RE Future

Brewster Wind Farm

Application for Planning Permit

Appendix C – Landscape and Visual Impact Assessment

August 2024

Brewster Wind Farm

Landscape and Visual Impact Assessment

Prepared for RE Future Pty Ltd 18 June 2024

GBD

Landscape Architecture

gbdla.com.au

GBD is a leading specialist in landscape planning and renewable energy landscape and visual assessment, setting a course that others follow.

Servicing the renewable energy industry for over 18 years, GBD has gathered a wealth of unrivalled project experience in a variety of landscapes from Far North Queensland to western Tasmania.

GBD has applied knowledge across multiple state planning authorities addressing planning frameworks and specific regulatory requirements for renewable energy developments.

Green Bean Design Pty Ltd
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The methodology adopted and sources of information used are outlined in this report. GBD has made no independent verification of this information beyond the agreed scope of works and GBD assumes no responsibility for any inaccuracies or omissions.

No indications were found during our investigations that information contained in this report as provided to GBD was false.

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Cover image: View toward the proposed Brewster Wind Farm from Church Road, Trawalla

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Table 1 Glossary

Term	Definition
Cumulative effects	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Landscape	A visible area of the earth's surface defined by natural or human induced change with discernible characteristic of landform, land use and human cultural overlays.
Landscape character	A distinct and consistent pattern of elements in the landscape that create an area of landscape visually different from other areas.
Magnitude	A combination of the scale, extent and duration of an effect.
Mitigation	Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.
Photomontage (Visualisation)	Computer simulation or other technique to illustrate the appearance of a development.
Sensitivity	Susceptibility of a receiver to a specific type of change.
Viewshed	The total landscape area seen from a location or path of travel
Visibility	A relative determination at which the proposal can be clearly discerned and described.
Visual amenity	The value of a particular area or view in terms of what is seen.
Visual effect	The change in character of an available view that results from a development or the changes in visual amenity of people living beyond the project.
Visual Assessment	A process of applied professional and methodical techniques to assess and determine the extent and nature of change to the composition of existing views that may result from a development.
View location	A place or situation from which a proposed development may be visible.
Visual receiver	Individual and/or defined groups of people who have the potential to be affected by a proposal.
Visual significance	A measure of the importance or gravity of the visual effect culminating from the degree of magnitude and receiver sensitivity.

Section 1. Executive summary

1.1 Introduction

Green Bean Design Pty Ltd (GBD) was commissioned by Brewster Wind Farm Pty Ltd, (the Proponent) to undertake a Landscape and Visual Impact Assessment (LVIA) for the proposed Brewster Wind Farm (the Project).

The Project would comprise up to 6 wind turbines, 1 switchyard, associated electrical infrastructure and ancillary structures such as a control room, access tracks and hardstands. The proposed wind turbines have been assessed with an overall tip height up to 252 metres above ground level and would form the most visible component of the Project.

This LVIA has determined that the landscape surrounding the project site, as well as landscape in the broader viewshed, has a moderate sensitivity to change and represents a modified and productive agricultural landscape which is common to the Western Victoria landscape region.

This LVIA has determined that the visual impact of the Project is likely to be low to moderate from publicly accessible locations and that the proposed Brewster Wind Farm:

- would have a negligible visual impact on the principal rural townships.
- would result in no significant impact on views from the Western Highway and railway
- would result in no significant impact on views from local roads and
- would result in no significant visual impact from scenic areas, public reserves and recreational areas, including any available long distant views from Mount Buangor and other regional state parks.

A cumulative assessment identified the Waubra Wind Farm at around 8 kilometres (km) north from the proposed Brewster wind turbines, the Stockyard Hill Wind Farm at around 8.5km to the south west and the Chepstowe Wind Farm 15km south from the proposed Brewster wind turbines. This LVIA determined that there would be a limited degree of visibility between the Brewster wind turbines and the Waubra Wind Farm; however, the potential for any significant level of direct and indirect cumulative impact would be mitigated by the distance between sensitive dwelling locations and wind turbines within each of the wind farms.

Although some mitigation measures are considered appropriate to minimise the visual effects for a number of the elements associated with the Project, it is acknowledged that the degree to which the wind turbines may be visually mitigated is limited by their scale and position within the landscape relative to surrounding view locations.

Section 2. Introduction

2.1 Introduction

This LVIA has been prepared by GBD on behalf of the Proponent to accompany a Planning Permit Application for the Project. This LVIA informs the assessment of the Project for suitability to install wind turbines within the landscape surrounding the project site, as well as considering the potential extent and degree of visual effects on people living in, and travelling through, the surrounding landscape.

This LVIA has been prepared with regard to the following documents and guidelines to identify and consider potential landscape and visual impacts:

- Ministerial guidelines for assessment of environmental effects under the Environmental Effects Act 1978
- Pyrenees Shire Planning Scheme
- Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021 and the
- South West Landscape Assessment Study, 2013.

In addition, this LVIA has also considered landscape and visual impact assessment guidance set out in:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute and Institute of Environmental Management & Assessment, 2013
- Siting and Designing Wind Farms in the Landscape, Version 2, Scottish Natural Heritage, May 2014; and
- Visual Representation of Wind Farms, Version 2.2, Scottish Natural Heritage, March 2017.

Section 3. Methodology and report structure

3.1 Methodology

This LVIA has been prepared by Andrew Homewood, Director and Principal Landscape Architect of GBD. Andrew has over 30 years' experience in landscape architectural consulting, and over 18 years' experience in the preparation of LVIA reports for wind farm projects, as well as other state significant projects including high voltage transmission lines, substations, and battery energy storage systems. Andrew has been commissioned to undertake LVIA studies for over 60 large scale renewable energy projects across Victoria, New South Wales, Queensland, South Australia, and Tasmania.

The methodology employed for this LVIA has been based on existing guidelines identified in the LVIA introduction. The methodology is also based on the assessment of multiple wind farm projects undertaken by GBD within Victoria, South Australia, New South Wales, Queensland and Tasmania. In its most basic form, the key principles of visual impact assessment consider a combination of:

- receiver sensitivity (landscape or people) and
- potential magnitude of visual effects.

These principles are set out in several guidelines including the Victorian Guidelines and the UK Guidelines. For wind farm projects the magnitude of visual effects is primarily determined through:

- distance between wind turbines and receiver locations
- horizontal field of view occupied by wind turbine structures and
- vertical field of view occupied by wind turbines.

The measurement of horizontal and vertical fields of view are difficult to quantify against set criteria for potential visual impact and are often considered against the parameters of normal human eyesight. Whilst human eyesight can be objectified against horizontal and vertical field of view, it does not consider the almost continual movement of receivers in the landscape and a natural inclination to scan distant horizons. Nevertheless, formulating professional judgement on the visual scale of a wind turbine within a particular vista is necessary step in the visual assessment process.

It is important to understand the difference between visual impact assessment and landscape visual assessment and why both types of assessments are appropriate to include in this LVIA. Visual impact assessments assess impacts on viewers (people) caused by developments on views from selected viewpoints, as seen by people.

A visual impact assessment will determine the change to the view itself caused by the addition of the development. It also determines how change will affect the experience of people who may be at a particular viewpoint, and how they might respond to the change. The effect of seeing a wind farm on viewer experience depends in part on what the viewers are doing when viewing a wind farm, and their response depends in part on who they are and how much they value the view. Landscape impact assessment considers impacts on physical elements and features that make up the aesthetic, perceptual, and experiential aspects of that landscape or that make it distinctive. These impacts affect the "feel," "character," or "sense of place" of an area of landscape, rather than the composition of a view from a particular place. Landscape effects are a measure of the degree of compatibility of the character of the development, which might be, for example, "industrial," with the character of the landscape or seascape it is in or is visible from, say, "wilderness" or "tranquil." The impact receptor is the potentially affected landscape.

The final assessment of potential landscape and visual impacts combines sensitivity and magnitude of visual effects and is ultimately a process of professional judgement. Professional judgement applies knowledge, assessment skills and relevant experience within the context of existing guidelines and technical supplements. Professional judgements applied in this LVIA are based on reasonable and defined criteria and have been subject to peer review.

3.2 Professional judgement in landscape and visual impact assessment

The process of landscape and visual impact assessment incorporates both qualitative and quantitative analysis; however, determinations of impacts are ultimately based on interpretations informed by professional judgement. The application of professional judgement is outlined in the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013 (the UK Guideline, which notes that professional judgement is a very important part of landscape and visual impact assessment. The UK Guideline notes that professional judgement is applied to several other environmental topics (e.g., ecology and cultural heritage) and that judgements made should be:

- Reasonable and based on clear and transparent methods
- Based on training and experience and
- Made, in general, by suitably qualified and experienced landscape professionals.

The UK Guideline notes that qualified and experienced landscape professionals may not agree on various aspects of a landscape and visual impact assessment which may arise from the application of different approaches or criteria; however, the core principals of receiver sensitivity and magnitude of impact should provide some consistency in determinations of impact.

3.3 Site inspections

Site inspections were undertaken in March 2022 and February 2023. Site inspection works included dwelling location verification, landscape character familiarisation and analysis and panorama photography and aerial drone imagery preparation.

3.4 Report structure

The LVIA report structure is set out in Table 2

Table 2 Report Structure

Report Section	Description
1 Executive summary	This section provides an introductory section that describes the intent and purpose of the LVIA
2 Introduction	This section sets out the structure and methodology employed in the LVIA preparation.
3 Methodology and report structure	This section describes the regional and local position of the wind farm development relative to existing landscape features and places and describes the key visible components of the project.

Table 2 Report Structure

4 Project location and description	This section identifies the area of land surrounding the wind farm project site subject to detailed assessment in this LVIA.
5 Legislative and planning frameworks	This section sets out the legislative and planning frameworks describe policies and provisions that apply to proposed wind farm within the viewshed.
6 Viewshed	This section identifies the area of land surrounding the wind farm project site subject to detailed assessment in this LVIA.
7 Panoramic and aerial photographs	This section illustrates the LVIA with panorama and aerial photographs taken during the site inspection. The photographs are provided to illustrate the general appearance of typical landscape characteristics that surround the proposed wind turbines.
8 Landscape Character Assessment	This section describes the physical characteristics of the landscape surrounding the project site and determines the overall sensitivity of the landscape to the wind farm development.
9 Zone of Theoretical Visibility	This section identifies a theoretical area of the landscape from which the wind turbines may be visible within the viewshed and describes a range of factors which may influence the wind farm visibility within the viewshed.
10 Key views and visual effects	This section describes and determines the potential visual effect of the wind turbines on key public viewpoints within the project viewshed.
11 Cumulative assessment	This section describes the potential effect of alternate existing and/or known wind farm developments within proximity to the project.
12 Pre-construction and construction	This section describes the activities associated with pre-construction and during construction which may create visual effects.
13 Mitigation measures	This section outlines potential mitigation measures to minimise visual effects arising from the proposed wind farm development.
14 Conclusion	Conclusions are drawn on the overall visual effect of the proposed project.
Appendix A	Photomontage methodology
Appendix B	Public photomontage

Table 2 Report Structure

Appendix C	Qualifications and experience

Section 4 Project location and description

4.1 Project location

The proposed Brewster Wind Farm project site is located in Western Victoria within the Pyrenees Shire local government area. The project site is approximately 9km east of Beaufort and 27km west of Ballarat. The project site location in both regional and local contexts is illustrated in Figures 1 and 2.

4.2 Project description

The key visual components of the proposed Brewster Wind Farm are currently expected to comprise:

- up to 6 wind turbines to a maximum 252 metre tip height
- control room and switchyard
- night time aviation obstacle lighting
- crane hardstand area
- 140m high meteorological mast
- a section of overhead powerline crossing Spring Hill Creek
- onsite access track for construction, operation and ongoing maintenance and
- signage.

Temporary works associated with the construction of the wind turbines that may be visible during construction and operational phases include:

- temporary site office, parking and materials storage area.

The proposed wind turbine layout is illustrated in Figure 2.

4.3 Wind turbines

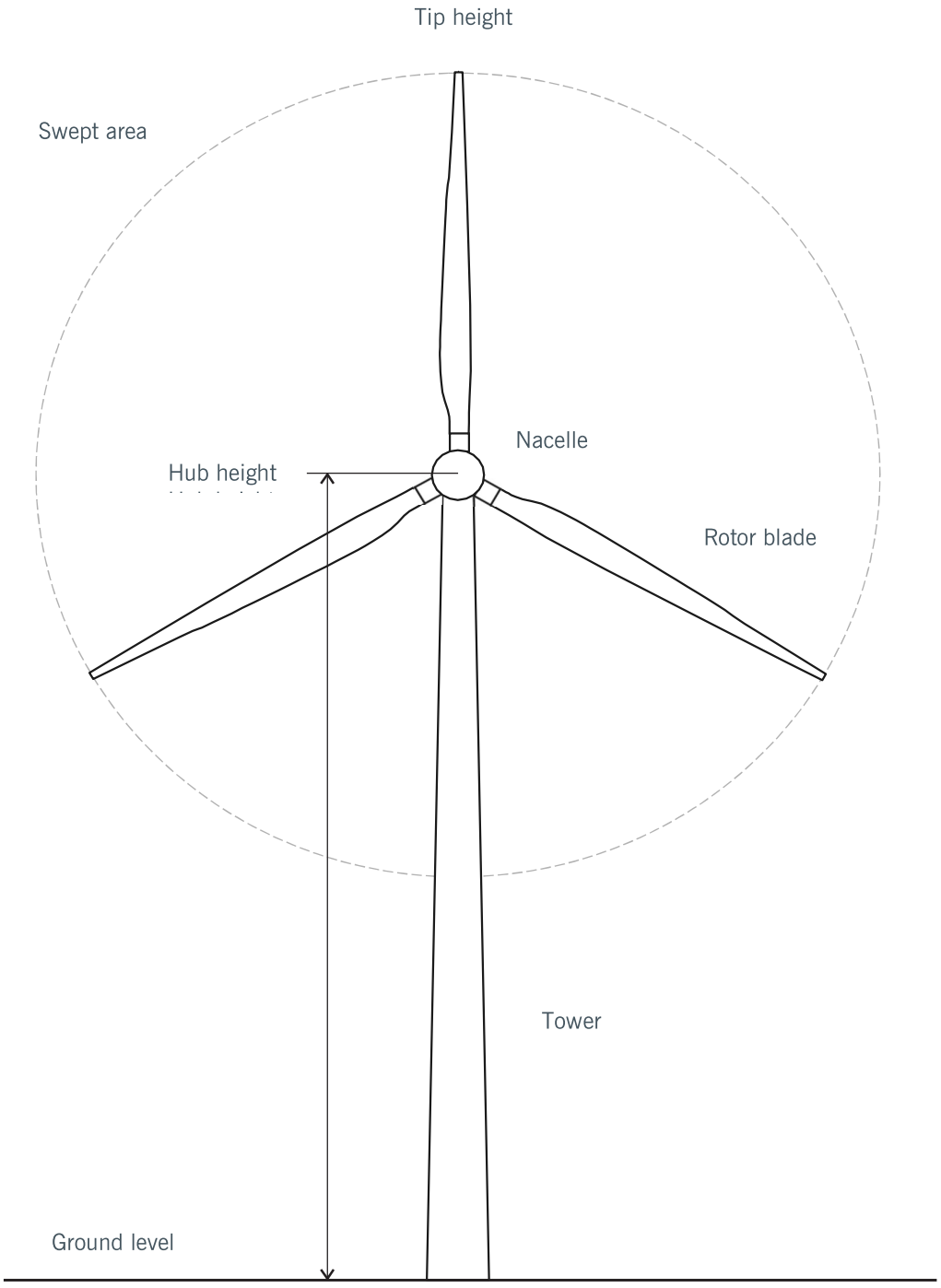
The specific elements of the wind turbines typically comprise:

- concrete foundations
- tubular tapering steel and/or concrete towers
- nacelles at the top of the tower housing the gearbox and electrical generator
- rotors comprising a hub (attached to the nacelle) with three blades and
- three composite material blades attached to each hub.

The proposed indicative wind turbine design is illustrated in **Figure 3.**

Diagram 1 – Typical wind turbine components and terminology (Image: ©GBD Pty Ltd 2022)

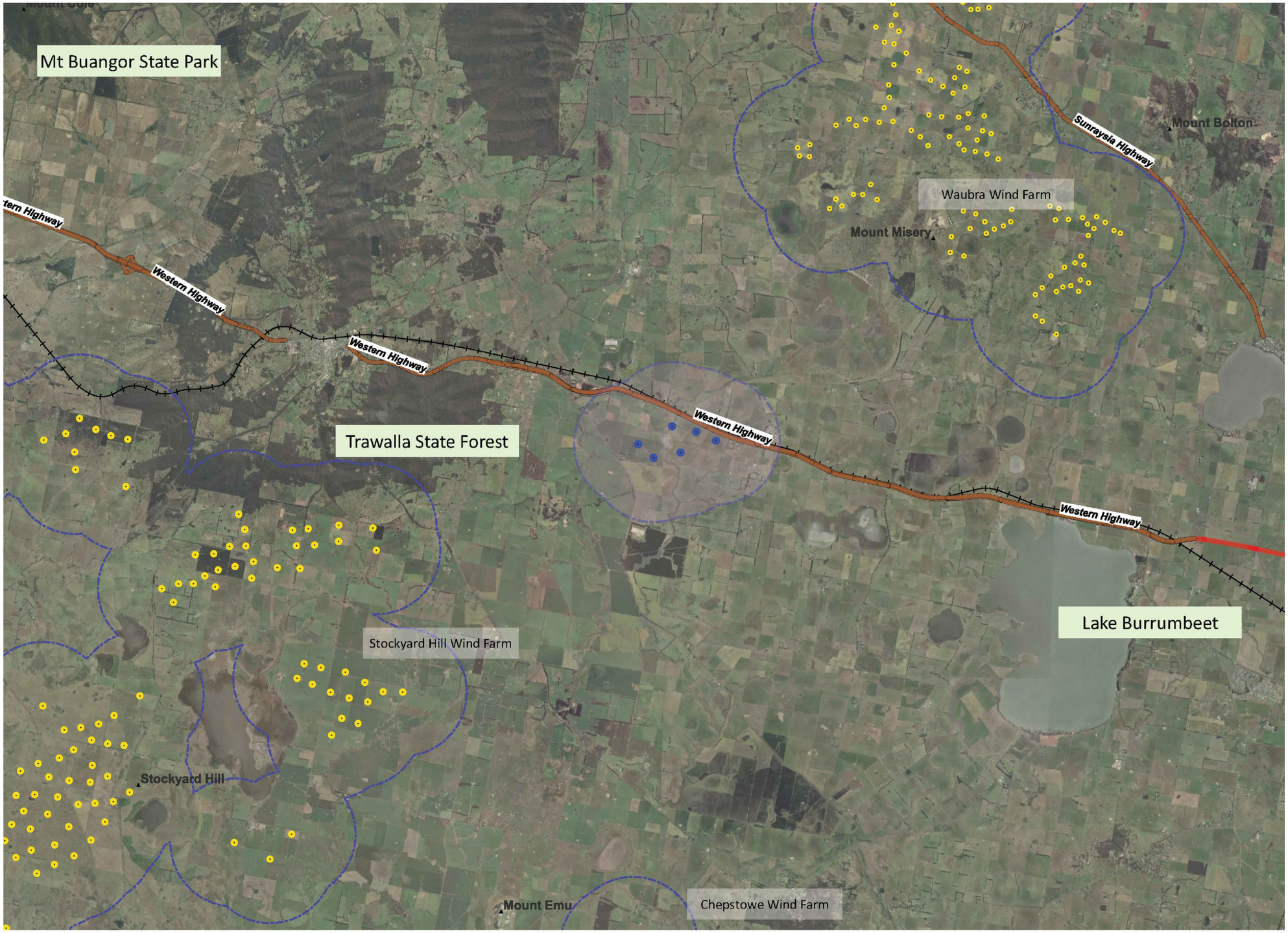
Not to scale



4.4 Electrical works and aviation obstacle lighting

The proposed wind turbines would be connected via a switchyard to the existing 66 kV distribution line located adjacent to the Western Highway. The switchyard would be connected by a single circuit 66 kV transmission line. Ancillary electrical infrastructure associated with the project is unlikely to form significant visual elements within the viewshed and not create significant visual effects on surrounding sensitive view locations.

The Proponent commissioned an aeronautical study which included a consideration with regard to obstacle lighting needs and requirements for the installation and operation of obstacle lighting. The aeronautical study concluded that whilst obstacle lighting may be required, a determination for the installation and operation of obstacle lighting would be subject to Civil Aviation Safety Authority (CASA) requirements. Any hazard lighting requirements would be installed in accordance with the Civil Aviation Safety Authority Manual of Standards Part 139 -Aerodromes, Chapter 9, paragraph 9.4.7.



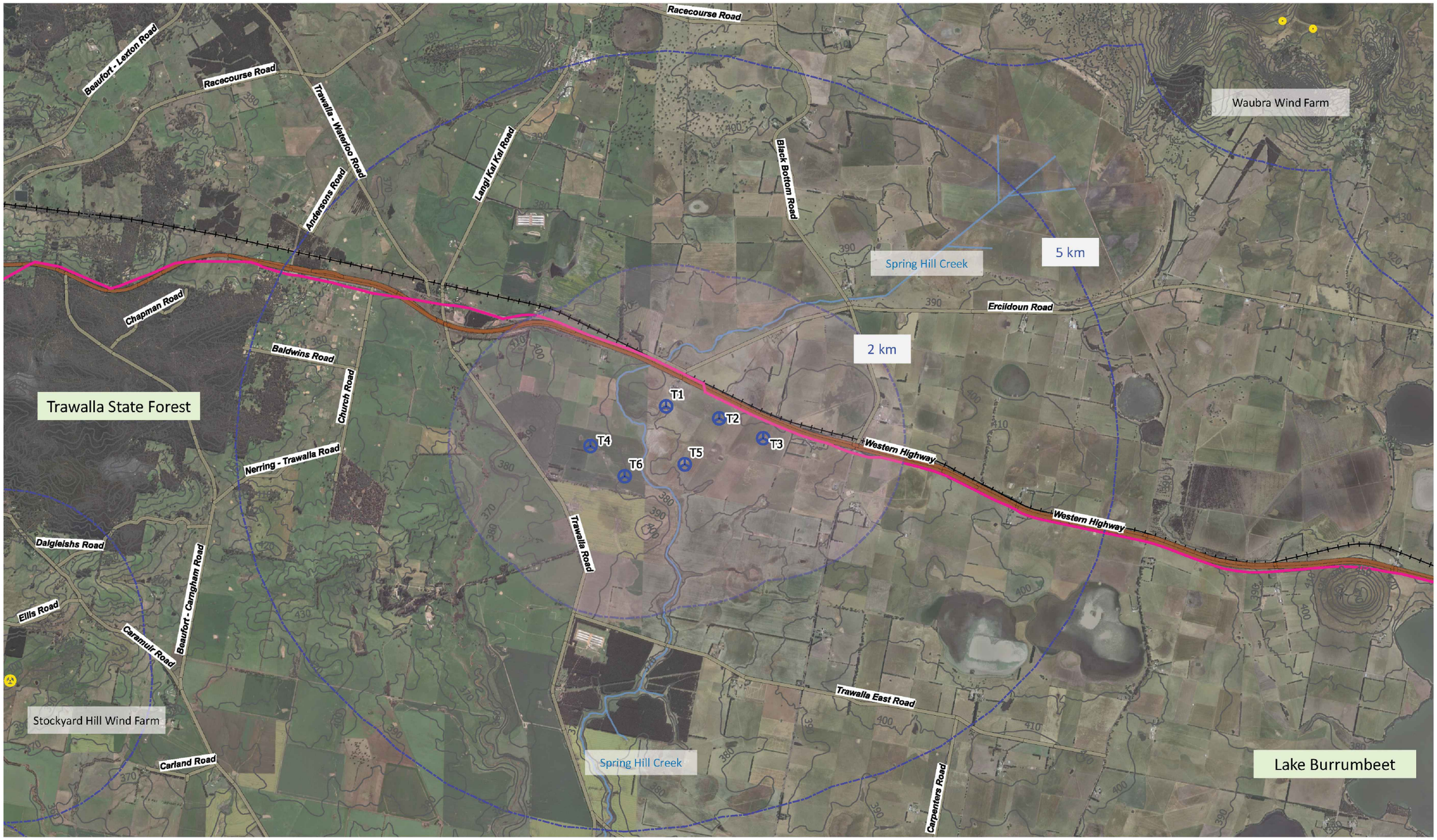
Regional location

Legend

- Brewster Wind Farm Turbines
- Other Wind Farm Turbines
- 2 km Viewshed
- Rail line
- Highway
- Freeway

Figure 1
Regional location

GBD
Landscape architecture



Project locality

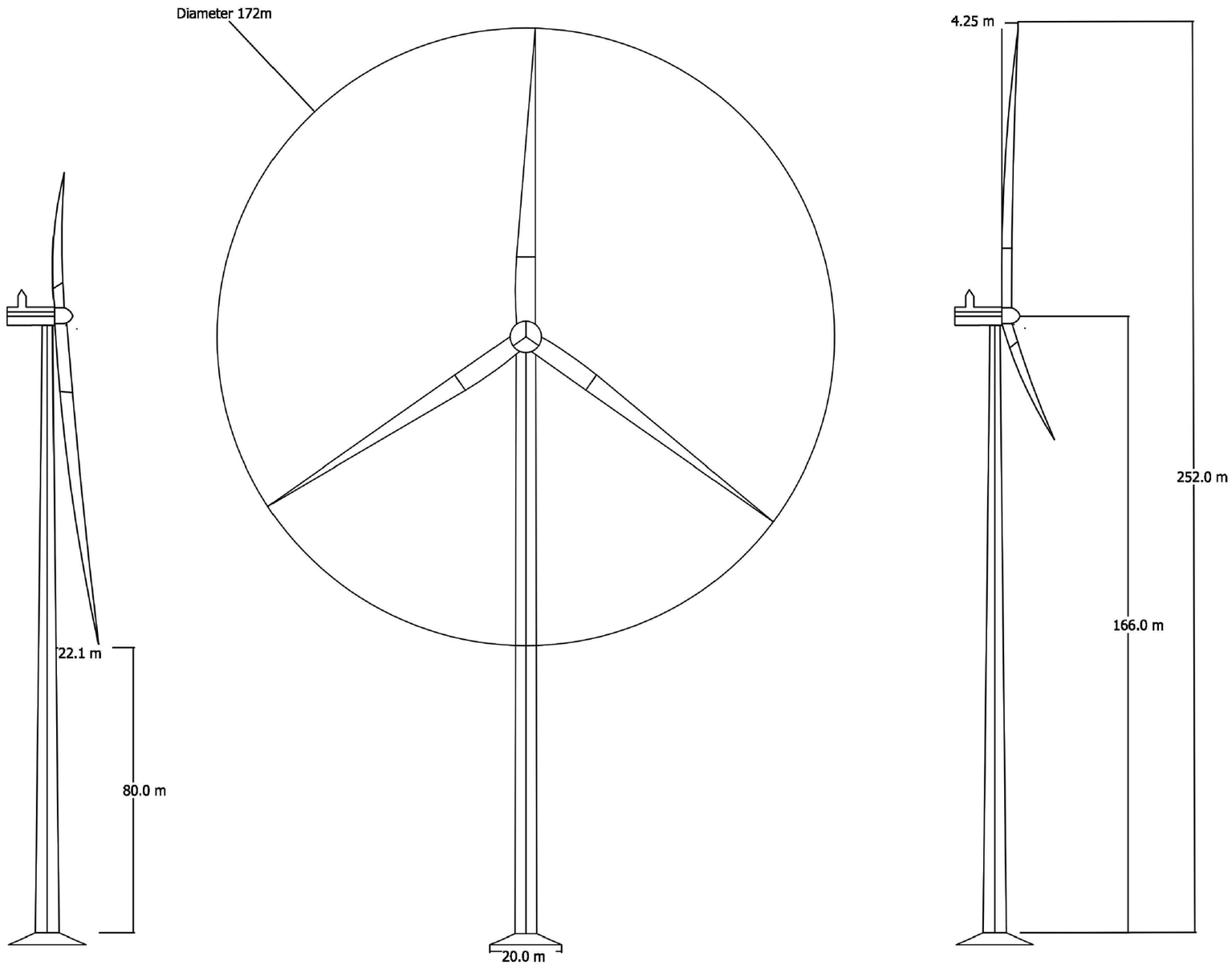
Legend

- Brewster Wind Farm Turbines
- Existing Powerline
- 2 km Viewshed
- Other Wind Farm Turbines
- Rail line
- 10 m contour
- Highway
- Road

0m 1km

Figure 2
Project locality

GBD
Landscape architecture



Make: VESTAS
Model: V172
Capacity: 6.8 mW
Nacelle, Cooler Top/Rotor Hub Material: Steel framed composite cover
Blade Material: Fibreglass composite
Tower Material: Concrete with steel reinforcment
Stair Material: Aluminium
Colour and Finish of Stairs: Natural Aluminium
Colour and Finish of Turbines: Light Grey (RAL 7035). {industry standard}
Colour and Finish of Foundations: Cement Grey, Natural Concrete

Figure 3
Indicative wind turbine design

Section 5. Legislative and planning frameworks

5.1 Introduction

This LVIA has been undertaken with regard to various State and Local planning policies, as well as controls and policy guidelines applicable to the Brewster Wind Farm project. These include:

Planning Policies

- Victorian State Planning Policy Framework – relevant Clause 19.01 (Energy)
- Victorian State Planning Policy Framework – relevant Clause 19.01-2S (Renewable energy)

Planning Controls

- Particular Provisions – relevant Clauses 52.32
- Zoning and Overlays

Relevant guidelines

- Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021.

5.2 State Planning Policy Framework

The Victorian Government State Planning Policy Framework Clause 19.01-2S, Renewable energy, sets out objectives, strategies and policy guidelines for the provision of renewable energy including the development of wind energy facilities.

5.3 Local Planning Policy Framework – Pyrenees Shire Planning Schemes

The Local Planning Policy Framework for Pyrenees Shire Council is set out in Clause 21 and Clause 22 of the Planning Schemes. Clause 21 sets out the Municipal Strategic Statements (MSS) and Clause 22 the Local Planning Policies particular to each Council. The Pyrenees Shire Planning Scheme references numerous Clauses in relation to objectives, strategies and policy guidelines to address Councils strategic planning objectives. Those with specific relevance to the Brewster Wind Farm include:

Clause 21.04 of the Pyrenees Shire Planning Scheme MSS describes the environmental and landscape values of the Shire in particular the land systems, natural features and planning constraints within the Shire. Notably the Brewster wind Farm does not impact on any of the identified natural features and constraints within the Shire.

5.4 Zoning and Overlays

The proposed Brewster Wind Farm is located within the Rural Farming Zone (FZ) as defined in Clause 35.07 of the Planning Scheme. Wind energy facilities are a permissible use subject to the wind energy project meeting the requirements of the State Planning Policy Clause 52.32 Wind Energy Facility.

Within the 5km viewshed of the wind farm are the following additional planning zones.

- RDZ1, the Western Highway and associated land adjacent to the project site is in a Road Zone 1
- PUZ4, a Public Use Transport zone covering the Ararat Railway line which runs adjacent to the Western Highway on the northern side.

- PUZ7, a Public Use Zone – Other Public Use covering the Langi Kal Kal Prison
- RLZ, a Rural Living Zone covering the rural settlement at the parameter of the viewshed.

Within the 5km viewshed of the wind farm are the following planning overlays

- Vegetation protection overlay (VPO) along Black Bottom Road
- Environmental Significance overlay (ESO) along Mount Emu Creek
- Public Acquisition Overlay (POA) in relation to the Western Highway duplication
- Various areas of Bushfire Management overlays (BMO) mostly relating to areas of existing and removed blue gum plantations
- A Heritage overlay (HO35) Trawalla Estate – Homestead buildings, Outbuildings, gardens, old stables and shearing quarters. Trawalla estate is not included on the Victorian Heritage Register. A Heritage overlay (HO36) The Trawalla Church. The Heritage overlay HO38 relating to the Old Trawalla Bluestone Woolshed and Quarters at 666 Trawalla East Rd is located just outside the 5km viewshed
- Restructure Overlay – Schedule 27 covering the hamlet of Trawalla

No Significant Landscape Overlays (SLO's) in the Pyrenees Shire Planning Schemes have been identified within the proposed Brewster Wind Farm 5km viewshed. Within the neighbouring Ballarat City Planning Scheme there is an SLO covering with Lake Burrumbeet associated wetlands (8.7km at its nearest point).

5.5 Particular provisions

Particular Provisions Clause 52.32, Wind Energy Facility sets out a framework which includes the preparation of a design response to assess the visual impact of the proposal on the surrounding landscape. The Planning Scheme outlines application requirements for wind energy facilities under Clause 52.32. In broad terms the application information with specific regard to landscape and visual includes:

- Direction and distances to nearby dwellings, townships, urban areas, significant conservation and recreation areas, water features, tourist routes and walking tracks, major roads, airports, aerodromes and existing and proposed wind energy facilities
- Views to and from the site, including views from existing dwellings and key vantage points including major roads, walking tracks, tourist routes and regional population growth corridors
- A site plan, photographs or other techniques to accurately describe the site and surrounding area
- Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points
- A description of how the proposal responds to any significant landscape features for the area identified in the planning scheme and
- An assessment of:
    - the visual impact of the proposal on the landscape and

- the visual impact on abutting land that is subject to the National Parks Act 1975 and Ramsar wetlands and coastal areas.

5.6 Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021 (the Victorian Guidelines)

The purpose of the Victorian Guidelines is to set out:

- a framework to provide a consistent and balanced approach to the assessment of wind energy projects across the state
- a set of consistent operational performance standards to inform the assessment and operation of a wind energy facility project and
- guidance as to how planning permit application requirements might be met.

The Victorian Guidelines outline the key criteria for evaluation of the planning merits of a wind energy facility. Section 5.1.3 Landscape and visual amenity identifies several considerations with regard to the degree of visual impact caused by wind farm developments.

5.7 Draft National Wind Farm Guidelines

The Draft National Wind Farm Development Guidelines, originally issued October 2009, have been revised following a first round of public consultation and comment. The revised Guidelines were re-issued in July 2010 for a second round of comments. The Environment Protection and Heritage Standing Committee ceased further development of the Guidelines in 2010.

5.8 Planning considerations

The key considerations drawn from the existing planning policy framework which are directly relevant to this LVIA are as follows:

The Brewster Wind Farm site is located within land designated as Farming Zone within the Pyrenees Shire Planning Scheme.

There are no Significant Landscape Overlays (SLO) within the immediate project site viewshed.

There is a Heritage overlay (HO35) Trawalla Estate which covers Homestead buildings, Outbuildings, gardens, old stables and shearing quarters and (HO36) The Trawalla Church. Neither are included on the Victorian Heritage Register.

There are no Regional Cities or Townships within the project site viewshed. Trawalla location is hamlet consisting of four dwellings, an unused roadhouse, abandoned/derelict railway station, a public hall, the Burrumbeet cemetery reserve, the Trawalla Primary School and the James Scullin Memorial Reserve. The Brewster location is also a hamlet consisting of 2 dwellings, public hall and a Country Fire Authority station. There is a settlement as identified by a rural living zone (RLZ) 3.5km from the wind farm and west of the Trawalla location. Principal townships in the region are Beaufort (9km from the wind farm) Lexton (18km from the wind farm) and Waubra (14km from the wind farm).

The Victorian Guidelines (March 2019) present a comprehensive and clear set of considerations by which to assess the potential visual impacts of wind farm developments; however, some of the considerations require a greater degree and more detailed level of assessment than is required for this LVIA.

Section 6. Viewshed

6.1 Viewshed

For this LVIA the viewshed is defined as the area of land surrounding and beyond the project area which may be potentially affected by the wind turbines. In essence, the viewshed defines this LVIA study area. The viewshed for the proposed Brewster Wind Farm has been illustrated at 5km extending across the landscape away from the wind turbines.

The distance of the viewshed can vary between wind farm projects and may be influenced and informed by several criteria including the height of the wind turbines together with the nature, location and height of landform that may limit and influence the extent of wind farm visibility.

It is important to note that the wind turbines would be visible from areas of the landscape beyond the 5 kilometre viewshed; however, within the general parameters of normal human vision, a wind turbine at a maximum height of 252 metres 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 5km and result in a relatively low level of perceived visual significance.

Section 7. Panoramic photographs and aerial images

7.1 Panoramic photographs and aerial images

A series of individual and panorama digital photographs and aerial images were taken during the site inspection to illustrate existing views near the Project and to give a sense of the overall site in its broader landscape setting and characteristics. Photo locations were selected to illustrate the variety of landforms and vegetation types found within the viewshed. The panorama photographs were digitally stitched together forming a segmented panorama image to provide a visual illustration of the existing view from each photo location. Photographs presented in this section are informative only and do not illustrate the actual location or appearance of the Project wind turbines. The proposed wind turbines are illustrated in the photomontages included in Appendix B of this LVIA report.

The panorama photographs were taken with a Nikon D850 digital SLR camera with a full frame sensor and a prime 50mm focal length lens. The photographs were taken as a combination of hand held and tripod mounted images; however, all photographs for the purpose of photomontages were taken with the camera tripod mounted with additional GPS data recorded with a hand held Garmin device (as the Nikon D850 does not have an internal GPS) together with start and end bearings for each panorama.

The aerial photos were taken with a DJI Mavic Pro 2, flown to a maximum height of 120m above ground level in accordance with Civil Aviation Safety Authority requirements. The aerial photos provide extensive views and vistas that are not available from ground level due to tree cover within and surrounding the site. The aerial photos provide imagery that illustrates local and distant landscape characteristics as well as the locality of key view locations and the extent/nature of potential screening elements.

The panoramic and aerial photographs presented in this LVIA have been annotated to identify local features within and beyond the Project site. The panorama photograph and aerial image locations are illustrated in **Figure 4** and illustrated in **Figures 5** to **12.**

Photo and photomontage locations

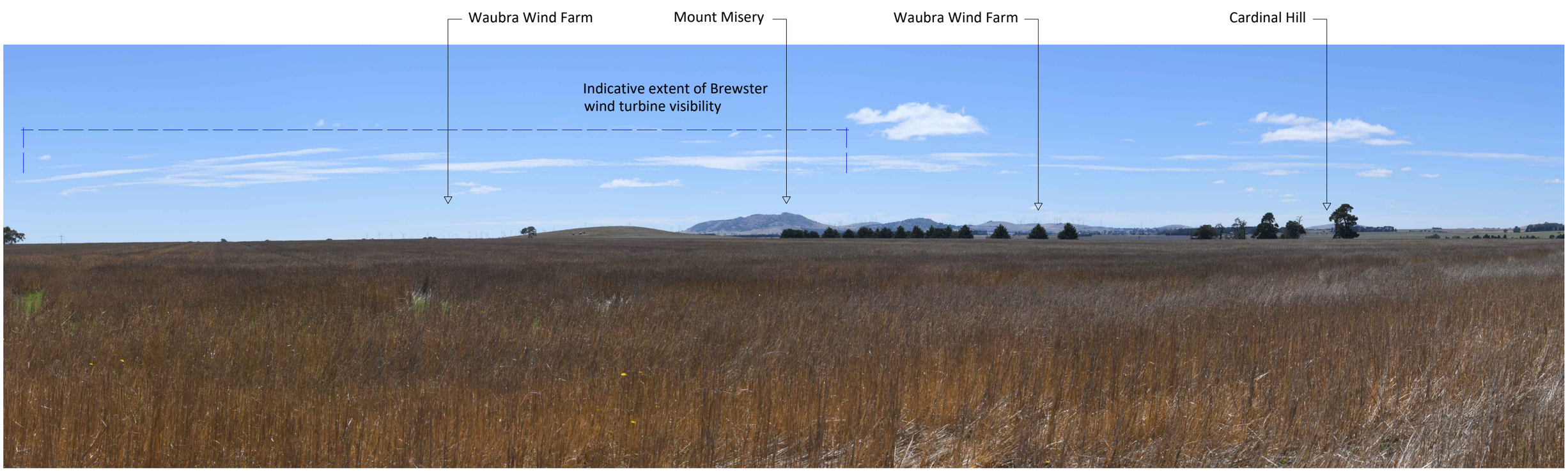
Legend

Brewster Wind Farm Turbines
2 km Viewshed
Panorama
Photomontage
Aerial photo

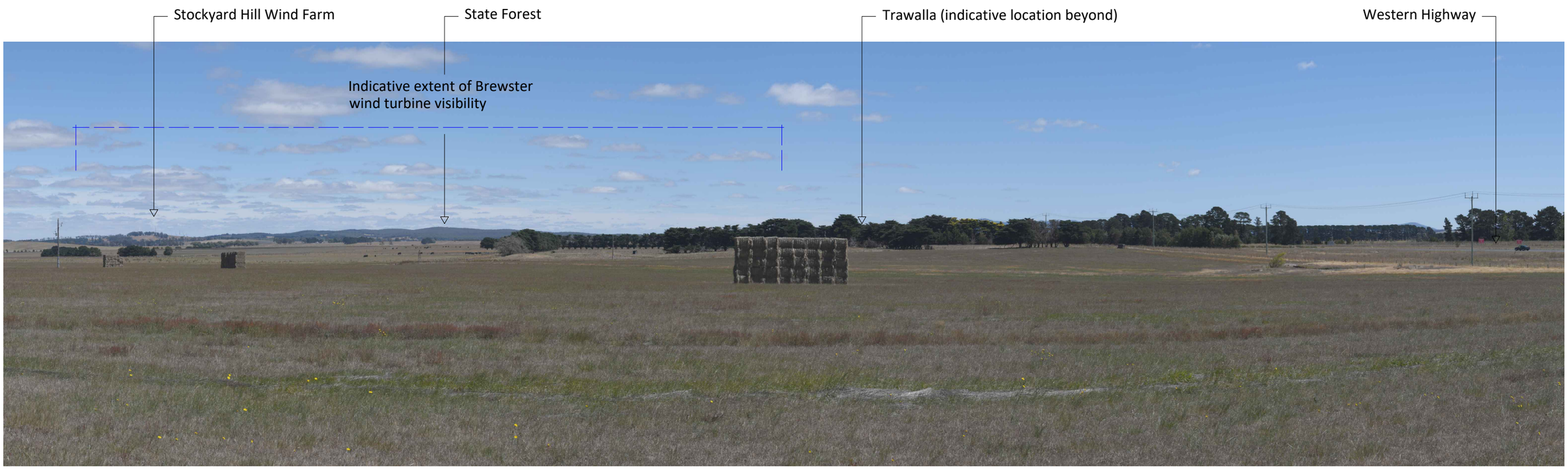
0m 1km

Figure 4
Photo and photomontage locations

GBD
Landscape architecture



Panorama photo W1 - Existing view north to east from Trawalla Road East toward the project site. Approximate distance to closest wind turbine (T6) 2.07km



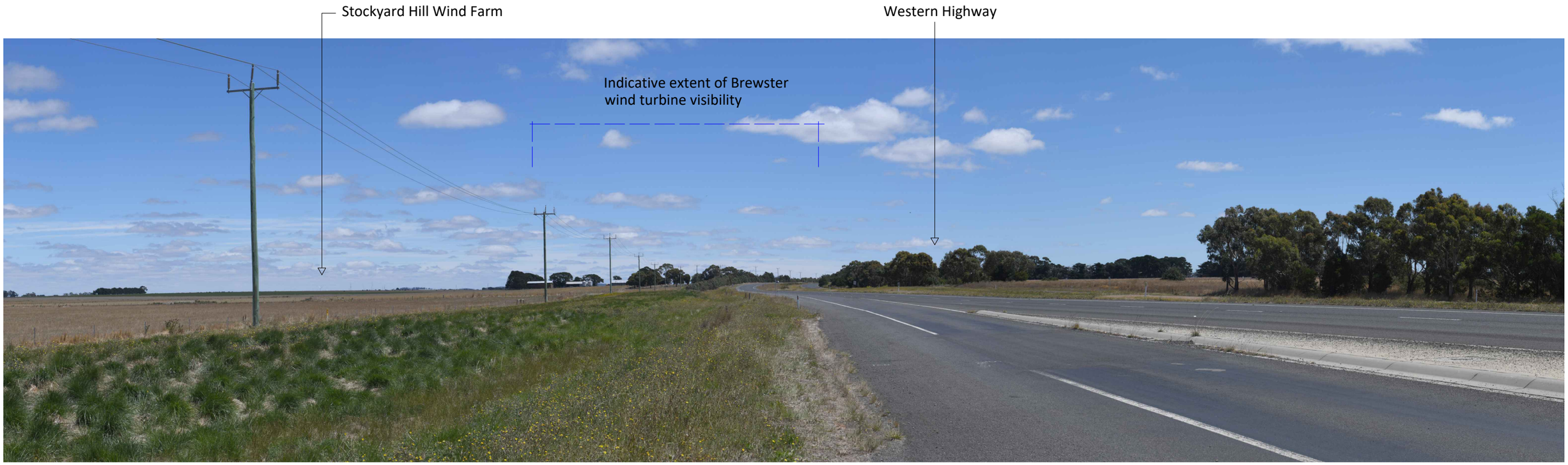
Panorama photo W2 - Existing view south west to north west from Kayleys Lane toward the project site. Approximate distance to closest wind turbine (T4) 1.29km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 5
Panorama photos W1 and W2

GBD
Landscape architecture

Panorama photo W3 - Existing view north west to north from Trawalla Road East toward the project site. Approximate distance to closest wind turbine (T3) 5.42km



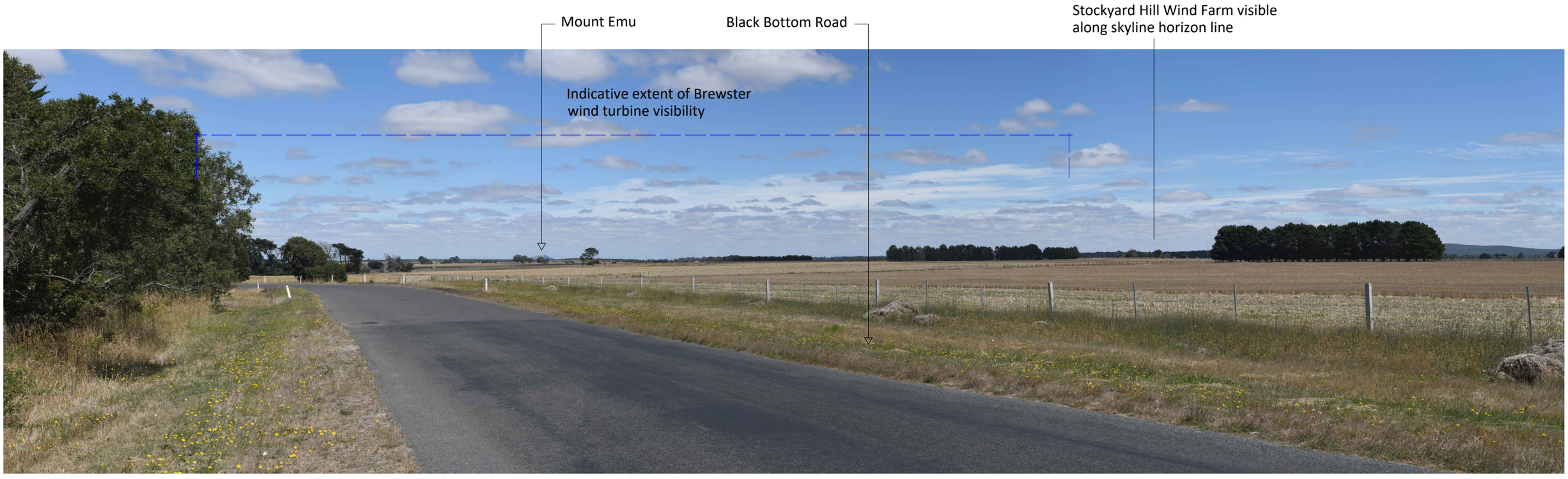
Panorama photo W4 - Existing view west to north west from Western Highway toward the project site. Approximate distance to closest wind turbine (T3) 4.78km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 6
Panorama photos W3 and W4

GBD
Landscape architecture

Panorama photo W5 - Existing view east to south east from Trawalla toward the project site. Approximate distance to closest wind turbine (T4) 2.88km



Panorama photo W6 - Existing view south west to south west from Black Bottom Road toward the project site. Approximate distance to closest wind turbine (T1) 3.18km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 7
Panorama photos W5 and W6

GBD
Landscape architecture

Panorama photo W7 - Existing view south east to south from Pin Oak Court, Trawalla toward the project site. Approximate distance to closest wind turbine (T1) 1010m

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 8
Panorama photo W7

Aerial photo A1 - south - Existing view south across the Brewster Wind Farm project site toward Mount Emu and beyond

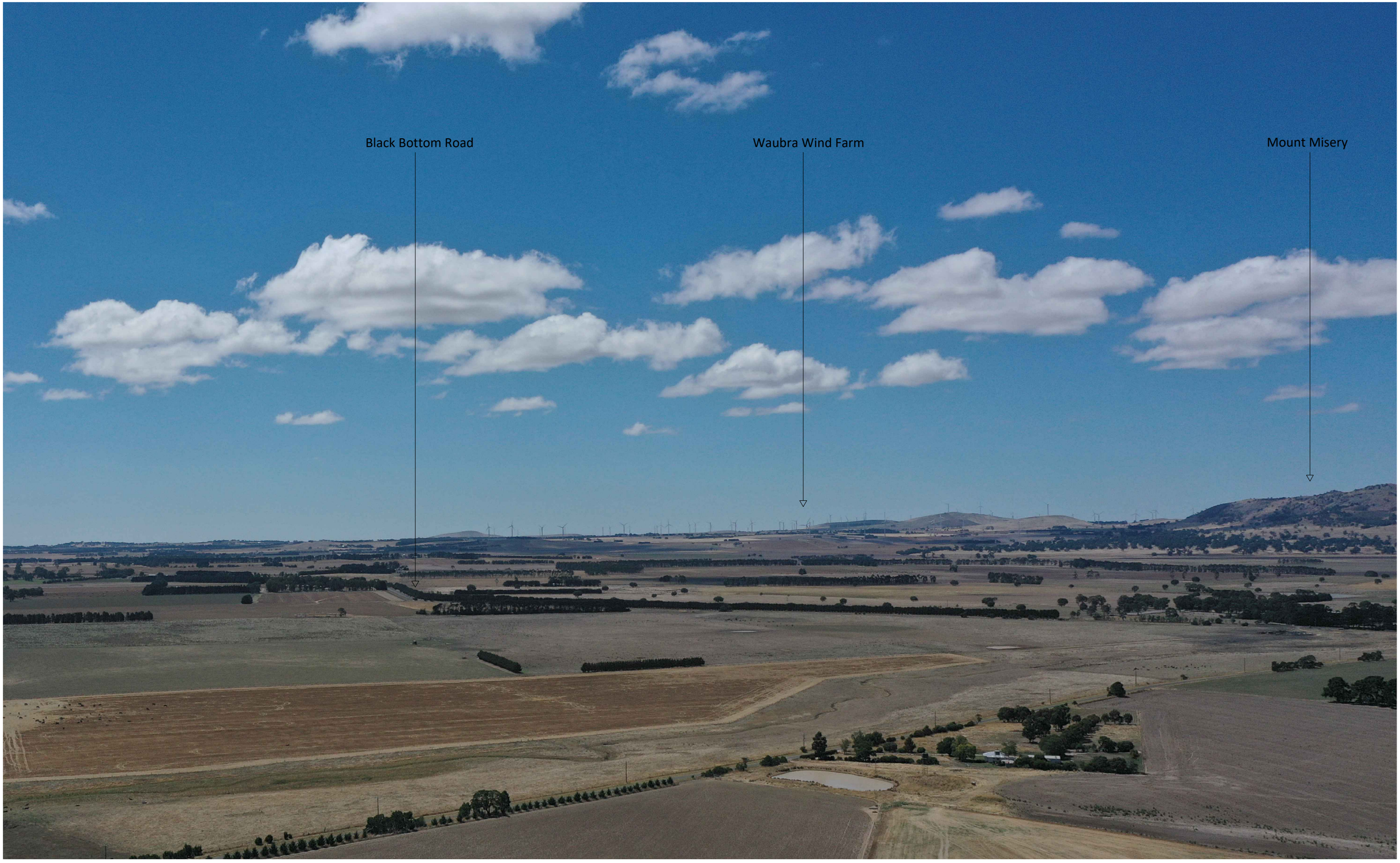
Figure 9
Aerial photo A1

GBD
Landscape architecture

Aerial photo A1 - west - Existing view west to north west from the project site toward Mount Buangor and Mount Langi Ghiran and Western Highway corridor

Figure 10
Aerial photo A1

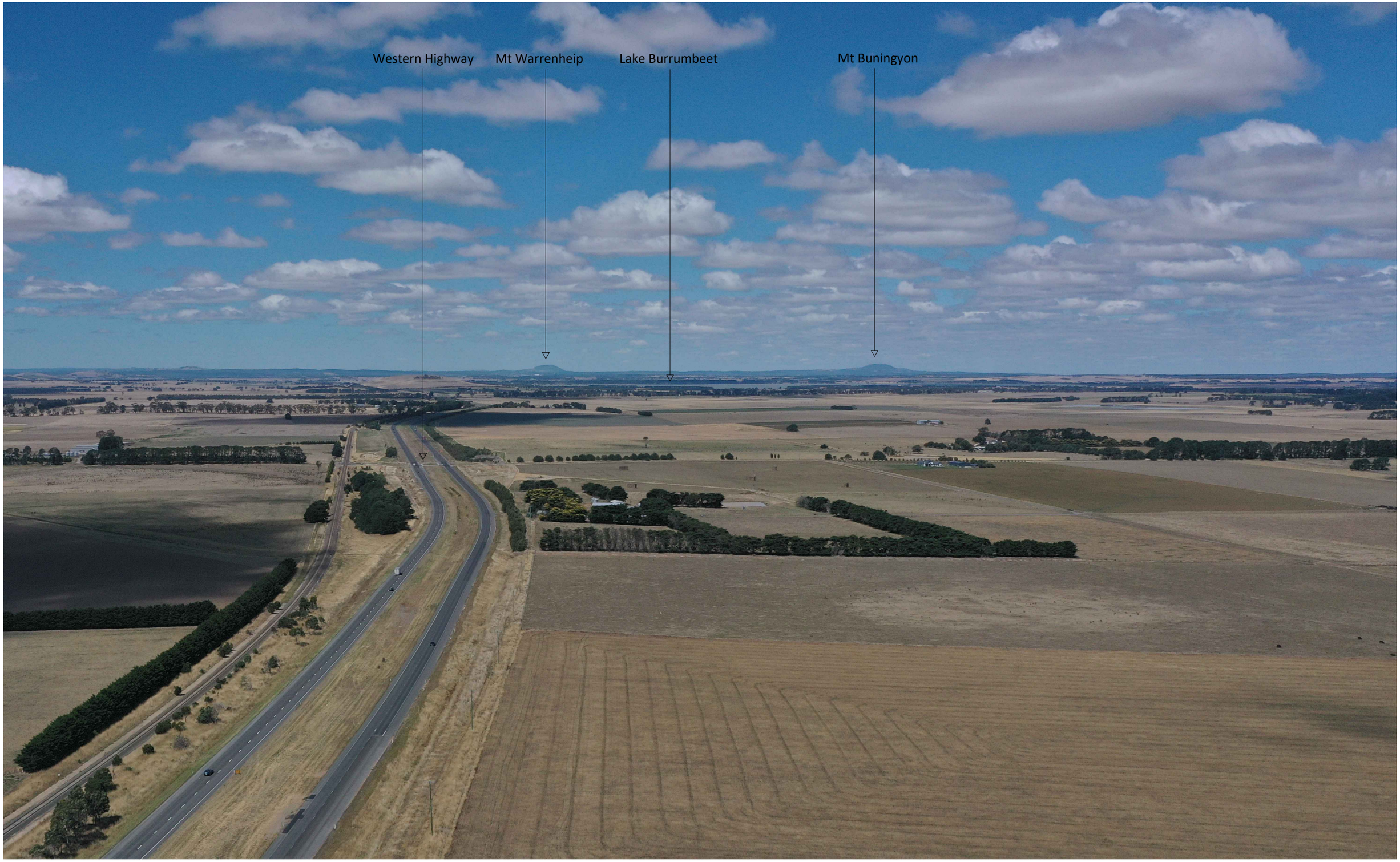
GBD
Landscape architecture



Aerial photo A1 - north - Existing view north toward Mount Misery and the Waubra Wind Farm

Figure 11
Aerial photo A1

GBD
Landscape architecture



Aerial photo A1 - east - Existing view north east to south east from project site along Western Highway corridor and toward Mount Warrenheip, Mount Buningyon and Lake Burrumbeet.

Figure 12
Aerial photo A1

GBD
Landscape architecture

Section 8. Landscape Character Assessment

8.1 Landscape Character Area

As part of the LVIA process it is important to understand the nature and sensitivity of different components of landscape character, and to assess them in a clear and consistent process. For 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). The pattern of elements includes characteristics such as landform, vegetation, landuse and settlement.

For the purposed of this LVIA, the landscape character surrounding the wind farm site has been determined as a singular landscape unit which generally occurs within the 5 kilometre viewshed of the proposed Brewster Wind Farm site. The landscape unit represents an area that is relatively consistent and recognisable in terms of its key landscape elements and physical attributes, which include a relatively limited combination of topography/landform, vegetation/landcover, land use and built structures (including settlements and local road corridors).

Whilst the landscape character surrounding the wind turbines has been defined as a singular landscape unit, this LVIA recognises that localised and specific characteristics can occur within the landscape unit, including:

Landscape uplands associated with Mt Misery and Mt Callender

Mt Emu Creek and associated vegetative patterns extending alongside the creek line corridor
Wooded upland hills of Trawalla and Waterloo State Forests and

Western Highway corridor.

For this LVIA the predominant landscape unit within and surrounding the project site has been identified as a level to very gently inclined and modified agricultural land.

8.2 Landscape character assessment

An understanding of a particular landscape's key characteristics and principal visual features is important in defining a regional distinctiveness and sense of place and to determine its sensitivity to change. The criteria applied in the determination of landscape character assessment and the ability of a landscape to accommodate change are outlined in **Table 3**. These criteria are based on established industry good practice employed in the assessment of wind farm developments and have been adopted for numerous wind farm assessments across Australia. The criteria are broadly outlined in the National Wind Farm Development Guidelines (Draft v2.4), Section 6.1 Landscape Character Units, and covered in more detail within the Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute and Institute of Environmental Management & Assessment, 2013 – Chapter 5 Assessment of landscape effects.

Landscape sensitivity is a relative concept, and landscape values of the surrounding environment may be considered of a higher or lower sensitivity than other areas in the Victorian region.

Whilst landscape character assessment 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 may place higher values on the local landscape. These values may transcend preferences (likes and dislikes) and include personal, cultural as well as other parameters that may be explored in more depth through consultation with the local community.

Table 3 Criteria for the assessment of landscape character

Landscape Character Assessment Criteria

Characteristic	Aspects indicating lower sensitivity to the wind farm development	↔	Aspects indicating higher sensitivity to the wind farm development
Landform and scale: patterns, complexity and consistency	Large scale landform Simple Featureless Absence of strong topographical variety	↔	Small scale landform Distinctive and complex Human scale indicators Presence of strong topographical variety
Landcover: patterns, complexity and consistency	Simple Predictable Smooth, regular and uniform	↔	Complex Unpredictable Rugged and irregular
Settlement and human influence	Concentrated settlement pattern Presence of contemporary structures (e.g., utility, infrastructure or industrial elements)	↔	Dispersed settlement pattern Absence of modern development, presence of small scale, historic or vernacular settlement
Movement	Prominent movement, busy	↔	No evident movement, still
Rarity	Common or widely distributed example of landscape character area within a regional context	↔	Unique or limited example of landscape character area within a regional context
Intervisibility with adjacent landscapes	Limited views into or out of landscape Neighbouring landscapes of low sensitivity Weak connections, self-contained area and views Simple large-scale backdrops	↔	Prospects into and out from high ground or open landscape Neighbouring landscapes of high sensitivity Contributes to wider landscape Complex or distinctive backdrops

8.3 Landscape sensitivity

The scale of sensitivity for the landscape character area is described below and considered against each characteristic identified in **Table 4.**

The overall sensitivity for the landscape character area has been determined against the following ratings of Negligible through to High:

Negligible – where the characteristics of the landscape character area will not be impacted or visibly altered by the proposed Project.

Low – where the majority of the landscape character area characteristics are generally robust and will be less affected by the proposed Project. The degree to which the landscape may accommodate the Project will not significantly alter existing landscape character.

Medium – where distinguishable characteristics of the landscape character area may be altered by the proposed Project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed Project will potentially result in the introduction of prominent elements to the landscape character area, which may be accommodated to some degree.

High – where key characteristics of the landscape may be impacted by the Project and could result in major and visually dominant alterations to perceived characteristics of the landscape character area, which may not be fully mitigated by existing landscape elements and features. The degree to which the landscape may accommodate the proposed Project will result in a number of perceived uncharacteristic and significant changes.

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Table 4 – Landscape character area

	Lower Sensitivity		↔		**Higher Sensitivity**
	Low	**Low to Med**	**Medium**	**Med to High**	**High**
Landform and Scale			■		
	The level to very gently inclined agricultural land within, and neighbouring, the project site is a very small portion of the landscape, located in regional Western Victoria. The South West Landscape Assessment Study describes this land as part of the Western Volcanic Plains surrounded by Uplands and Upland islands such as Mt Misery. The Western Volcanic Plains form the largest character type in western Victoria characterised by long views punctuated with volcanic rises such as Mt Callender and Stockyard Hill and beautiful lakes such as Lake Burrumbeet and Lake Goldsmith. The plains are wind swept and largely treeless with shelter belt plantings of Cypress pine and more recently sugar gums. To the north and west of the site rise the Uplands which are part of the Great Divide. Some of these uplands are heavily forested like the Trawalla and Waterloo state forests. Upland islands like those to the northeast of the site are largely devoid of trees though the granite outcrops				

Table 4 – Landscape character area

	Lower Sensitivity		↔		Higher Sensitivity
	Low	**Low to Med**	**Medium**	**Med to High**	**High**
	characteristic of these upland island are dramatic features. The Waubra Wind Farm is sited within this upland island area.				
Landcover		■			
	Landcover is both simple and predictable across the site and surrounding landscape areas. European settlement established an agricultural presence and defines much of the contemporary arable and livestock areas across the project site and beyond. Cropping and pastoral fields create a regular and uniform appearance throughout the seasonal and repetitive operations associated with agricultural production.				
Settlement and human influence			■		
	Settlement is generally dispersed throughout the surrounding landscape and consists largely of farmsteads and individual dwellings. There are limited examples of small scale, historic or vernacular structures within the landscape. The project site is directly south of the dual carriageway Western Highway and the Ararat railway line.				
Movement			■		
	Movement around the project site is dominated by the dual carriageway Western Highway and the Ararat Railway line to the north. To the east, south and west movement generally restricted to local vehicular movements, including cars and trucks travelling along the Kayleys Lane and Trawalla Road and other local roads. Occasional agricultural vehicles are seen within fields, with movement and activity increasing during more intense periods such as harvesting.				
Rarity			■		
	The project site and adjoining landscape are considered to be a relatively common landscape type within a regional context which extends across the western plains district.				
Intervisibility			■		
	The project site does allow for far distant and regional scale views (more significantly toward the north) from flat to very gently inclined areas, but the project site offers no elevated viewpoints. Whilst views can, depending on prevailing climatic conditions, extend toward landscapes with a high visual sensitivity (such as Mt misery, Mt Ercildoune, Mt Cole and other prominent features of the Great Divide), the level of				

Table 4 – Landscape character area

	Lower Sensitivity		↔		Higher Sensitivity
	Low	**Low to Med**	**Medium**	**Med to High**	**High**
	visibility is restricted to landform silhouettes. From far distant and elevated viewpoints the Western plains district provides an extensive and distinctive backdrop. Whilst the Brewster Wind Farm wind turbines would be visible from some elevated areas, the distance between the wind farm and elevated receptor locations would tend to render the wind turbines as generally indistinct features which would occupy a relatively small portion of the overall available view.				
Overall Sensitivity Rating	In consideration of the existing landscape characteristics, the landscape within and surrounding the project site is determined to have a moderate sensitivity to the Project. Distinguishable characteristics of the landscape character area may be altered by the proposed project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed project would potentially result in the introduction of prominent elements to the landscape character area but may be accommodated to some degree.				

Section 9. Zone of Theoretical Visibility

9.1 Zone of Theoretical Visibility (ZTV)

The ZTV diagram is used to identify theoretical areas of the landscape from which wind turbines, or portions of turbines, may be visible within the viewshed. They are useful for providing an overview as to the extent to which the proposed Brewster Wind Farm may be visible from surrounding areas within the viewshed.

9.2 ZTV Methodology

The ZTV methodology is a purely geometric assessment where the visibility of the proposed Brewster wind turbines is determined from carrying out an assessment 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 from blade tips (essentially a view toward any part of the wind turbine rotor, including views toward the tip of the rotor blade. The ZTV assessment methodology is considered to be very conservative as:

- the screening effects of any structures and vegetation above ground level are not considered in any way. Therefore, the wind turbines may not be visible at some locations indicated on the ZTV diagrams due to the local presence of trees or other screening elements.
- additionally, wind turbines visible from any location is also influenced by prevailing weather conditions. Inclement or cloudy weather would tend to mask the visibility of the proposed wind turbines.

Accordingly, while the ZTV diagram is a useful visualisation tool, it is very conservative in nature and the level of visibility as illustrated on the ZTV is unlikely to occur from all view locations within the surrounding viewshed.

A diagram illustrating the tip of blade visibility and the ZTV diagram are shown in **Figures 13** and **14.**

9.3 Visibility

The level of wind turbine visibility of the Project would result from several factors including, but not limited to:

- distance between view location and wind turbine
- directional movement (travelling toward or away from wind turbines)
- relative position and backdrops and
- climatic and atmospheric conditions

9.4 Distance

With an increase in distance the proportion of a person's horizontal and vertical view cone occupied by a visible turbine structure, or group of turbine structures, would decline. **Figure 15** illustrates the effect increasing view distance on the scale and visibility of wind turbines.

As the view distance increases so do the atmospheric effects resulting from dust particles and moisture in the atmosphere, which makes the turbines appear to be grey thus potentially reducing the contrast between the wind turbines and the background against which they are viewed.

9.5 Movement

The visibility of the wind turbines would vary between the categories of static and dynamic view locations. In the case of static views, the relationship between a wind turbine and the landscape would not tend to vary greatly. The extent of vision may be relatively wide as a person would tend to scan back and forth across the landscape where panoramic views are available.

In contrast, views from a moving vehicle are dynamic as the visual relationship between wind turbines is constantly changing as well as the visual relationship between the wind turbines and the landscape in which they are seen. The extent of vision available from a vehicle can be partially constrained by the vehicle interior at proximate distances.

9.6 Relative position

In situations where the view location is at a lower elevation than the wind turbine structure most of it would be viewed against the sky. The degree of visual contrast between a white coloured turbine and the sky would depend on the presence of background clouds and their colour. Dark grey clouds would contrast more strongly with white turbines than a background of white clouds.

The level of contrast is also influenced by the position of the sun relative to the individual wind turbines and the view location. Where the sun is in front of the viewer, the visible portion of the wind turbine would be seen in shadow. Where the background to the wind turbine is dark toned the visual contrast would be reduced.

Where the sun is located behind the view location then the visible portion of the wind turbine would be in full sun. If the background is also light toned, such as white clouds, then the contrast is less when compared to a dark background.

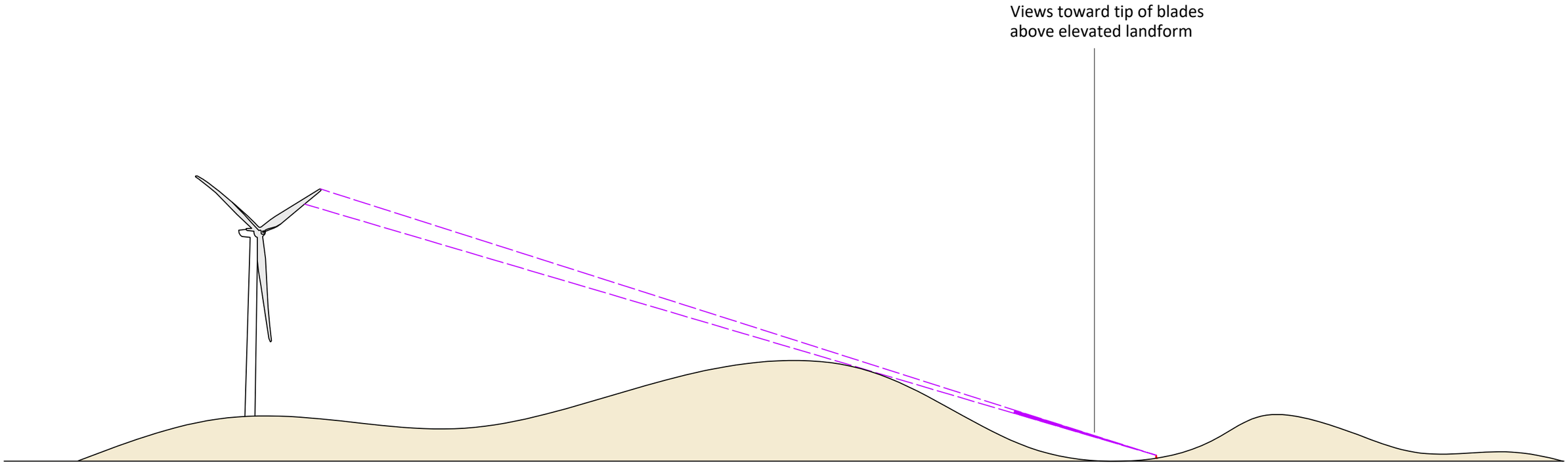
9.7 Climatic and Atmospheric Conditions

Local climatic and atmospheric conditions have the potential to influence the visibility of the Project from surrounding view locations, and more significantly, from middle ground and distant view locations.

Rainfall would tend to reduce the level of visibility toward the Project from several surrounding view locations, with the degree of visibility tending to decrease over distance. Rain periods may also reduce the number of visitors travelling through the areas from which the Project may be visible, and potentially decrease the duration of time spent at a particular public view location with a view toward the Project.

Cloud cover would also tend to reduce the level of visibility of the Project and lessen the degree of contrast between the wind turbine structures and the background against which the wind turbines may be visible.

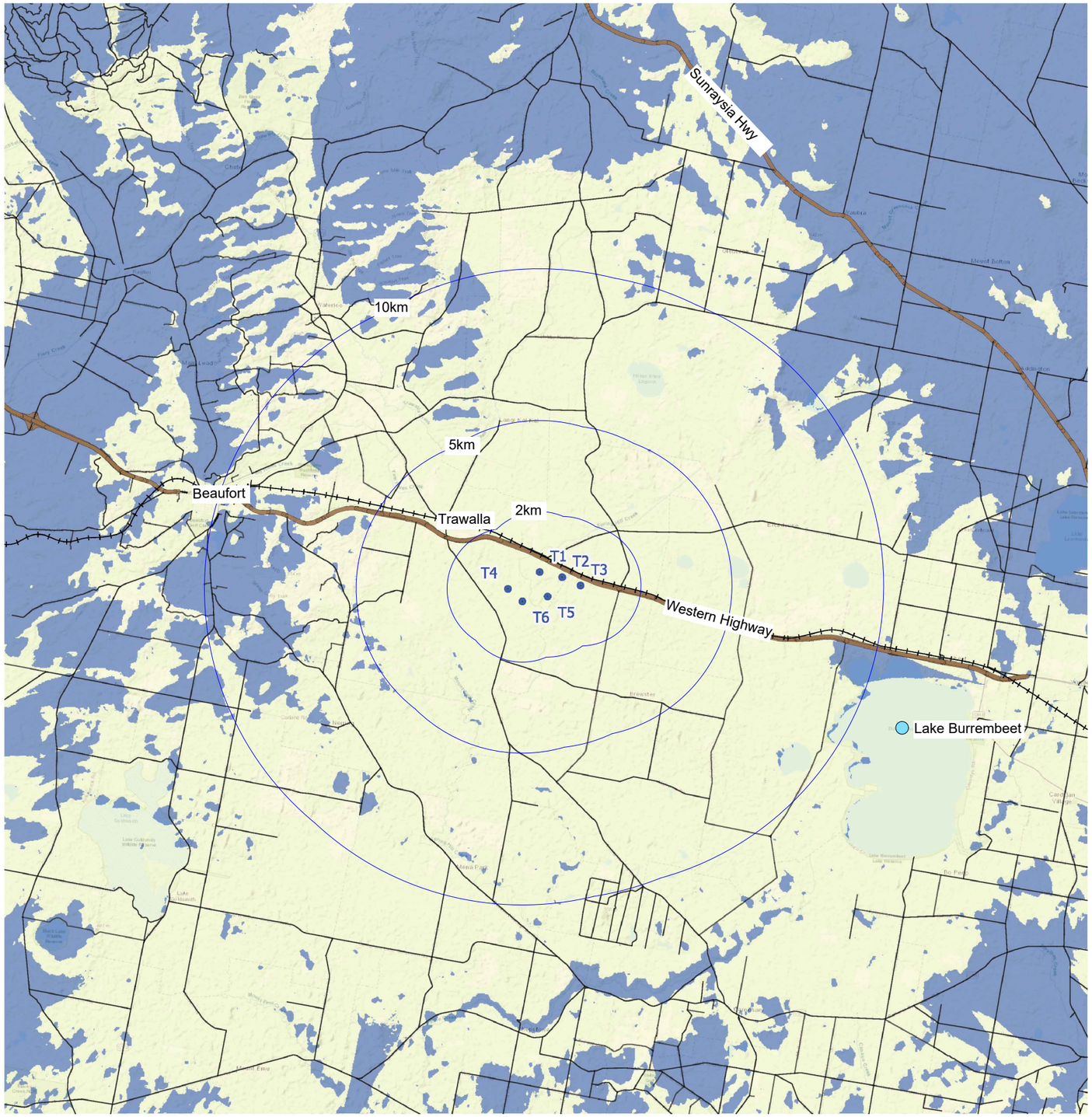
On clear or partly cloudy days, the position of the sun would also influence the degree of visibility of the Project. The degree of effect would be largely dependent on the relationship between the position and angle of the sun relative to the view location. Late afternoon and early evening views toward the west would result in the wind turbines silhouetted above the horizon line, and with increasing distance would tend to reduce the contrast between the wind turbine structures and the surrounding landform.



'Tip of blade'

View toward 'tip of blade' - where views extend toward any part of the turbine including views toward the tip of blades above elevated landform and ridgelines.

Figure 13
Wind turbine visibility



Source: RE Future Pty Ltd, 2022

Legend

- Wind turbine

Wind turbine tips

- Not visible
- Visible

- Highway
- Road
- Lane
- Rail line

0m 4km

Zone of Theoretical Visibility

Figure 14
Zone of Theoretical Visibility

GBD
Landscape architecture

Image 1 Modelled wind turbine 240 metre tip height - view distance 2 km

Image 2 Modelled wind turbine 240 metre tip height - view distance 3 km

Image 3 Modelled wind turbine 240 metre tip height- view distance 4 km

Image 4 Modelled wind turbine 240 metre tip height - view distance 5 km

Modelled wind turbine 240 metre tip height
Photographs: Nikon D700, 50mm prime lens - single frame photo

(All images GBD Pty Ltd 2023)

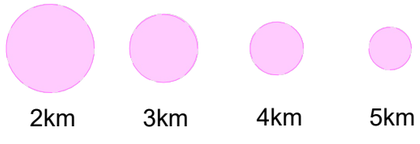


Figure 19
Wind turbine visual magnitude

Section 10. Key views and visual effects

10.1 Introduction

The overall determination of visual effects resulting from the construction and operation of the wind turbines would result primarily from a combination of receptor sensitivity and the magnitude of visual effects.

A determination of visual effects from the combination of receptor sensitivity and the magnitude of visual effect is a well-established methodology and has been applied extensively on wind farm LVIA in Victoria and across Australia. The standard methodology is set out in industry and best practice guidelines including the Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute, and Institute of Environmental Management & Assessment, 2013 – Chapter 6 Assessment of visual effects.

10.2 Sensitivity of visual receivers

Judging the sensitivity of visual receivers needs to consider the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest is focussed on views toward the wind turbines or electrical infrastructure within and surrounding the Project site.

10.3 Magnitude of visual effects

Judging the magnitude of visual effects has considered the:

- Distance and resultant scale of the change in the view with respect to the loss or addition of features in the view
- Changes in landscape composition, including the proportion of the view occupied by the Project
- Degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line height, colour, and texture
- Nature of the view of the proposed development, in terms of the relative amount of time over which it would be experienced and
- Whether views from receiver locations would be screened to any degree by existing vegetation or other above ground structures.

View distance and the resultant change in wind turbine scale is illustrated in **Figure 15.** Wind turbines at around 4km view distance are clearly visible; however, the overall wind turbine scale presents a less dominant visual element within the available field of view. As the overall scale of wind turbine structures dimmish with distance the greater the potential for screening where trees are located between the receiver and the wind turbine. The overall height of planting required to screen wind turbines decreases as it moves nearer to the receiver.

Tables 5 and **6** set out definitions and criteria for sensitivity and magnitude.

The combination of sensitivity and magnitude would provide the rating of visual effect for viewpoints. **Table 7** sets out the relative visual impact grading values which combines issues of sensitivity and magnitude for the project.

Table 5 – Receiver location sensitivity

View Category	Sensitivity
Dwellings	***Highest Sensitivity***
Areas of high scenic value (National Parks or designated landscapes)	
Public recreational areas/lookouts	
Rural employment/farming	
Motorists	
Business (commercial)	
Industrial areas	*Lower Sensitivity*

Table 6 – Magnitude assessment criteria

Criteria	Definition
Distance	
Very short	<1.5 km
Short	1.5 km – 3 km
Moderate	3 km – 5 km
Long	5 km+
Duration of effect	
High	> 2 hours
Moderate	30 – 120 minutes
Low	10 – 30 minutes
Very low	< 10 minutes
Degree of screening	
High	Screening effectively blocks views toward wind turbines
Moderate	Screening partially screens views toward wind turbines
Low	Screening filters some views toward wind turbines
Very low	Limited or no screening toward wind turbines

An overall determination of visual effect at each receiver location has also been assessed and determined against the visual impact grading matrix in **Table 7** below. The levels of sensitivity and magnitude of visual effects outlined in **Table 7** are **used as a guide** to determine levels of visual effect and are not absolute.

Whilst a receiver location may have both a high sensitivity and high magnitude, which result in a high visual effect; the visual effect may be offset and mitigated by screening, through tree cover or intervening landform surrounding or beyond the receiver location.

Dwelling locations are illustrated in **Figure 16**. Non-dwelling structures, such as agricultural sheds, within 5km of the proposed wind turbines have not been assessed.

Table 7 Visual effect grading matrix

			Scale or magnitude of visual effects			
			High	Moderate	Low	Negligible
			Very short distance view over a long duration of time. A high extent of wind turbine visibility would tend to dominate the available skyline view and significantly disrupt existing views or vistas. Total loss or major change to pre-development view or introduction of elements which are uncharacteristic to the existing landscape features.	Short to medium distance views over a medium duration of time. A moderate extent of wind turbine visibility would have the potential to dominate available views with visibility recessing over increasing distance. Partial alteration to pre-development view or introduction of elements that may be prominent but not uncharacteristic with the existing landscape.	Medium to long distance views over a low to medium duration of time. Wind turbines in views, at long distances or visible for a short duration not expected to be significantly distinct in the existing view. Minor alteration to pre-development view or introduction of elements that may not be uncharacteristic with the existing landscape.	Visible change perceptible at a very long distance, or visible for a very short duration, and/or is expected to be less distinct within the existing view. Very minor loss or alteration to pre-development view or introduction of elements which are not uncharacteristic with the existing landscape features.
Sensitivity of visual receptor		**Indicator**				
	High	People with a proprietary interest and prolonged viewing opportunities such as those in dwellings or visitors to attractive and/or well-used recreational facilities. Views from a regionally important location whose interest is specifically focussed on the landscape e.g., from lookouts or areas within National Parks.	High	High-moderate	Moderate	Negligible
	Moderate	People with an interest in their environment e.g., visitors to environmental areas, bush walkers, and horse riders etc…those travelling with an interest in their surroundings	High-moderate	Moderate	Moderate-low	Negligible
	Low	People with a passing interest in their surroundings e.g., those travelling along local roads between townships, or people whose interest is not specifically focussed on the wider landscape e.g., service providers or commuters.	Moderate	Moderate-low	Low	Negligible
	Negligible	People with no specific interest in their surroundings or those with occasional and transient views travelling at speed along highways or from a place of work where attention may not be focussed on surrounding views.	Negligible	Negligible	Negligible	Negligible

10.4 Views from key landscape receptors

The Pyrenees Shire Planning Scheme does not identify key view situations within the municipal area that are subject to planning considerations with potential visual amenity value. However, the Shire website does describe the tourism and landscape values of following locations:

- Mount Buangor State Park
- Mt Cole State
- Park Pyrenees State Forest and
- St Arnaud National Park.

The locations of these state parks are illustrated in Figure 1 which indicates that the closest wind turbine would be located within the order of 20km from these view locations. At this distance it is unlikely that the proposed Brewster wind turbines would result in any significant level of visual impact and would not be readily discernible depending on climatic conditions.

The South West Landscape Assessment Study, 2013 identifies Mount Misery, Mt Ercildoune, Mt Bolton and Mt Beckworth to the north and Mt Emu to the south as Upland Islands of regional high significance landscapes. The Mount Misery and associated peaks are between 10 and 20km northeast of the project site and whilst these features may be viewed simultaneously with the Brewster Wind Farm the potential for any significant level of direct and indirect cumulative impact would be mitigated separation distance. Mt Emu is located over 15km south of the project and will not be impacted visually by the Brewster Wind Farm.

Table 8 Visual effect grading – key landscape receptors

Sensitivity of visual receiver	High
Magnitude of visual effects	Negligible
Visual Effect	Negligible

10.5 Views from townships and localities

Regional Cities, Townships and Localities within the landscape surrounding the Brewster Wind Farm include:

- Trawalla hamlet (around 3km west of the wind turbine locations)
- Trawalla rural living zone (around 3.5km west of the wind turbine locations) and
- Beaufort (over 9km west of the turbine locations).

Whilst wind turbines are theoretically visible over the distances to populated, views toward the wind turbines would be partially restricted by development and built structures within urban areas. Potential views toward the wind turbines would also tend to be disrupted by discrete areas of vegetation both within and beyond urban and peri-urban areas.

It is unlikely that the wind turbines would have any significant visual impact on people within regional cities, townships and localities surrounding the proposed wind turbines.

Table 9 Visual effect grading – Townships

Sensitivity of visual receiver	High
Magnitude of visual effects	Negligible
Visual Effect	Negligible

10.6 Views from the highway, railway and local roads

The main roads and railway as illustrated in Figure 2 include the Western Highway as well as several local roads largely orientated north to south and east to west. The Brewster wind turbines would only be partially visible from some sections of the Western Highway and views from some local roads would be influenced by vegetation and tree planting alongside road corridors. When traveling in a westerly direction the wind farm will become dominant feature within the 5km view shed. This is due to the open nature of the landscape and the relatively low number of roadside plantings along the Western Highway and railway corridors. When traveling to the east the orientation of the highway is not always in a direct line of site the to the wind farm. With the addition of hilly landforms and roadside vegetation wind farm will only be dominant for a short distance.

The dynamic and constantly changing nature of views from vehicles and trains travelling along roads and the railway corridor would also tend to be transitory in nature and generally short term; however, views from local roads are likely to offer proximate and direct views toward each wind turbine. As the sensitivity of receptors travelling along highways, local roads and rail corridors tends to be low, in combination with the generally short duration of views, the overall visual impact from the highway, local roads and railway is likely to be moderate from proximate views.

Table 10 Visual effect grading – highways and railway

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Effect	Moderate

Table 11 Visual effect grading – local roads

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Effect	Moderate

10.7 Views from agricultural land

The proposed Brewster Wind Farm may have the potential to impact people engaged in predominantly farming activities, where views toward wind turbines occur from surrounding and non-associated agricultural areas. Ultimately the level of impact would depend on the type of activities engaged in as well as the location of the activities together with the degree of screening provided by local vegetation within individual properties. Whilst views toward the turbines would occur from a wide area of surrounding rural agricultural land, this LVIA has determined that the sensitivity of visual impacts is less for those employed or carrying out work in rural areas compared to potential views from dwellings; however, the sensitivity of individual view locations would also depend on the perception of the viewer.

Table 12 Visual effect grading – agricultural land

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Effect	Moderate - low

10.8 Views from publicly accessible locations

Publicly accessible locations, other than road corridors, include various public open spaces, recreational areas, reserves or public meeting places. Most public open spaces and recreational areas are those associated and located within surrounding urban localities, where the influence of both distance and existing vegetative cover is likely to screen any potential views toward the Brewster Wind Farm site.

Table 13 Visual effect grading – publicly accessible locations

Sensitivity of visual receiver	Low
Magnitude of visual effects	Low
Visual Effect	Low

10.9 Views from dwellings within 5km of wind turbines

Existing dwellings are illustrated in Figure 16 and include dwellings on properties that are not associated with the proposed Project as well as those that are. For this LVIA associated dwellings have not been included in the assessment.

The site inspection noted that several dwellings within the landscape surrounding the wind turbines are screened by tree and/or windbreak shelter planting. It is possible that not all dwellings would have direct or significant views toward the proposed Brewster wind turbines. An assessment of the potential visual effect of wind turbines within 5km of dwellings surrounding the project site is presented in Table 14.

Dwelling locations

Legend

- Wind turbines
- Viewshed
- Langi Kal Kal Prison
- Highway
- Road
- Rail line

0m 1km

GBD
Landscape architecture

Figure 16
Dwelling locations

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Neighbour Dwellings within 5km of a Brewster wind turbine							
R3 Dwellings located east of Kayleys Lane	Non-associated landowner Sensitivity: High	1.59km	High	High	High	Short distance and direct views extend west from the dwellings and curtilage toward wind turbines within the project site. Views toward the wind turbines would be partially filtered and/or screened by tree planting surrounding the dwelling. Degree of existing screening at dwelling: Moderate to High	Moderate to High
R4 Dwelling located west of Kayleys Lane	Non-associated landowner Sensitivity: High	1.51km	High	High	High	Short distance and direct views extend from the dwelling and curtilage in a north west to west direction toward wind turbines within the project site. Views toward wind turbines within the north west to south west portions of the project site would be partially filtered	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						and/or screened by tree planting surrounding and beyond the dwelling. Degree of existing screening at dwelling: Moderate	
R6 Dwelling located on Pin Oak Court adjacent to Western Highway	Non-associated landowner Sensitivity: High	1.15km	High	High	High	Short distance and direct views extend from the dwelling and curtilage in an east to south direction toward wind turbines. Views toward the wind turbines would be partially filtered and/or screened by tree planting / shelter belt surrounding the dwelling. Degree of existing screening at dwelling: Moderate	Moderate
R7	Non-associated landowner Sensitivity: High	1.05km	High	High	High	Short distance and direct views extend from the dwelling and curtilage in a south east direction toward wind turbines within site. Views toward the wind turbines would be substantially	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located north of Scullin Road						filtered and/or screened by tree planting surrounding the dwelling. Degree of screening at dwelling: Very High	
R08 Dwelling located south side Ercildoune Road	Non-associated landowner Sensitivity: High	1.36km	High	High	High	Short distance views east toward the wind turbines may be subject to some partial filtering by tree planting to the west and south of the dwelling. Portions of the wind turbines may be visible from areas to the south of the dwelling curtilage. Degree of screening at dwelling: Moderate	Moderate to High
R09	Non-associated landowner Sensitivity: High	1.73km	High	High	High	Dwelling not visible from Road. Short distance views west toward the wind turbines may be subject to some limited partial filtering by tree cover to the south of the dwelling. Portions of the wind	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling east side of Black Bottom Road						turbines may be visible from areas to the south of the dwelling curtilage. Degree of screening at dwelling: Moderate	
R10 Dwellings located east of Kayleys Lane	Non-associated landowner Sensitivity: High	2.39km	High	High	High	Short distance and direct views extend west from the dwellings and curtilage toward wind turbines within the project site. Views toward the wind turbines would be unscreened. Dwelling is unused by landowner. Degree of existing screening at dwelling: None	Moderate
R11 Dwelling located east of Kayleys Lane	Non-associated landowner Sensitivity: High	2.37km	High	High	High	Short distance and direct views extend from the dwelling and curtilage in a north west direction toward wind turbines within the project site. Views toward the wind turbines would be filtered and/or screened by tree planting	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						surrounding the dwelling and large Cyprus pines along the roadside. Degree of existing screening at dwelling: High	
R12 Dwelling located west of Kayleys Lane	Non-associated landowner Sensitivity: High	2.94km	High	High	High	Moderate distance views north west toward the wind turbines may be subject to screening and some partial filtering by tree planting to the north of the dwelling. Portions of the wind turbines may be visible from areas to the west of the dwelling curtilage. Degree of screening at dwelling: Moderate	Moderate
R13	Non-associated landowner Sensitivity: High	3.02km	High	High	High	Moderate distance views north west toward the wind turbines are subject to screening and some partial filtering by mature pines to the north of the dwelling as well as scattered tree planting	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located south of Trawalla East Road						beyond. Portions of the wind turbines may be visible from areas to the west of the dwelling curtilage. Degree of screening at dwelling: Moderate	
R14 Dwelling located south of Trawalla East Road	Non-associated landowner Sensitivity: High	2.79km	High	High	High	Moderate distance views north toward the wind turbines are be subject to filtering by mature pines adjoining the dwelling as well as scattered tree planting beyond the dwelling. Portions of the wind turbines may be visible from areas to the east and west of the dwelling curtilage. Degree of screening at dwelling: High	Low to Moderate
R15	Non-associated landowner	2.77km	High	High	High	Moderate distance and direct views extend from the dwelling and curtilage in a northly direction toward wind turbines within the project site. Views are likely	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located south of Trawalla East Road	Sensitivity: High					to be restricted to upper portions of the turbine structures (nacelle and blades) by tree cover to the north of the dwelling. Degree of existing screening at dwelling: Moderate	
R16 Dwelling located north of Trawalla East Road	Non-associated landowner Sensitivity: High	2.39km	High	High	High	Moderate distance views north toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings have little filtering by surrounding tree planting. Degree of screening at dwelling: Low	Moderate to High
R17	Non-associated landowner	2.53km	High	High	High	Moderate distance views north-east to toward the wind turbines have no filtering by tree planting surrounding the	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located east of Trawalla Road	Sensitivity: High					dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be partially filtered by surrounding blue gum forest. Degree of screening at dwelling: Low	
R18 Dwelling located north of the Black Bottom Road	Non-associated landowner Sensitivity: High	2.49km	High	High	High	Moderate distance views south -west to toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be partially filtered by surrounding tree planting. Degree of screening at dwelling: Moderate to High	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R19 Dwelling located north of the Black Bottom Road	Non-associated landowner Sensitivity: High	2.44km	High	High	High	Moderate distance views south -west to toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be partially filtered by surrounding tree planting. Degree of screening at dwelling: High	Moderate
R20 Dwelling located west of the Black Bottom Road	Non-associated landowner Sensitivity: High	3.5km	High	High	High	Moderate distance views south toward the wind turbines may be subject to some partial filtering by tree planting beyond the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwelling would also be partially filtered by surrounding tree planting. Degree of screening at dwelling: High	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R21 Dwelling located south of Ercildoun Road	Non-associated landowner Sensitivity: High	4.07km	High	High	High	Moderate distance views south-west to toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwelling would also be partially filtered by surrounding tree planting. Degree of screening at dwelling: Low to Moderate	Low
R22 Dwelling located north of Western Highway	Non-associated landowner Sensitivity: High	3.71km	High	High	High	Moderate distance views west toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be highly filtered by surrounding tree planting.	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: High	
R23 Dwelling located south of Western Highway	Non-associated landowner Sensitivity: High	3.64km	High	High	High	Moderate distance views west toward the wind turbines may be subject to some partial filtering by tree planting and buildings surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be partially filtered by surrounding tree planting. Degree of screening at dwelling: Low	Low to Moderate
R24 Dwelling located east of Trawalla Road	Non-associated landowner Sensitivity: High	3.11km	High	High	High	Moderate distance views north toward the wind turbines may be subject to some partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwellings would also be partially filtered by surrounding tree planting.	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: High	
R25 Dwelling located south west of Trawalla Road	Non-associated landowner Sensitivity: High	3.04km	High	High	High	Moderate distance views north east from the dwelling toward the wind turbines would be largely unscreened by tree planting to the east of the dwelling. Views from the dwelling curtilage would also be partially screened and or filtered by scattered tree planting beyond the dwelling and sheds. Degree of screening at dwelling: Low	Moderate
R26 Dwelling located east of Trawalla Road	Non-associated landowner Sensitivity: High	2.03km	High	High	High	Short distance views east to south east from the dwelling toward the wind turbines would be largely unscreened by tree planting to the east of the dwelling. Views from the dwelling curtilage would also be partially screened and or filtered by scattered tree planting beyond the dwelling and sheds.	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low	
R27 Dwelling located west of Trawalla Road	Non-associated landowner Sensitivity: High	2.29km	High	High	High	Short distance views east from the dwelling toward the wind turbines would be unscreened by tree planting to the east of the dwelling. Views from the dwelling curtilage would also be unscreened. Degree of screening at dwelling: Low	Moderate
R28 Trawalla Primary School located east of Trawalla Road	Non-associated Sensitivity: High	2.83km	High	High	High	Moderate distance views to the south east from the school toward the wind turbines would be partially screened by rising landform and tree planting to the east of the school. Views from the grounds would also be partially screened and or filtered by scattered tree planting and sheds.	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Moderate to High	
R29 Dwelling located north Western Highway	Non-associated landowner Sensitivity: High	2.74km	High	Moderate	High	Moderate distance views to the south east from the dwelling toward the wind turbines would be partially screened by tree planting along the Western Highway corridor. Mt Ross also south east from the dwelling will partially screen the wind turbines. Degree of screening at dwelling: Moderate	Low
R30 Dwelling located north Western Highway	Non-associated landowner Sensitivity: High	2.79km	High	High	High	Moderate distance views to the south east from the dwelling toward the wind turbines would be largely screened by tree planting on the property. Views from the dwelling curtilage would also be partially screened and or filtered by scattered tree planting beyond the	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						dwelling along the Western Highway corridor Degree of screening at dwelling: High	
R31 Dwelling located east of Langi Kal Kal Road	Non-associated landowner Sensitivity: High	3.41km	High	High	High	Moderate distance views to the south east from the dwelling toward the wind turbines would be largely screened by tall pines adjacent to the dwelling. Views from the dwelling curtilage would also be partially screened and or filtered by scattered tree planting beyond the dwelling. Degree of screening at dwelling: Moderate	Low
R32	Non-associated landowner Sensitivity: High	4.23km	High	High	High	Moderate distance views south from the dwelling toward the wind turbines would be screened by tree planting to the south of the dwelling. Views from the dwelling curtilage would also be partially	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located west of Black Bottom Road						screened and or filtered by scattered tree planting and sheds beyond the dwelling. Degree of screening at dwelling: High	
R33 Dwelling located east of Black Bottom Road	Non-associated landowner Sensitivity: High	4.35km	High	High	High	Moderate distance views south from the dwelling toward the wind turbines would be screened by tree planting to the south of the dwelling. Views from the dwelling curtilage would also be largely screened tree planting and sheds beyond the dwelling. Degree of screening at dwelling: High	Low
R34 Dwelling located south of Ercildoun Road	Non-associated landowner Sensitivity: High	4.55km	High	High	High	Moderate distance views south - south west from the dwelling toward the wind turbines would be unscreened. Views from the dwelling curtilage would also be unscreened.	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low	
R35 Dwelling located north of Trawalla East Road	Non-associated landowner Sensitivity: High	4.61km	High	High	High	Moderate distance views west from the dwelling toward the wind turbines would be largely screened by tree planting beyond the dwelling. Views from the dwelling curtilage would also be generally screened by trees and buildings toward the project site. Degree of screening at dwelling: High	Low
R36 Dwelling located west of Trawalla Road	Non-associated landowner Sensitivity: High	3.45km	High	High	High	Moderate distance views north-east from the dwelling toward the wind turbines would be largely screened by forest beyond the dwelling. Views from the dwelling curtilage are generally open and extend away from the project site. Degree of screening at dwelling: Moderate to High	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R37 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	4.12km	High	High	High	Moderate distance views east to toward the project site would be direct with limited tree planting surrounding or beyond the dwelling curtilage. Degree of screening at dwelling: Low	Moderate
R38 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.57km	High	High	High	Moderate distance views east from the dwelling toward the wind turbines would be partially screened by large trees east of the dwelling. Views from the dwelling curtilage would be generally open toward the project site. Degree of screening at dwelling: Moderate	Low to Moderate
R39	Non-associated landowner Sensitivity: High	3.71km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located west of Church Road						been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R40 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.76km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate
R41 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.77km	High	High	High	Moderate to long distance views east to south east from the dwelling toward the project site would be screened with some lower portions of turbines screened by landform. As part of a new rural living estate little or no trees have been	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						established; however, a block of tree planting extends north to south along the east side of Church Road providing potential future screening. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R42 Dwelling located east of Langi Kal Kal Road	Non-associated landowner Sensitivity: High	2.96km	High	High	High	Moderate distance views east from the dwelling toward the wind turbines would be partially screened by rising landform and tree cover. This dwelling is the ex roadhouse servicing the Western Highway before duplication and is generally orientated away from the Project. Degree of screening at dwelling: None	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R43 Dwelling located east of Langi Kal Kal Road	Non-associated landowner Sensitivity: High	2.99km	High	High	High	Moderate distance views east from the dwelling toward the wind turbines would be partially screened by tree planting surrounding and the dwelling. Views from the dwelling curtilage would also be partially screened and or filtered by scattered tree planting beyond the dwelling partially in the west. Degree of screening at dwelling: Low	Low
R44 Dwelling located west of Langi Kal Kal Road	Non-associated landowner Sensitivity: High	3.38km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R45 Dwelling located west of Langi Kal Kal Road	Non-associated landowner Sensitivity: High	3.06km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Orientation of the Dwelling is north and south away from the wind farm. Views from the dwelling would be partially screened. Views from the dwelling curtilage would also be partially screened toward the project site. Degree of screening at dwelling: Moderate	Low
R46 Dwelling located east of Kayleys Lane	Non-associated landowner Sensitivity: High	1.64km	High	High	High	Short distance and direct views extend west from the dwellings and curtilage toward wind turbines within the project site. Views toward the wind turbines would be partially filtered and/or screened by tree planting surrounding the dwelling.	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of existing screening at dwelling: Moderate to High	
R47 Dwelling located north of Trawalla East Road	Non-associated landowner Sensitivity: High	4.57km	High	High	High	Moderate distance views west from the dwelling toward the wind turbines would be largely screened by tree planting beyond the dwelling. Views from the dwelling curtilage would also be generally screened by trees and buildings toward the project site. Degree of screening at dwelling: High	Low
R48 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.92km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site.	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: None	
R49 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.93km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate
R50 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.94km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R51 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.87km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate
R52 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.85km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R53 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	3.84km	High	High	High	Moderate distance views east to toward the wind turbines have filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the are also screened by trees Degree of screening at dwelling: Moderate	Low to Moderate
R54 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	3.99km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R55 Dwelling located south of Baldwins Road	Non-associated landowner Sensitivity: High	4.25km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate
R56 Dwelling located south of Baldwins Road	Non-associated landowner Sensitivity: High	4.65km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R57 Dwelling located south of Baldwins Road	Non-associated landowner Sensitivity: High	4.63km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible
R58 Dwelling located south of Baldwins Road	Non-associated landowner Sensitivity: High	4.97km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R59 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	4.96km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Orientation of the dwelling is north south and away and from the wind farm. Views from the dwelling would be partially screened. Views from the dwelling curtilage would also be partially screened toward the project site. Degree of screening at dwelling: Moderate	Moderate
R60 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	4.83km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Orientation of the dwelling is north south and away and from the wind farm. Views from the dwelling would be partially screened. Views from the dwelling curtilage would	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						also be partially screened toward the project site. Degree of screening at dwelling: Moderate	
R61 Dwelling located south of Baldwins Road	Non-associated landowner Sensitivity: High	4.83km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible
R62 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	4.62km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Orientation of the dwelling is northeast to southwest and away from the wind farm. Views from the dwelling would be partially screened.	Low

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Views from the dwelling curtilage would also be partially screened toward the project site. Degree of screening at dwelling: Low	
R63 Dwelling located north of Baldwins Road	Non-associated landowner Sensitivity: High	4.34km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Orientation of the Dwelling is northwest and southeast away from the wind farm. Views from the dwelling would be partially screened. Views from the dwelling curtilage would also be partially screened toward the project site. Degree of screening at dwelling: Moderate	Low to Moderate
R64	Non-associated	4.21km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located south of Western Highway	landowner Sensitivity: High					rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R65 Dwelling located west of Church Road	Non-associated landowner Sensitivity: High	3.84km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Moderate
R66	Non-associated landowner Sensitivity: High	4.33km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located south of Western Highway						dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R67 Dwelling located east of Tansey Court	Non-associated landowner Sensitivity: High	4.50km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	Low to Moderate
R68 Dwelling located east of Tansey Court	Non-associated landowner Sensitivity: High	4.54km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R69 Dwelling located north of Tansey Court	Non-associated landowner Sensitivity: High	4.65km	High	High	High	Moderate distance views east to toward the wind turbines have partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwelling are also partially screened. Degree of screening at dwelling: Low	Low to Moderate
R70 Dwelling located south of Tansey Court	Non-associated landowner Sensitivity: High	4.60km	High	High	High	Moderate distance views east to toward the wind turbines have partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						surrounding the dwelling are also partially screened. Degree of screening at dwelling: Moderate	
R71 Dwelling located north of Tansey Court	Non-associated landowner Sensitivity: High	4.78km	High	High	High	Moderate distance views east to toward the wind turbines have partial filtering by tree planting surrounding the dwelling. Views toward the wind turbines from the general curtilage surrounding the dwelling are also partially screened. Degree of screening at dwelling: Moderate	Low to Moderate
R73	Non-associated landowner Sensitivity: High	3.81km	High	High	High	Moderate to long distance views east from the dwelling toward the project site would be unscreened. As part of a new rural living estate little or no trees have been established. Views from the	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwelling located west of Church Road						dwelling curtilage would also be generally open toward the project site. Degree of screening at dwelling: None	
R74 Dwelling located south of Baldwin Road	Non-associated landowner Sensitivity: High	4.79km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would also be generally screened toward the project site. Degree of screening at dwelling: High	Negligible
R75 Dwelling located west of Tansey Court	Non-associated landowner Sensitivity: High	4.79km	High	High	High	Moderate distance views east from the dwelling extend toward wind turbines within the project site. Views from the dwelling would be completely screened. Views from the dwelling curtilage would	Negligible

Table 14 – Dwelling visual effect matrix (Refer Figure 16 for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receptor location	Category of receptor location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Extent of visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						also be generally screened toward the project site. Degree of screening at dwelling: High	

10.10 Summary of the dwelling visual effect (within 5km of wind turbines)

This LVIA identified a combined total of 71 non-associated dwellings within the Brewster Wind Farm 5km viewshed.

An assessment of dwellings determined:

- 5 of the 71 dwelling locations would have a Moderate to High visual effect
- 29 of the 71 dwelling locations would have a Moderate visual effect
- 13 of the 71 dwelling locations would have a Low to Moderate visual effect
- 17 of the 71 dwelling locations would have a Low visual effect and
- 7 of the 71 dwelling locations would have a negligible effect.

The field assessment for most dwelling locations 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 dwelling. It is anticipated that some visibility ratings would be less than those determined subject to a process of verification of existing screening from private property.

10.11 Summary of dwelling visual effect (beyond 5km of wind turbines)

Most dwellings located beyond the 5km wind turbine offset are unlikely to be significantly impacted by the wind turbines. Dwellings beyond 5km include varying degrees of tree planting within proximity to dwellings which may offer greater screening significance as distance from the wind turbines increases.

10.12 Switchyard

The project would incorporate a switchyard connected by a single circuit 66kV transmission line.

The switchyard would be located on existing agricultural land within the project site adjacent to the Western Highway and close to T4.

The switchyard footprint would be approximately 40m x 30m and would contain a typical arrangement of electrical infrastructure components including overhead gantry and busbars. The switchyard would also include a switchyard control room. This would be generally single storey small-scale building within the switchyard footprint surrounded within a gated chainmesh security fence.

The switchyard associated buildings and electrical infrastructure would not be out of character with other moderate to large scale agricultural and existing electrical infrastructure located within the landscape surrounding the project site.

10.13 Visual Absorption Capability

Visual Absorption Capability (VAC) is a classification system used to describe the relative ability of the landscape to accept modifications and alterations without the loss of landscape character or deterioration of visual amenity. VAC relates to physical characteristics of the landscape that are often inherent and often quite static in the long term. The visual expanse of the agricultural landscape occasionally interrupted by scattered and groups of trees will have a moderate to high capability to visually absorb the switchyard without significantly altering the character of the landscape.

A moderate to high VAC would tend to mitigate views toward the switchyard where the proposed structures would be viewed against an expansive agricultural landscape.

10.14 Switchyard visual effect

This LVIA has considered and assessed potential view locations within the vicinity of the switchyard. The switchyard may be viewed fleetingly from either east or westward travel along the Western Highway. The visual magnitude of the switchyard structures would not result in significant visual effects as viewed passing motorists.

10.15 Section of overhead powerline

All powerlines on the site are underground except for a small section spanning Spring Hill creek. This span will be 450m in length and supported by a concrete pole at each end. The concrete poles will be 20m high and may require triangulated support cable stays depending on final engineering.

10.16 Overhead powerline visual effect

The small section of powerline will be like any other distribution powerline found in the rural landscape. At 1.8km to the nearest dwelling and approximately 1km from the nearest road the powerline and associated poles will generally not be noticed by neighbours or passing traffic.

Section 11. Cumulative impact assessment

11.1 What is Cumulative Impact Assessment?

A cumulative landscape and visual impact may result from a wind farm being constructed in conjunction with other existing or proposed wind farms or other large-scale infrastructure projects and may be either associated or separate to it.

Separate wind farm or other developments may occur within the established viewshed of the proposed wind farm or may be located within a regional context where visibility is dependent on a journey between each site or project viewshed.

'Direct' cumulative visual impacts may occur where two or more winds farms or other infrastructure projects have been constructed within the same locality and may be viewed from the same view location simultaneously.

The Brewster wind turbines are likely be visible from view locations where both the proposed Brewster and constructed Waubra wind turbines are visible within the same field of view. These view locations, including potential sensitive dwellings, would tend to be located either proximate to one of the wind farms and at a greater distance from the other, or more distant locations from either wind farm. It is therefore unlikely that 'direct' views toward wind turbines within each wind farm would result in a significant magnitude of visual effect.

'Indirect' cumulative visual impacts may occur where two or more wind farms or other infrastructure projects have been constructed within the same locality and may be viewed from the same view location but not within the same field of view (i.e., the viewer turns their head to view both wind farms).

'Indirect' views between the Brewster and Waubra wind turbines are likely to occur from view locations situated between both wind farms, where the most proximate views would be around 5km to either site.

'Sequential' cumulative visual impacts may arise because of multiple wind farms or other infrastructure projects being observed at different locations during the course of a journey (e.g., from a vehicle travelling along a highway or from a network of local roads), which may form an impression of greater magnitude within the construct of short-term memory.

The Brewster and Waubra wind turbines would be visible from vehicles travelling east or west along sections of the Western Highway, or from a combination of local roads either side of the highway. Views from vehicles would be transitory and generally short term. Overall, all cumulative visual impacts would be mitigated by the very small number of wind turbines within the project site reducing the extent of visual influence and potential for cumulative visual impacts to occur.

The distances between the Brewster Wind Farm and Stockyard Wind Farm (around 8.5km), and the Chepstowe Wind Farm (around15km) would limit any potential direct or indirect visual impacts. The significance for sequential visual impacts would also be limited by distance as well as the small number of wind turbines within the Brewster wind farm project.

Section 12. Pre-construction and construction

12.1 Potential visual impacts

There are potential visual impacts that could occur during both pre-construction and construction phases of the project. The Project construction phase is likely to occur over a period of around 12 months, although the extent and nature of pre-construction and construction activities would vary at different locations within the Project area.

The key pre-construction and construction activities that would be visible from areas surrounding the proposed wind farm include:

- ongoing detailed site assessment including sub surface geotechnical investigations
- various civil works to upgrade local roads and access point
- temporary construction compound buildings and facilities
- temporary construction facilities, including portable structures and laydown areas
- various temporary construction and directional signage
- mobilisation of rock crushing equipment and concrete batching plant (if required)
- excavation and earthworks and
- various construction activities including erection of wind turbines, monitoring mast and electrical infrastructure works.

Most of the pre-construction and construction activities, some of which would result in physical changes to the landscape (which have been assessed in this LVIA report), are generally temporary in nature and for the most part restricted to various discrete areas within or beyond the immediate wind farm site. Most pre-construction and construction activities would be unlikely to result in an unacceptable level of visual impact for their duration and temporary nature. The following images illustrate typical construction activities during preparation and installation of wind turbines:

Plate 1 Cable laying equipment

Plate 2 Typical crane plant utilised in wind turbine construction

Plate 3 Typical storage and laydown area

Plate 4 Typical contractors site office and amenities compound

Plate 5 Typical view toward wind turbines under construction

Section 13. Mitigation measures

13.1 Mitigation measures

The British Landscape Institute states 'the purpose of mitigation is to avoid, reduce, or where possible remedy or offset any significant negative (adverse) effects on the environment arising from the proposed development' (2012). In general mitigation measures would reduce the potential visual impact of the project in one of two ways:

- firstly, by reducing the visual prominence of the wind turbines and associated structures by minimising the visual contrast between the wind turbines and the landscape in which they are viewed; and
- secondly, by screening views toward the wind turbines from specific receptor locations.

The mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the proposed structures and the surrounding landscape, and/or screening direct views toward the proposed wind turbines where possible.

13.2 Detail design

Mitigation measures during the detail design process should consider:

- further refinement in the design and layout if necessary to assist in the mitigation of bulk and height of proposed structures
- consideration in selection and location for tree planting which may provide partial screening or backdrop setting for constructed elements (excluding wind turbine structures) and
- a review of materials and colour finishes for selected components including the use of non-reflective finishes to structures where possible.

13.3 Construction

Mitigation measures during the construction period should consider actions to:

- avoidance of temporary light spill beyond the construction site where temporary lighting is required and
- progressively rehabilitate disturbed areas.

13.4 Operation

Mitigation measures during the operational period should consider:

- ongoing maintenance and repair of constructed elements
- replacement of damaged or missing constructed elements.

13.5 On-site and off-site landscape works

Both on-site and offsite landscape works would be actively considered to reduce the visual impact of the wind turbines and associated ancillary infrastructure where determined to result in a Moderate High or High visual effect on uninvolved view locations. A programme of landscape works would be documented in accordance with any relevant permit conditions.

Section 14. Conclusion

The key findings of the Brewster Wind Farm LVIA are summarised below:

14.1 Landscape effects

The Brewster Wind Farm landscape character type, identified and described in this LVIA, is generally well represented throughout the Pyrenees Shire and surrounding Council areas and more generally within western Victoria.

This LVIA determined the overall landscape character sensitivity to be moderate. Distinguishable characteristics of the landscape character area may be altered by the proposed project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed project would potentially result in the introduction of prominent elements to the landscape character area but may be accommodated to some degree.

The proposed Brewster wind turbines would be located around 20 kilometres from prominent landscape features including the Mt Buangor State Park. Given that distance is one key determinant for establishing degrees of visual impact, the proposed Brewster wind turbines are unlikely to dominate or significantly detract from the existing view from these key view locations

The capability of the landscape to accommodate change is largely derived from the large scale and open landscape character identified in this part of western Victoria, together with the relatively low density of people located within the immediate and surrounding area of the wind turbine viewshed.

14.2 Visual effects

The proposed Brewster wind turbines are unlikely to have any visual impact on the character of the surrounding townships and localities, where views toward the wind turbines from the majority of dwelling view locations would be screened by adjoining residences, tree cover and broad low undulations in local landform

Views toward the proposed Brewster wind turbines from local roads and highways would offer a range of transitory views which would be subject to direction of travel and potential screening influence of vegetation alongside road corridors

Most rural dwellings surrounding the wind turbines maintain tree planting and/or windbreaks around dwellings. The extent of windbreak planting reduces the potential visibility of the wind turbines from a number of dwelling view locations within the surrounding viewshed

The extent and nature of cumulative visual effects are likely to be mitigated in part by the distance between the proposed Brewster wind turbines and those of the constructed Waubra, Stockyard Hills and Chepstowe wind farm sites

The switchyard would not form large scale visual elements within the landscape and would not result in significant visual effects.

14.3 Construction

Both pre-construction and construction activities are unlikely to result in an unacceptable level of visual impact due to the temporary nature of these activities, together with proposed restoration and rehabilitation strategies. The preferred location for some of the construction activities, including the on-site concrete batch plant and rock crusher, would generally be located away from publicly accessible areas, with the closest residential view location generally comprising associated landowners.

14.4 Mitigation measures

Although some mitigation measures may be considered appropriate to minimise the visual impact for a number of the elements associated with the wind farm including the wind turbines, it is acknowledged that the degree to which the wind turbines may be visually mitigated is limited by their scale and position within the landscape relative to surrounding view locations.

14.5 Acceptability of landscape and visual impacts

The Development of wind energy facilities Policy and planning guidelines notes that '*a responsible authority needs to determine whether or not the visual impact of a wind energy facility in the landscape is acceptable'.* This LVIA has assessed the potential landscape and visual effect of the Project against relevant policies and guidelines, and has determined that in our professional opinion, the level of landscape and visual effects are acceptable.

Appendix A Photomontage methodology

A.1 Photomontage methodology

A total of ten photomontages have been prepared to illustrate the general appearance of the proposed Project turbines following construction. The photomontage panorama images have been prepared by GBD and the photomontages have been prepared by RE Future.

The photomontage locations were selected following a review of ZTV maps, together with a site inspection to identify potential representative viewpoints. The photomontage locations were selected from surrounding road corridors and at a range of distances between the viewpoint and wind turbine to illustrate the potential influence of distance on visibility. The photomontages are presented at around 90 degrees with an additional detailed field of view at around 40 degrees. The photomontage includes an extended panorama view to provide context within the photomontage. The detailed view illustrates a view within the human central cone of binocular vision and provides a greater level of detail.

The photomontage locations are illustrated in **Figure 4** and photomontages presented in the following figures:

Figure 17 Photomontage P1 Western Highway
Figure 18 Photomontage P2 Western Highway
Figure 19 Photomontage P3 Trawalla Road
Figure 20 Photomontage P4 Kayleys Lane
Figure 21 Photomontage P5 Black Bottom Road
Figure 22 Photomontage P6 Trawalla East Road
Figure 23 Photomontage P7 Kayleys Lane
Figure 24 Photomontage P8 Trawalla East Road
Figure 25 Photomontage P9 Church Road
Figure 26 Photomontage P10 Pin Oak Court

Each photomontage was generated through the following steps:

1. A digital terrain model (DTM) of the proposed Project site was created from a terrain model of the surrounding area using digital contours
2. The site DTM was loaded into the Wind Pro software package
3. The layout of the wind farm and 3-dimensional representation of the wind turbine was configured
4. The location of each viewpoint (photo location) was configured in Wind Pro – the sun position for each viewpoint was configured by using the time and date of the photographs from that viewpoint
5. The view from each photomontage location was then assessed in Wind Pro. 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 Wind Farmer and the visible turbines superimposed on the photographs.
6. The photomontages were adjusted using Photoshop CS3 to compensate for fogging due to haze or distance, as well as screening by vegetation or obstacles and
7. The final image was converted to JPG format and imported and annotated as the final figure.

The horizontal and vertical field of view within most of the photomontages exceeds the parameters of normal human vision. However, the eyes, head and body can all move and under normal conditions a person would sample a broad area of landscape within a panorama view. Rather than restricting the extent of each photomontage to a single photographic image, a broader field of view is presented to illustrate the extent of the wind turbines more fully.

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

Appendix B Photomontages

A.2 Photomontages

Photomontage P1 - Proposed view south west to north west from Black Bottom Road/Western Highway. Approximate distance to closest visible wind turbine (T7) 1.29km

Photomontage P1 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 724292, Northing 5851781

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:2:55am

Original Page Format - A4 Landscape

Photomontage P1 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 17
Photomontage P1

GBD
Landscape architecture

Photomontage P2 - Proposed view south east to south west from Ercildoune Road/Western Highway. Approximate distance to closest visible wind turbine (T5) 567m

Photomontage P2 - Detail view

Figure 18
Photomontage P2

General Notes:

Coordinates:
Easting 721845, Northing 5852785

Camera: Nikon D7000 digital SLR, 50mm focal length in portrait (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time: 10.09am

Original Page Format - A4 Landscape

Photomontage P2 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

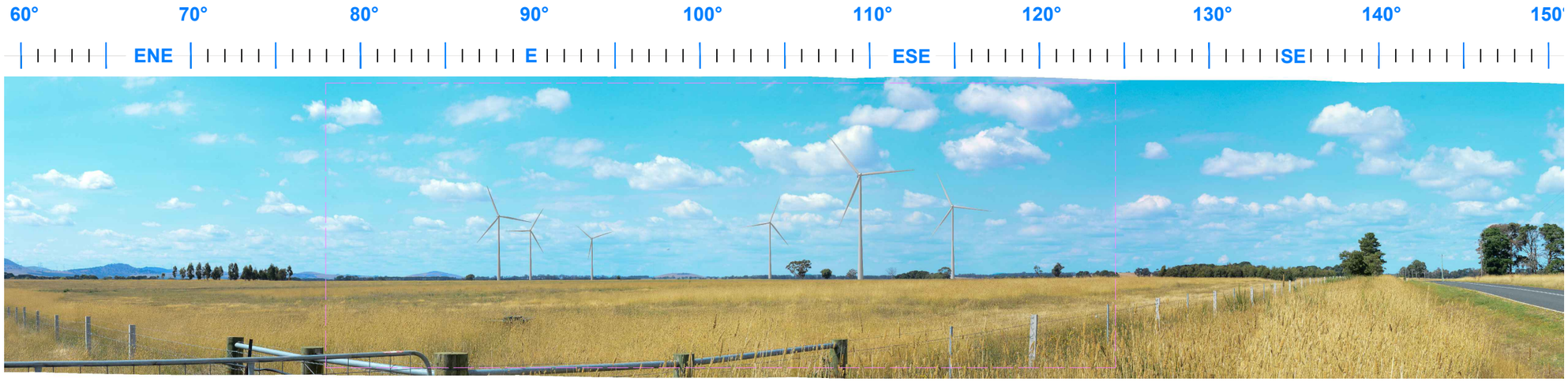
The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Extent of detail view

GBD

Landscape architecture



Photomontage P3 - Proposed view east north east to south south east from Trawalla Road. Approximate distance to closest visible wind turbine (T7) 1.46km

Photomontage P3 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 719163, Northing 5852312

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:12:35pm

Original Page Format - A4 Landscape

Photomontage P3 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

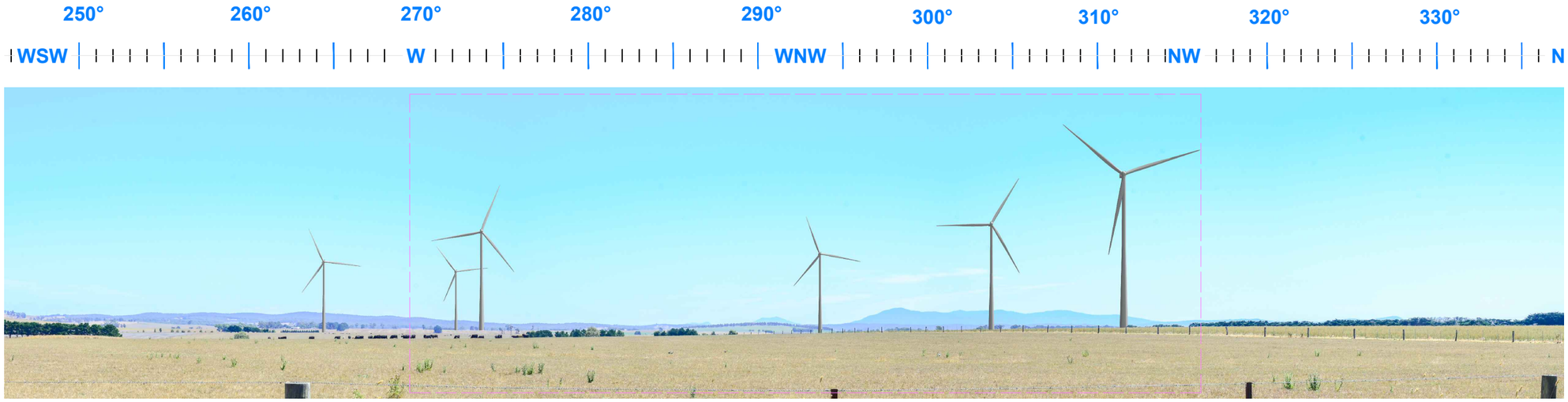
A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

GBD

Landscape architecture



Photomontage P4 - Proposed view west south west to north north west from Kayleys Lane. Approximate distance to closest visible wind turbine (T4) 1.4km

Photomontage P4 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 724017, Northing 5850906

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:1:16pm

Original Page Format - A4 Landscape

Photomontage P4 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 20
Photomontage P4

GBD
Landscape architecture

Photomontage P5 - Proposed view south south east to west south west from Black Bottom Road. Approximate distance to closest visible wind turbine (T1) 2.63km

Photomontage P5 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 723662, Northing 5854468

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:2:29pm

Original Page Format - A4 Landscape

Photomontage P5 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P6 - Proposed view west north west to north north east from Trawalla East Road. Approximate distance to closest visible wind turbine (T3) 2.95km

Photomontage P6 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 723375, Northing 5848358

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:12:05pm

Original Page Format - A4 Landscape

Photomontage P6 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

GBD

Landscape architecture

Photomontage P7 - Proposed view west north west to north north east from Kayleys Lane. Approximate distance to closest visible wind turbine (T3) 2.35km

Photomontage P7 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 723651, Northing 5849116

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 17 March 2021 Time:11:27am

Original Page Format - A4 Landscape

Photomontage P7 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 23
Photomontage P7

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Photomontage P8 - Proposed view north north east to east north east from Trawalla East Road. Approximate distance to closest visible wind turbine (T6) 2.02km

Photomontage P8 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 720379, Northing 5849344

Camera: Nikon D850 digital SLR, 50mm focal length

Date: 25 February 2021 Time:11:37am

Original Page Format - A4 Landscape

Photomontage P8 is illustrated at a view angle of around 60 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P9 - Proposed view north east to south east from Church Road. Approximate distance to closest visible wind turbine (T7) 3.44km

Photomontage P9 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 717166, Northing 5852458

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 9 November 2021 Time:11:29am

Original Page Format - A4 Landscape

Photomontage P9 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

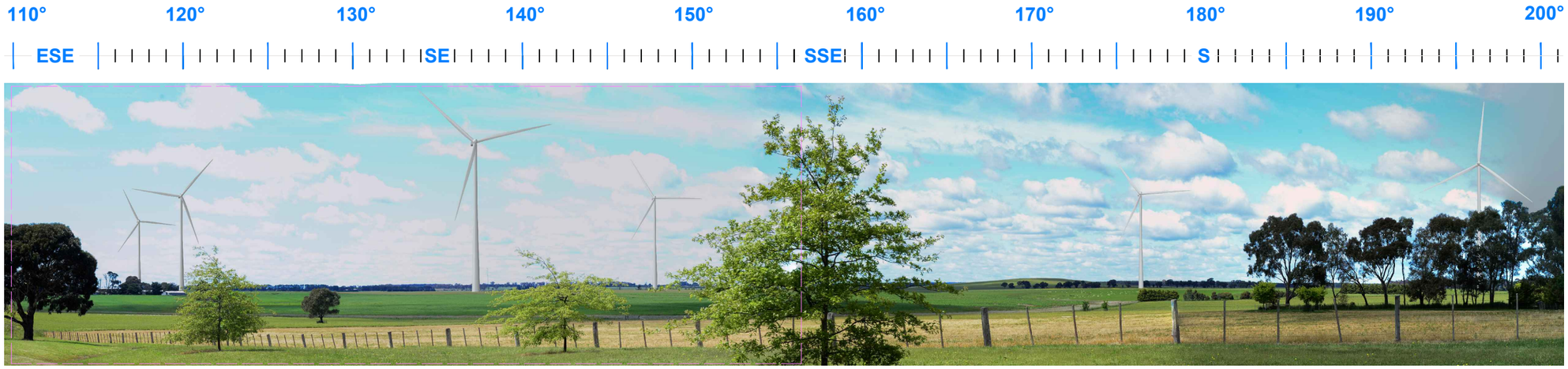
A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 25
Photomontage P9

GBD
Landscape architecture



Photomontage P10 - Proposed view north east to south east from Pin Oak Court. Approximate distance to closest visible wind turbine (T5) 1.13km

Photomontage P10 - Detail view

Extent of detail view

General Notes:

Coordinates:
Easting 720805, Northing 5853110

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 9 November 2021 Time:10.55am

Original Page Format - A4 Landscape

Photomontage P10 is illustrated at a view angle of around 90 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Figure 26
Photomontage P10

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Appendix C Andrew Homewood qualifications and experience

This Landscape and Visual Impact Assessment (LVIA) has been prepared by Andrew Homewood, Director and Principal Landscape Architect of Green Bean Design (GBD) Pty Ltd (ABN 866 035 75702). Andrew has held this position for the past 18 years.

Andrew holds post graduate, graduate and tertiary qualifications:

- Graduate Diploma Landscape Management (Sheffield University 1995)
- Bachelor Science (Dual Honours) Landscape Design and Archaeology (Sheffield University 1991-1994)
- National Diploma Amenity Horticulture (Writtle University College 1986-1989)

Andrew is a Registered Landscape Architect (membership #001245) and a member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has been directly employed or engaged in landscape related work/studies for the past 37 years in the United Kingdom and Australia.

Andrew has prepared numerous landscape and visual impact assessments across a range of state significant developments including renewable energy, mining, electricity transmission, waste management and transport.

GBD has been commissioned to undertake LVIA for over 60 renewable energy projects across Australia. Our Victorian wind farm project experience includes:

- Woolsthorpe Wind Farm Amendment VIA
- Mumblin Wind Farm LVIA
- Brewster Wind Farm LVIA
- Kentbruck Green Energy Hub LVIA (referral)
- Berrybank Wind Farm (micro siting review)
- Hawkesdale Wind Farm amendments
- Ryan Corner Wind Farm amendments
- Jung and Wimmera Plains Wind Farm LVIA
- Alberton Wind Farm LVIA
- Moorabool Wind Farm (offsite landscape mitigation plan)
- Kiata Wind Farm LVIA
- Murra Warra Wind Farm LVIA (preliminary assessment/reporting)
- Ararat Wind Farm (terminal substation assessment)
- Willatook Wind Farm LVIA (preliminary assessment/reporting)

Green Bean Design Pty Ltd (GBD) is a highly experienced landscape architectural consultancy specialising in landscape and visual impact assessment. Established in 2006 as an independent consultancy, GBD provide professional advice to a range of commercial and government clients involved in large infrastructure project and policy development.

GBD Director Andrew Homewood is a Registered Landscape Architect, member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has over 35 years' continuous employment in landscape consultancy and has completed numerous landscape and visual impact assessments for a range of state significant developments including wind energy, solar, mining, industrial and transport developments.

GBD has been commissioned for large scale renewable energy projects across New South Wales, Victoria, South Australia, Queensland and Tasmania.

GBD have prepared Expert Witness Statements and been engaged as a peer reviewer of renewable energy landscape and visual impact assessments in Victoria and New South Wales.

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