye Park - Rugby Road (Approximate distance to closest wind turbine 1.1 km)  
Photo coordinate N:679594 E:6183775

**Figure 15**  
**Photo Sheet 9**

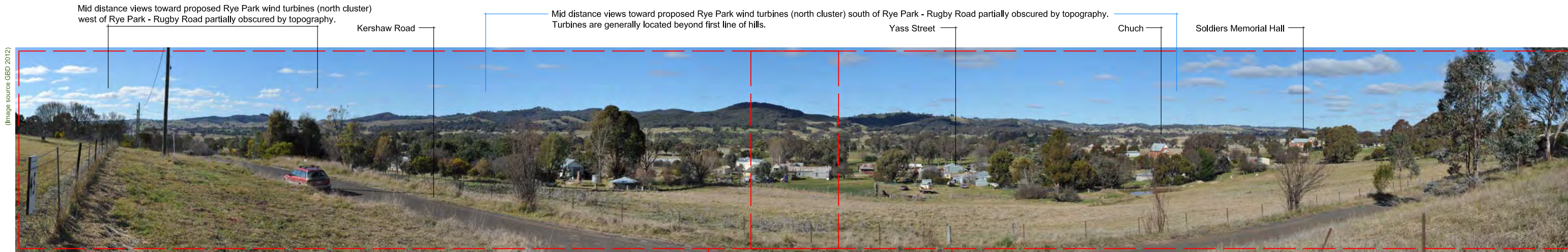
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Mid distance views toward proposed Rye Park wind turbines (north cluster) west of Rye Park - Rugby Road partially obscured by topography.

Kershaw Road

Mid distance views toward proposed Rye Park wind turbines (north cluster) south of Rye Park - Rugby Road partially obscured by topography. Turbines are generally located beyond first line of hills.

Yass Street

Chuch

Soldiers Memorial Hall

Photo Location V28- View north to south from Kershaw Street, Rye Park (Approximate distance to closest wind turbine 3.7 km)  
Photo coordinate Northing:674906 Easting:6178797

Refer Detail A below

Refer Detail B below



Photo Location V28 - Detail A



Photo Location V28 - Detail B

**Notes**

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

**Figure 16**  
**Photo Sheet 10**

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**RYE PARK WIND FARM**

Short to long distance views toward proposed Rye Park wind turbines (north and middle cluster)



Photo Location V29- View north to south east from Rye Park - Dalton Road (Approximate distance to closest wind turbine 3.5 km)  
Photo coordinate Easting:674941 Northing:6177188

Mid to long distance views toward proposed Rye Park wind turbines (north and middle cluster) beyond first line of hills



Photo Location V30- View east to south east from Rye Park - Dalton Road (Approximate distance to closest wind turbine 3.1 km)  
Photo coordinate Easting:677146 Northing:6174399

Long distance views toward proposed Rye Park wind turbines (north and middle cluster)

Wargeila Road



Photo Location V31- View south to west from Rye Park - Rugby Road (Approximate distance to closest wind turbine 7 km)  
Photo coordinate Easting:674150 Northing:6169341

### Notes

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

Figure 17  
Photo Sheet 11

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# RYE PARK WIND FARM



Photo Location V32- View north to east from Blakney Creek Road (Approximate distance to closest wind turbine 2.7 km)  
 Photo coordinate Easting:678863 Northing:6168748



Photo Location V33- View east to south from Blakney Creek Road (Approximate distance to closest wind turbine 2.7 km)  
 Photo coordinate Easting:678863 Northing:6168748



Photo Location V34- View north to east from Rye Park - Dalton Road (Approximate distance to closest wind turbine 1.8 km)  
 Photo coordinate Easting:679482 Northing:6162712

**Notes**

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

**Figure 18**  
**Photo Sheet 12**

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# RYE PARK WIND FARM



Photo Location V35- View north east to east from Rye Park - Dalton Road (Approximate distance to closest wind turbine 1.7 km)  
 Photo coordinate Easting:680725 Northing:6161382

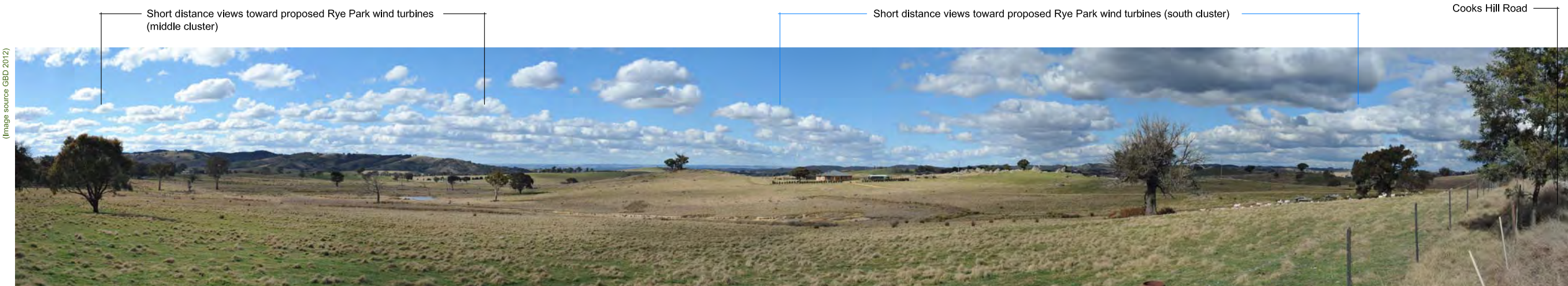


Photo Location V36- View north to east from Cooks Hill Road (Approximate distance to closest wind turbine 2.8 km)  
 Photo coordinate Easting:680395 Northing:6159432



Photo Location V37- View north to east from Rye Park - Dalton Road (Approximate distance to closest wind turbine 2.5 km)  
 Photo coordinate Easting:683768 Northing:6159421

**Notes**

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

**Figure 19**  
**Photo Sheet 13**

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**RYE PARK WIND FARM**

(Image source GBD 2012)

Long distance views toward proposed Rye Park wind turbines (middle cluster)

Long distance views toward proposed Rye Park wind turbines (south cluster)



Photo Location V38- View north to east from Cooks Hill Road (Approximate distance to closest wind turbine 2.7 km)  
Photo coordinate Easting:678863 Northing:6168748

(Image source GBD 2012)

Mid distance views toward proposed Rye Park wind turbines (south cluster) largely screened by topography



Photo Location V39- View north to east from Blakney Creek South Road (Approximate distance to closest wind turbine 2.9 km)  
Photo coordinate Easting:682657 Northing:6156802

(Image source GBD 2012)

Long distance views toward proposed Rye Park wind turbines (south cluster) largely screened by topography and wooded hillside and ridgeline



Photo Location V40- View north to east from Cooks Hill Road (Approximate distance to closest wind turbine 4.4 km)  
Photo coordinate Easting:678995 Northing:6154716

### Notes

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

Figure 20  
Photo Sheet 14

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# RYE PARK WIND FARM

Views toward the proposed Rye Park wind turbines screened by topography

Cooks Hill Road

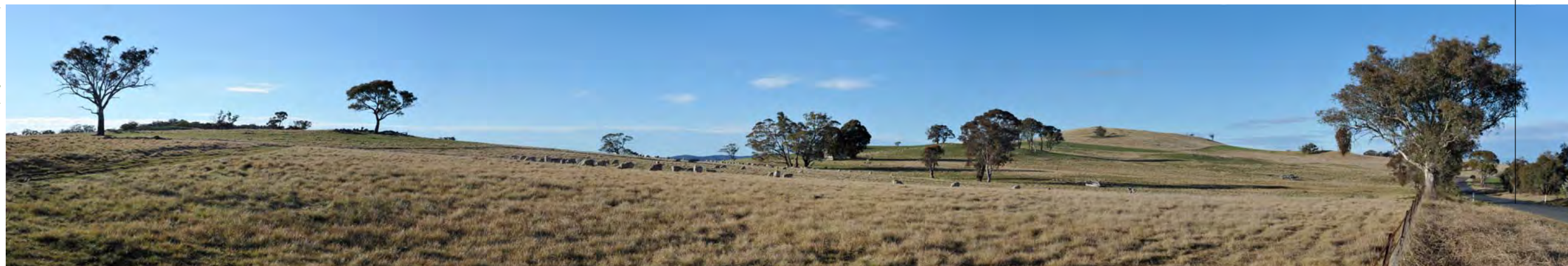


Photo Location V41- View east to south from Cooks Hill Road (Approximate distance to closest wind turbine 3.8 km)  
Photo coordinate Easting:679118 Northing:6153227

### Notes

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

Views toward the proposed Rye Park wind turbines screened by topography

Existing 330 kV transmission line

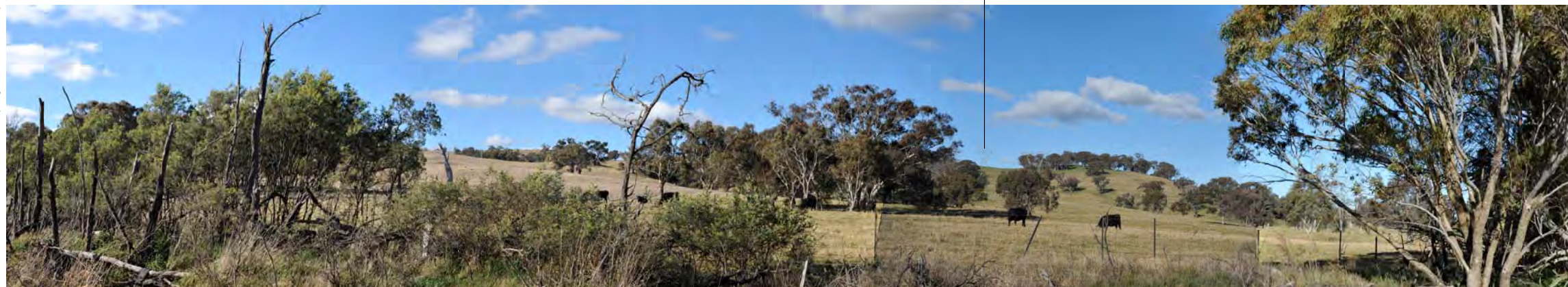


Photo Location V42- View east to south from Cooks Hill Road (Approximate distance to closest wind turbine 3.8 km)  
Photo coordinate Easting:679118 Northing:6153227

Views toward the proposed Rye Park wind turbines screened by topography

Existing 330 kV transmission line

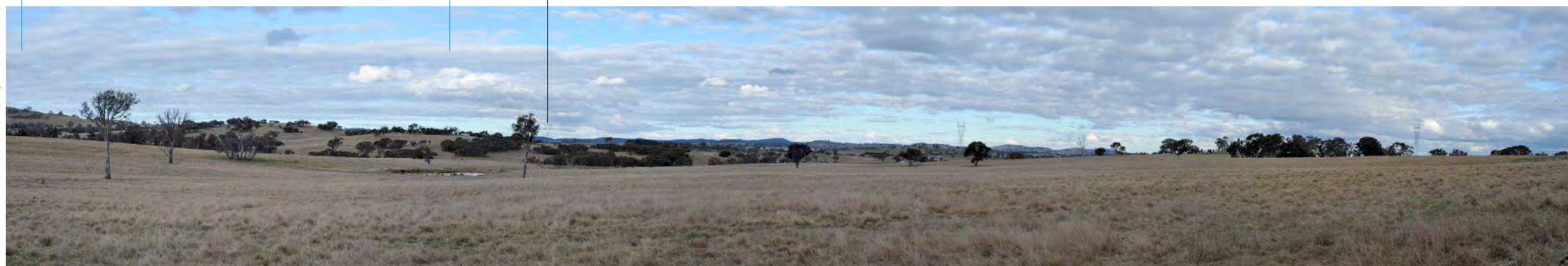


Photo Location V43- View east to south from Wargeilla Road (Approximate distance to closest wind turbine 9.4 km)  
Photo coordinate Easting:673501 Northing:6150331

Figure 21  
Photo Sheet 15

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# RYE PARK WIND FARM



Distant views toward the proposed Rye Park wind turbines screened by topography



Photo Location V44- View north to east from Wargeila Road (Approximate distance to closest wind turbine 10.1 km)  
Photo coordinate Easting:673248 Northing:6148011

Views toward the proposed Rye Park wind turbines screened by topography

Existing 330 kV transmission line Main Southern line Cooks Hill Road



Photo Location V45- View north to north east from Cooks Hill Road (Approximate distance to closest wind turbine 7.0 km)  
Photo coordinate Easting:677560 Northing:6148645

Views toward the proposed Rye Park wind turbines screened by topography

Cooks Hill Road

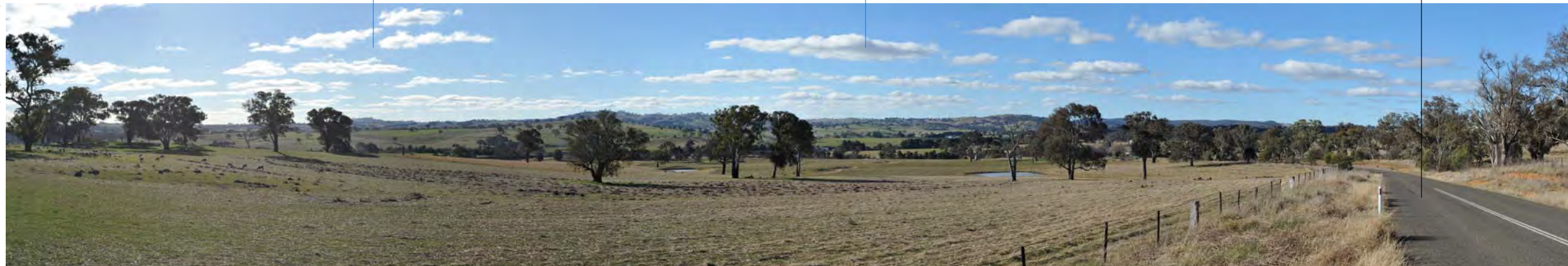


Photo Location V46- View north to north east from Cooks Hill Road (Approximate distance to closest wind turbine 8.2 km)  
Photo coordinate Easting:676301 Northing:6145925

### Notes

Individual photographs taken with a Nikon D700 camera with a 50 mm 1:1.4D prime lens. Composite digital stitching results in a panorama with an approximate view angle between 110° and 130°.

Individual panorama photo coordinate map datum is in GDA94 to ± 5 m accuracy.

Extent of potential wind turbine visibility and illustrated on each panorama photograph is indicative only.

Figure 22  
Photo Sheet 16

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# RYE PARK WIND FARM

## Landscape character areas

## Section 6

### 6.1 Landscape character areas

A fundamental part of this LVIA is to understand and describe the nature and sensitivity of different components of the landscape within the project 10 km viewshed, and to assess the landscape character in a clear and consistent process. For the purpose of this LVIA, landscape character is defined as *'the distinct and recognisable pattern of elements that occur consistently in a particular type of landscape'* (The Countryside Agency and Scottish Natural Heritage 2002).

This LVIA has identified five Landscape Character Areas (LCA's), which occur within the project 10 km viewshed. The five LCA's represent areas that are relatively consistent and recognisable in terms of their key visual elements and physical attributes; which include a combination of topography/landform, vegetation/landcover, land use and built structures (including settlements and local road corridors).

The five LCA's have been identified through a desk top assessment and described during the landscape assessment fieldwork carried out for the LVIA. The LCA should not be considered as discrete areas, and characteristics within one LCA may occur within adjoining or surrounding LCA's.

For the purpose of this LVIA the five LCA are:

- LCA 1 – Undulating grassland;
- LCA 2 – Drainage lines;
- LCA 3 – Hills and ridgelines;
- LCA 4 – Timbered areas; and
- LCA 5 – Rural dwellings.

### 6.2 Landscape sensitivity assessment

The British Landscape Institute describes landscape sensitivity as *'the degree to which a particular LCA can accommodate change arising from a particular development, without detrimental effects on its character'*.

The assessment of landscape sensitivity is based upon an evaluation of the physical attributes identified within each LCA, both singularly and as a combination that gives rise to the landscape's

overall robustness and the extent to which it could accommodate the wind farm development. The criteria used to determine landscape sensitivity are outlined in **Table 6** and based on current good practice employed in the assessment of wind farm developments. This LVIA draws on the Land Use Consultants report on landscape sensitivity for wind farm developments on the Shetland Islands (March 2009) as well as the Western Australian Planning Commission manual for Visual Landscape Planning (2007). Landscape sensitivity is a relative term, and the intrinsic landscape values of the surrounding landscape could be considered of a higher or lower sensitivity than other areas in the Southern Tablelands region.

Whilst the assessment of landscape sensitivity is largely based on a systematic description and analysis of landscape characteristics, this LVIA acknowledges that some individuals and other members of the local community would place higher values on the local landscape. These values could transcend preferences (likes and dislikes) and include personal, cultural as well as other parameters.

**Table 4 – Landscape Sensitivity Criteria**

<b>Landscape Sensitivity Assessment Criteria</b>			
<b>Characteristic</b>	<b>Aspects indicating lower sensitivity to the wind farm development</b>	<b>↔</b>	<b>Aspects indicating higher sensitivity to the wind farm development</b>
Landform and scale: patterns, complexity and consistency	<ul style="list-style-type: none"> <li>• Large scale landform</li> <li>• Simple</li> <li>• Featureless</li> <li>• Absence of strong topographical variety</li> </ul>	<b>↔</b>	<ul style="list-style-type: none"> <li>• Small scale landform</li> <li>• Distinctive and complex</li> <li>• Human scale indicators</li> <li>• Presence of strong topographical variety</li> </ul>
Landcover: patterns, complexity and consistency	<ul style="list-style-type: none"> <li>• Simple</li> <li>• Predictable</li> <li>• Smooth, regular and uniform</li> </ul>	<b>↔</b>	<ul style="list-style-type: none"> <li>• Complex</li> <li>• Unpredictable</li> <li>• Rugged and irregular</li> </ul>
Settlement and human influence	<ul style="list-style-type: none"> <li>• Concentrated settlement pattern</li> <li>• Presence of contemporary structures (e.g. utility, infrastructure or industrial elements)</li> </ul>	<b>↔</b>	<ul style="list-style-type: none"> <li>• Dispersed settlement pattern</li> <li>• Absence of modern development, presence of small scale, historic or vernacular settlement</li> </ul>

Landscape Sensitivity Assessment Criteria		
Characteristic	Aspects indicating lower sensitivity to the wind farm development	↔ Aspects indicating higher sensitivity to the wind farm development
Movement	<ul style="list-style-type: none"> <li>Prominent movement, busy</li> </ul>	<ul style="list-style-type: none"> <li>No evident movement, still</li> </ul>
Rarity	<ul style="list-style-type: none"> <li>Common or widely distributed example of landscape character area within a regional context</li> </ul>	<ul style="list-style-type: none"> <li>Unique or limited example of landscape character area within a regional context</li> </ul>
Intervisibility with adjacent landscapes	<ul style="list-style-type: none"> <li>Limited views into or out of landscape</li> <li>Neighbouring landscapes of low sensitivity</li> <li>Weak connections, self contained area and views</li> <li>Simple large scale backdrops</li> </ul>	<ul style="list-style-type: none"> <li>Prospects into and out from high ground or open landscape</li> <li>Neighbouring landscapes of high sensitivity</li> <li>Contributes to wider landscape</li> <li>Complex or distinctive backdrops</li> </ul>

The landscape sensitivity assessment criteria set out in **Table 4** have been evaluated for each of the five LCA's by applying a professionally determined judgement on a sliding scale between 1 and 5.

A scale of 1 indicates a landscape characteristic with a lower sensitivity to the wind farm development (and would be more likely to accommodate the wind farm development). A scale of 5 indicates a landscape characteristic with a high level of sensitivity to the wind farm development (and less likely to accommodate the wind farm development).

The scale of sensitivity for each LCA is outlined in **Tables 5 to 9** and is set out against each characteristic identified in **Table 4**.

The overall landscape sensitivity for each LCA is a summation of the scale for each characteristic identified in **Tables 5 to 9**. The overall scale is expressed as a total out of 30 (i.e. 6 characteristics for each LCA with a potential top scale of 5). Each characteristic is assessed separately and the criteria set out in **Table 6** are not ranked in equal significance. The overall landscape sensitivity for each of the five LCA has been determined as either:

**High (Scale of 24 to 30)** – key characteristics of the LCA will be impacted by the proposed project, and will result in major and visually dominant alterations to perceived characteristics of the LCA which

may not be fully mitigated by existing landscape elements and features. The degree to which the landscape may accommodate the proposed project development will result in a number of perceived uncharacteristic and significant changes.

**Medium to High (Scale of 16 to 23)** – recognisable characteristics of the LCA will be altered by the proposed project, and result in the introduction of visually prominent elements that will alter the perceived characteristics of the LCA but may be partially mitigated by existing landscape elements and features within the LCA. The main characteristics of the LCA, patterns and combinations of landform and landcover will still be evident.

**Medium (Scale 11 to 15)** – distinguishable characteristics of the LCA may be altered by the proposed project, although the LCA may have the capability to absorb some change. The degree to which the LCA may accommodate the proposed project would potentially result in the introduction of prominent elements to the LCA, but may be accommodated to some degree.

**Low Rating (Scale of 6 to 10)** – the majority of the LCA characteristics are generally robust, and would be less affected by the proposed project. The degree to which the landscape may accommodate the wind farm would not significantly alter existing landscape character.

**Very Low or Negligible Rating (Less than 6)** the characteristics of the LCA will not be impacted or visibly altered by the proposed project.

### 6.3 Analysis of landscape sensitivity

The following section of this LVIA provides an analysis of landscape sensitivity within the viewshed of the wind farm development and considers each of the five LCA's.

6.3.1 LCA 1 Undulating grassland



**Plate 1** – Typical view across undulating grassland landscape

**Table 5** – LCA 1 - Undulating grassland -Landscape Sensitivity

	Lower Sensitivity		↔	Higher Sensitivity	
	Low	Low to Med	Medium	Med to High	High
Rating	1	2	3	4	5
Landform and Scale		2			
	The undulating grassland is a medium to large scale open landscape with a gently undulating landform. The structure of the landform is simple containing few distinct features and has a general absence of any strong topographical elements.				
Landcover		2			
	Landcover is predominantly simple and predictable within the context of widespread pasture areas across the regional area of the Southern Tablelands.  The overall landscape pattern created by the grass pasture is smooth, regular and uniform. Areas of cultural planting surround many rural dwellings in the form of evergreen windbreaks.				
Settlement and human influence			3		
	A dispersed settlement pattern occurs across the landscape and comprises rural farm homesteads including documented local historical structures.  There is a general absence of modern development throughout this landscape, excluding agricultural structures and local roads and access tracks.				
Movement			3		
	Movement is generally restricted to occasional passing traffic, livestock as well as agricultural machinery.				
Rarity		2			
	Undulating grassland is generally well represented and a common feature across the regional area of the Southern Tablelands.				
Intervisibility			3		
	Undulating grassland areas appear as a simple backdrop in views from surrounding elevated areas. Undulating landform can retain and constrict views within the landscape, but generally contributes to the wider landscape.				
Overall Sensitivity Rating	Medium (Score 15 out of 30)				

6.3.2 LCA 2 Drainage Lines



Plate 2 – Typical view across drainage lines landscape

Table 6 – LCA 2 - Drainage Lines - Landscape Sensitivity

	Lower Sensitivity		↔	Higher Sensitivity	
	Low	Low to Med	Medium	Med to High	High
Rating	1	2	3	4	5
Landform and Scale		2			
	Drainage line areas are generally contained by the gently sloping landform resulting in a small to moderate scale landform. The landform is simple containing few distinct features and has an absence of any strong topographical elements.				
Landcover		2			
	Landcover is predominantly simple and predictable within the context of widespread drainage areas across the broader regional area of the Southern Tablelands. The overall landscape pattern created by grass pasture within this landscape is smooth, regular and uniform, although mosaics of timbered stands on adjoining slopes and hillsides create some diversity and contrast in pattern.				
Settlement and human influence			3		
	There is a general absence of settlement within this landscape with a small and dispersed number of agricultural structures (some abandoned), minor access tracks and fences occurring throughout. Some modifications to landscape have been carried out to accommodate road access and the former railway line.				
Movement			3		
	A lack of any significant movement gives this landscape an overall still character.				
Rarity		2			
	Drainage lines and their surrounding landscape are generally well represented and a common feature across the broader regional area of the Southern Tablelands.				
Intervisibility			3		
	Intervisibility is limited as views from within this landscape are often contained by sloping landform rising above drainage lines. Views along drainage lines, as well as views from areas above and across drainage lines provide links with adjoining landscape areas.				
Overall Sensitivity Rating	Medium (Score 15 out of 30)				

6.3.3 LCA 3 Hills and ridgelines



**Plate 3** – Typical views along hills and ridgeline landscape

**Table 7** – LCA 3 - Hills and ridgelines - Landscape Sensitivity

	Lower Sensitivity		↔	Higher Sensitivity	
	Low	Low to Med	Medium	Med to High	High
Rating	1	2	3	4	5
Landform and Scale		2			
	Hill and ridgeline areas are represented by a generally open and large scale landform with distant views available from elevated areas within this landscape. The landform is simple containing few distinct features and has a general absence of any strong topographical elements.				
Landcover		2			
	Landcover is predominantly simple and predictable within the context of similar areas across the Southern Tablelands. The overall landscape pattern created by grass pasture within this landscape is smooth, regular and uniform, although mosaics of timbered areas on surrounding slopes and cultural planting surrounding dwellings create some diversity and contrast in pattern.				
Settlement and human influence			3		
	Settlement is occasional and dispersed within this landscape and does not generally occur along the top of ridgelines or on elevated and exposed slopes. The main influences of human activity are the effects of agricultural improvement within the landscape.				
Movement				3	
	Movement is generally limited to local roads and access tracks.				
Rarity		2			
	Simple slopes and ridgelines are generally well represented and a common feature across the broader regional area of the Southern Tablelands.				
Intervisibility			3		
	Intervisibility is limited as views from within this landscape are often contained by undulating or sloping landform rising to ridgelines, however, potential distant views do occur from elevated landform to provide links to adjoining landscape areas.				
Overall Sensitivity Rating	Medium to high (Score 16 out of 30)				



6.3.4 LCA 4 Timbered Areas



Plate 4 – Typical views across timbered areas

Table 8 – LCA 4 - Timbered Areas- Landscape Sensitivity

	Lower Sensitivity		↔	Higher Sensitivity	
	Low	Low to Med	Medium	Med to High	High
Rating	1	2	3	4	5
Landform and Scale		2			
	Timbered areas occur across a range of landform types that are generally defined by gently sloping or undulating landform resulting in a moderate scale landform. The landform is simple containing few distinct features and has an absence of any strong topographical elements.				
Landcover		2			
	Landcover is predominantly simple and predictable within the context of similar timbered areas across the Southern Tablelands. The overall landscape pattern created by timbered areas creates diversity and contrast to the smooth, regular and uniform grass pasture and cultivated areas within this landscape. The darker coloured foliage of timbered areas contrast against the surrounding backdrop of lighter toned pasture and cultivated areas.				
Settlement and human influence			3		
	Settlement is occasional and dispersed within timbered areas with the majority of dwellings visually screened from surrounding landscape areas. The main influences of human activity are the effects of agricultural improvement within the landscape.				
Movement				4	
	Movement is generally limited to local roads and access tracks.				
Rarity		2			
	Timbered areas are reasonably well represented and an established feature across broader regional areas of the New South Wales Southern Tablelands.				
Intervisibility			3		
	The level of intervisibility between this landscape and adjoining areas is generally determined by the location and extent of timbered area relative to view locations, but on the whole is limited as views from within this landscape are constrained by vegetation, combined with sloping landform. Views from scattered or lightly timbered areas provide links to adjoining landscape areas.				
Overall Sensitivity Rating	Medium to high (Score 16 out of 30)				

6.3.5 LCA 5 Settlement



Plate 5 – Typical view across settlement area

Table 9 – LCA 5 – Settlement - Landscape Sensitivity

	Lower Sensitivity		↔	Higher Sensitivity	
	Low	Low to Med	Medium	Med to High	High
Rating	1	2	3	4	5
Landform and Scale				4	
	Rural settlement is generally surrounded and contained by gently sloping and low undulating landform resulting in an overall small scale rural urban environment.				
Landcover		2			
	The overall landscape pattern is defined by human scale indicators including houses, shops and roads together with a variety of urban structures which create some diversity and contrast in pattern. There are generally no elements that result in the presence of strong topographical variety.				
Settlement and human influence			3		
	Dwellings are dispersed beyond village settlement areas (such as Rye Park) and are generally associated with individual farms and rural structures.				
Movement				4	
	Movement is generally limited to local roads and access tracks.				
Rarity		2			
	Small scale urban settlements are dispersed across the landscape, as well as the broader regional area of the Southern Tablelands.				
Intervisibility			3		
	Intervisibility is limited where views are partially contained by buildings and structures, although views from elevated areas of the settlement extend beyond and across adjoining landscape areas.				
Overall Sensitivity Rating	Medium to high (Score 18 out of 30)				

## 6.4 Landscape values (local and regional)

### 6.4.1 What are landscape values?

For the purpose of this LVIA landscape values have been considered as a set of professional judgements on the importance to society of the local and regional landscape surrounding the proposed wind farm development. Societal landscape values may extend across a range of specific interests such as historic, ecological or cultural issues. The purpose of identifying local and regional landscape values is to consider what, if any, losses to landscape features or characteristics may result from the construction and operation of the wind farm development, and how this may impact upon local and regional landscape values.

### 6.4.2 Historical landscape values

Both the local and regional landscape has a strong association with early European settlement and agricultural production and specifically the establishment of pastoral properties. The European historical and cultural association with settlement and agrarian transition is set against a backdrop of indigenous populations being relocated and ultimately removed from the landscape. The removal of the indigenous population resulted in long held landscape cultural values and practices being replaced by those employed by early settlers in the mid to early 19<sup>th</sup> century. Landscape change resulting from the abrupt replacement of landscape values (from subsistence to industrial agriculture) has wrought significant alteration to the landscape; however the existing landscape pattern is one that most people at the local and regional scale would recognise as typical and representative of a rural agricultural landscape. A detailed consideration and assessment of the relationship between landscape and indigenous populations is described in the Aboriginal Cultural Heritage Assessment Report within the EA.

### 6.4.3 Existing landscape values

Whilst the landscape is likely to hold more significant value at a local level, for those who both work and reside within the landscape surrounding the proposed wind farm development, there are no specific references to designations or policies which indicate or recognise a 'high value' landscape. There are no 'iconic' landscape elements (including constructed or natural features) that occur within

the local or regional landscape which have a broader public value or that are recognised at a national level. The majority of land within and surrounding the wind farm development is privately owned and, at a local and regional scale, opportunities for the broader public to access and explore the landscape and obtain distant and panoramic views are largely limited to existing rights of way such as road corridors. The proposed wind farm development is not considered to have the potential to have a significant impact on existing landscape values.

## 6.5 Summary

In terms of overall landscape sensitivity and value, this LVIA has determined that the landscape within the viewshed of the proposed Rye Park wind farm has a medium/medium to high sensitivity to accommodate change, and represents a landscape that is reasonably typical of landscape types found in surrounding areas of the Southern Tablelands.

As a landscape with an overall medium/medium to high sensitivity to accommodate change, some characteristics are likely to be altered by the wind farm; however, the landscape will have some capability to accommodate change. This capability is largely derived from the presence of predominantly large scale and open landscape across portions of the wind farm, together with the relatively low settlement density within the Rye Park 10km viewshed.

This LVIA has determined that the wind farm would not be an unacceptable development within the Rye Park wind farm viewshed, which in a broader context also contains built elements such as roads, agricultural industry, aircraft landing strips, communication towers, powerlines as well as operating and approved wind farms within the vicinity of the Rye Park wind farm site.

Despite being 'naturalistic' in appearance large portions of the Southern Tablelands landscape have been heavily modified by agricultural improvement for pasture and arable production post European settlement. Irrespective of the extent and nature of modifications to the landscape, it is not correct to assume that the landscape surrounding the wind farm should be any less valued as a result of modification. Physical change in the appearance of the landscape is an ongoing and constant process from both human and environmental influences and can result in both positive and negative effects.

## Viewshed, zone of visual influence and visibility

## Section 7

### 7.1 Introduction

A key component of this LVIA is defined by the description, assessment and determination of the viewshed, zone of visual influence and visibility associated with the wind farm. It is a combination of these issues that sets out the framework for determining the significance and magnitude of potential visual impact of the wind farm on view locations within the landscape.

In order to clarify and explain this component of this LVIA, the relationship between viewshed, zone of visual influence and visibility is outlined and defined in **Table 10**.

**Table 10** – Definitions

	Definition	Relationship
<b>Viewshed</b>	An area of land surrounding and beyond the project area which may be potentially affected by the wind farm.	Identifies the majority of this LVIA study area that incorporates view locations that may be subject to a degree of visual impact.
<b>Zone of Visual Influence (ZVI)</b>	A theoretical area of landscape from which the wind farm structures may be visible.	Determines areas within a viewshed from which the wind turbines may be visible.
<b>Visibility</b>	A relative determination at which a wind turbine or cluster of wind turbines can be clearly discerned and described.	Describes the likely number and relative scale of wind turbines visible from a view location.

An overview of viewshed, zone of visual influence and visibility is discussed in the following sections.

### 7.2 Viewshed

For the purpose of this LVIA viewshed is defined as the area of land surrounding and beyond the project area which could be potentially affected by the wind farm. In essence, the viewshed defines this LVIA study area. The viewshed for the project has been divided into a series of concentric bands (at 2 km, 5 km and 10 km distance offsets) extending across the landscape from the wind turbines. The viewshed extent can vary between wind farm projects, and be influenced or informed by a number of criteria including the height of the wind turbines together with the nature, location and height of landform that could limit visibility.

It is important to note that the wind turbines would be visible from some areas of the landscape beyond the 10 km viewshed; however, within the general parameters of normal human vision, a wind

turbine at around 157 m to the tip of the rotor blade would occupy a relatively small proportion of a person's field of view from distances in excess of 10 km.

The viewshed is used as a framework and guide for visibility assessment, as the degree of visual significance would tend to be graduated with distance although there are unlikely to be any distinct or abrupt noticeable changes between the nominated distances.

### 7.3 Zone of Visual Influence

The ZVI diagrams are used to identify theoretical areas of the landscape from which a defined number of wind turbines, or portions of turbines, could be visible within the viewshed. They are useful for providing an overview as to the extent to which the project could be visible from surrounding areas.

ZVI diagrams have been prepared to include:

- ZVI Diagram 1 from tip of blade;
- ZVI Diagram 2 from hub height; and
- ZVI Diagram 3 toward the whole turbine.

The extent to which the wind turbines may be visible are illustrated in **Figure 23**, and the ZVI Diagrams in **Figures 24, 25** and **26**.

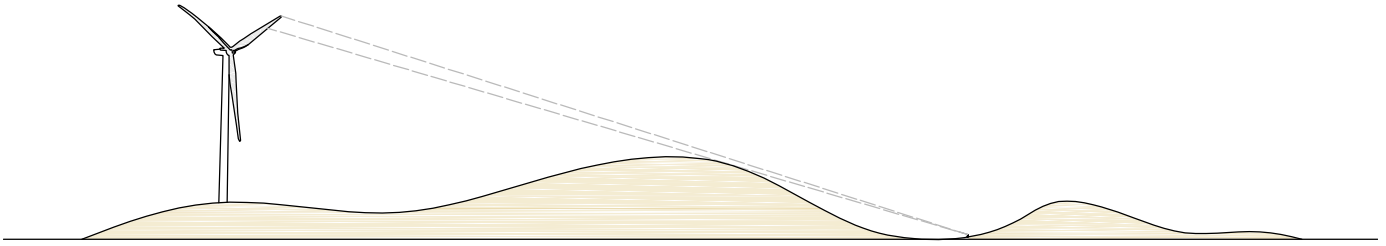
### 7.4 ZVI methodology

The methodology adopted for the ZVI is a purely geometric assessment where the visibility of the project is determined from carrying out calculations based on a digital terrain model of the site and the surrounding terrain.

Calculations have been made to determine the visibility of the wind turbines:

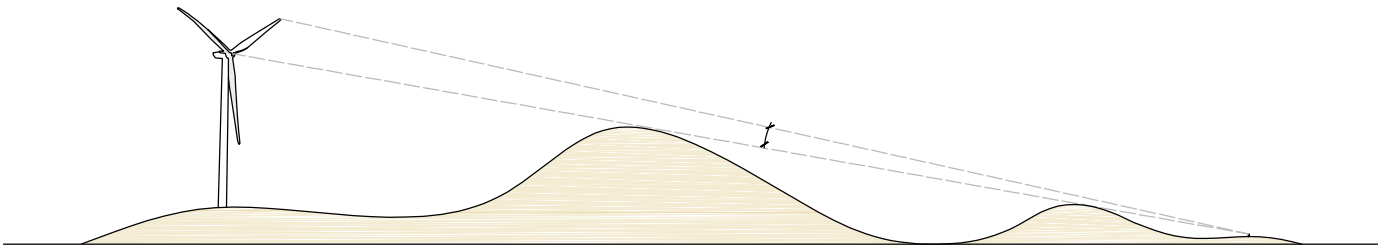
- to blade tips (essentially a view toward any part of the wind turbine rotor, including views toward the tips of blades above ridgelines);
- to hub height (essentially a view toward half the swept path of the wind turbine blades); and
- to the whole turbine (essentially a view toward the whole turbine).

The calculations also take into account the terrain relief and earth curvature.



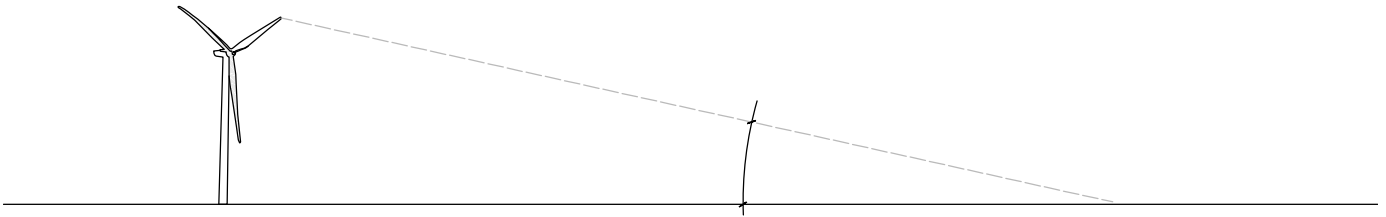
'Tip of blade'

View toward 'tip of blade' - where views extend toward the tip of blades above hill and ridgelines.



'Hub height'

View toward 'hub height' - where views extend toward the upper half of the wind turbine rotor with views toward the lower half of the rotor face and tower screened by landform.



'Whole turbine'

View toward 'whole turbine' - where views extend from the base of the tower to the tip of the rotor blade.

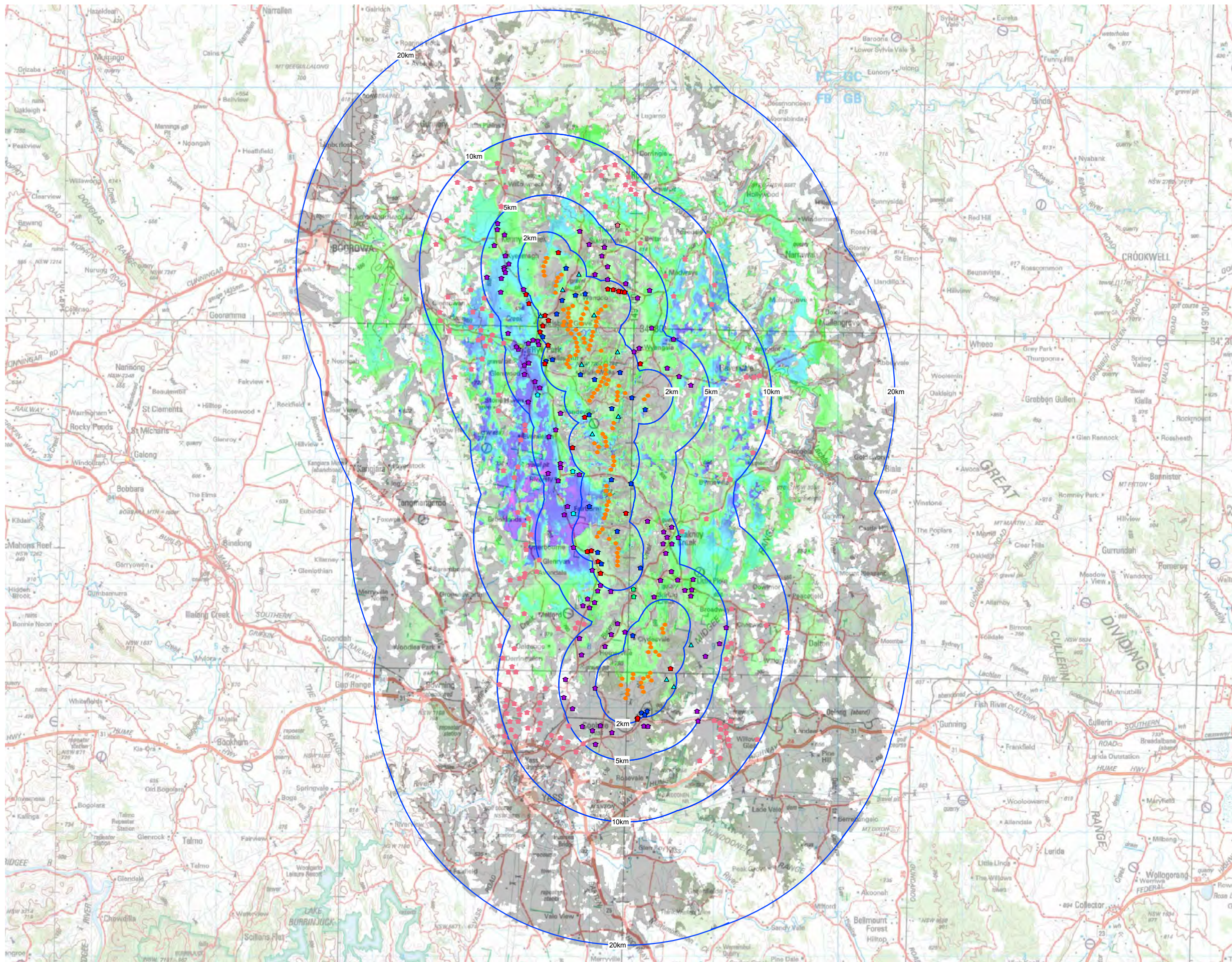
Figure 23  
ZVI visibility zones

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# RYE PARK WIND FARM



**NOTES:**

The ZVI methodology is a purely geometric assessment where the visibility of the proposed Rye Park wind farm is determined from carrying out calculations based on a digital terrain model of the site and the surrounding terrain.

This assessment methodology is assumed to be conservative as the screening affects of any structures and vegetation above ground level are not considered in any way. Therefore the wind farm may not be visible at many of the locations indicated on the ZVI maps due to the local presence of trees, vegetation or other screening potential. While the ZVI maps are a useful visualisation tool, they are very conservative in nature.

Additionally, the number of turbines visible at any one time is also affected by the weather condition at the time. Inclement or cloudy weather tends to mask the visibility of the proposed wind project.

**LEGEND:**

Number of wind turbine tip of blade visible

- 121 - 126
- 101 - 120
- 81 - 100
- 61 - 80
- 41 - 60
- 21 - 40
- 1 - 20

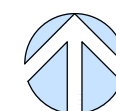
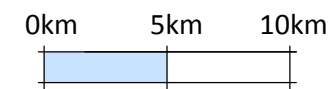
- Involved residential dwelling within 2 km of wind turbine
- Involved residential dwelling beyond 2 km of wind turbine
- Uninvolved residential dwelling within 2 km of wind turbine
- Uninvolved residential dwelling between 2 km and 5 km of wind turbine
- Uninvolved residential dwelling between 5 km and 10 km of wind turbine
- ▲ Non residential structure
- Proposed Rye Park wind turbine (indicative layout)
- ( Distance from proposed Rye Park wind turbine

**Figure 24**  
ZVI Diagram 1 tip of blade

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