Planning Panels Victoria

Planning Permit Application PA1800406
Mount Fyans Wind Energy Facility

Panel Report

Planning and Environment Act 1987

8 August 2023

VICTORIA State Government

Planning Panels Victoria acknowledges the Wurundjeri Woi Wurrung People as the traditional custodians of the land on which our office is located. We pay our respects to their Elders past and present.

Planning and Environment Act 1987

Panel Report pursuant to section 97E of the PE Act

Planning Permit Application PA1800406

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Tim Hellsten, Chair

Steve Blackley, Member

Kate Partenio, Member

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Glossary and abbreviations

AMP	Adaptive Management Plan
AHD	Australian Height Datum
Applicant	Mount Fyans Wind Farms Pty Ltd
BAM Plan	Bat and Avifauna Management Plan
BCP	Brolga Compensation Plan
BMO	Bushfire Management Overlay
Brolga Guidelines	*Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, DSE 2011, Revision 2012
BUS	Bird Utilisation Survey
CASA	Civil Aviation Safety Authority
CEMP	Construction Environment Management Plan
CFA Guidelines	*Design Guidelines and Model Requirements for Renewable Energy Installations*, Country Fire Authority, 2022
CHMP	Cultural Heritage Management Plan
Council	Moyne Shire Council
CRM	Collision Risk Management
DEECA	Department of Energy, Environment and Climate Change

DELWP	Department of Environment, Land, Water and Planning (former)
draft Permit conditions	Without prejudice version of Planning Permit (PA180046) conditions provided by Department of Transport and Planning
DTP	Department of Transport and Planning
EES	Environmental Effects Statement
EMI	Electromagnetic interference
EMP	Environmental Management Plan
EMP Framework	Environmental Management Plan Framework, 27 March 2023
EP Act	*Environment Protection Act 2017*
EPA Noise Guidelines	*EPA Wind Energy Facility Turbine Noise Regulation Guidelines*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwth)
EP Regulations	*Environment Protection Amendment (Wind Turbine Noise) Regulations 2021*
ERS	Environmental Reference Standards
ESO3	Schedule 3 to Clause 42.01 Environmental Significance Overlay – Mortlake Power Stations Environs
EVC	Ecological Vegetation Class
FFG Act	*Flora and Fauna Guarantee Act 1988*
Fire RMP	*Risk Management Plan and Fire Safety Study*, Fire Risk Consultants, March 2023
GED	General Environmental Duty
GHCMA	Glenelg Hopkins Catchment Management Authority
GHFF	Grey-headed Flying fox
kV	kilovolt
LVIA	*Landscape and Visual Impact Assessment*, Urbis, August 2022
LPPF	Local Planning Policy Framework
MCA	Mortlake Community Alliance and Thomas Family
MSS	Municipal Strategic Statement
MNES	Matters of National Environmental Significance
MW	Megawatt
Native Vegetation Guidelines	*Guidelines for the removal, destruction or lopping of native vegetation*, DELWP, 2017
NTGVVP	Natural Temperate Grassland of the Victorian Volcanic Plain

NIRV	*Noise from industry in regional Victoria*, EPA, 2011
Noise Protocol	*Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues,* EPA, May 2021
NZ Noise Standard	*New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise*
PE Act	*Planning and Environment Act 1987*
PPF	Planning Policy Framework
Planning Scheme	Moyne Planning Scheme
Project	Mount Fyans Wind Energy Facility
Project area	land subject to the planning permit application
PVA	Population Viability Analysis
REZ	Renewable Energy Zones
RoI	Radius of Investigation (10 kilometres)
RSA	Rotor-swept area
SBWB	Southern Bent-wing Bat
SHW	Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
SLO	Significant Landscape Overlay
SIT	Significant Impact Trigger
study area	the Project area and surrounding land
SUZ1	Schedule 1 to Clause 37.01 Special Use Zone – Mortlake Power Station
TRZ2	Transport Zone – Principal road network
VBA	Victorian Biodiversity Atlas
VCAT	Victorian Civil and Administrative Tribunal
WBPG	Western (Basalt) Plains Grassland
WEF Guidelines	*Policy and planning guidelines for development of wind energy facilities in Victoria,* DELWP, July 2021

Overview

Project summary	
The Project	Mount Fyans Wind Energy Facility
Brief description	Planning permit application PA1800406 proposes the use and development of land for a Wind Energy Facility, utility installations, and associated buildings and works, subdivision, business identification signage, removal of native vegetation, and alteration of access to a road in a Transport Zone 2
Project land	The Project is located on freehold land in eight ownerships in south west Victoria (approximately 5 kilometres north of Mortlake township and 140 kilometres west of Geelong) as shown in Figure 1
Planning Scheme	Moyne Planning Scheme
The Permit Applicant	Mount Fyans Wind Farm Pty Ltd
Responsible Authority	Minister for Planning
Public notice	9 January to 7 February 2023
Submissions	Number of Submissions: 112 Refer Appendix A

Panel process	
The Panel	Tim Hellsten (Chair), Steve Blackley and Kate Partenio
Supported by	Georgia Thomas
Directions Hearing	By videoconference, 2 March 2023
Panel Hearing	In person (with videoconference access), Warrnambool, 3, 5-6, 12-14, 20-21 April, 29-31 May and 5-8 June 2023
Site inspection	Unaccompanied, 4 April 2023
Parties to the Hearing	Refer Appendix B
Citation	Mount Fyans Wind Energy Facility (PCI) [2023] PPV
Date of this report	8 August 2023

Executive summary

The Mount Fyans Wind Energy Facility (the Project) involves the construction and operation of a 400-megawatt, 81 turbine wind energy facility with associated infrastructure. The Project extends over 10,686 hectares on land used predominantly for grazing and cropping. The Project is located approximately 5 kilometres north of Mortlake within the Moyne Shire in south- west Victoria. The Applicant for the Project is Mount Fyans Wind Farm Pty Ltd which operates three wind energy facilities in Tasmania.

Planning permit application PA1800406, made under the Moyne Planning Scheme, proposes that each wind turbine would be a maximum of 200 metres above ground level (to blade tip). The Project includes 19 kilometres of overhead electrical transmission line, an on-site substation and grid connection substation connecting the wind energy facility to the National Electricity Market at the Mortlake Terminal Station. Two wind monitoring masts, cabling, road works including access and the associated removal of native vegetation are also proposed.

The Project is located in an area that features a number of other wind energy facilities within 20 kilometres of Mortlake at Mortlake South (35 turbines), Salt Creek (15 turbines) and Dundonnell (80 turbines), with a number of other wind energy facilities approved or proposed.

Under Clause 72.01-1 of the Victoria Planning Provisions, the Minister for Planning is the Responsible Authority for the Project. The Minister called in the application on 2 June 2019. Objections and submissions were referred to the Panel on 9 February 2023.

As a result of public exhibition in early 2023, 91 objections (including a late submission), 13 supporting submissions and 8 submissions from referral authorities or other agencies were received.

The key issues for submissions opposed to the permit application related to:

- landscape and visual impacts
- environmental impacts including on birds and bats, in particular Brolga and the Southern Bent-wing bat (SBWB)
- amenity and health impacts from turbine noise and blade flicker
- bushfire
- impacts on agriculture
- community and social impacts
- cumulative impact
- a range of other issues.

Supporting submissions identified a range of project benefits including:

- supporting sustainable energy production
- employment and economic benefits.

The Panel conducted an in-person hybrid hearing based in Warrnambool over several weeks, which allowed for party participation and observation through videoconferencing. The Panel received extensive submissions from the Applicant, the Moyne Shire Council and community-based submitters and evidence on traffic, bushfire, native vegetation, flora and fauna and noise.

The impact on Brolga and SBWB, landscape impact and noise including their cumulative impacts are the most determinative aspects of the permit application. They were also the issues most

focused on through Hearing submissions and cross-examination. The key question for the Panel is whether these impacts, some of which are unavoidable, are acceptable in the context of the *Planning and Environment Act 1987* (PE Act), planning policy and other guidance documents.

Fauna and flora impacts

Flora and native vegetation

The Project generally addresses the 'avoid' and 'minimise' principles of the *Guidelines for the removal, destruction or lopping of native vegetation*, DELWP, 2017 for the proposed extent of native vegetation removal. The draft conditions proposed including for offsets are generally appropriate.

Impacts to threatened ecological communities and native vegetation are acceptable and can be managed subject to the development and implementation of effective mitigation measures through permit conditions. South Road requires upgrade works that need to be carefully managed to achieve acceptable outcomes for threated vegetation communities. These impacts can be managed through permit conditions.

Southern Bent-wing Bat

Insufficient application information was supplied concerning potential impacts on the SBWB and mitigation measures to provide the necessary level of confidence that significant impacts will not occur. This includes the cumulative impacts of the Project and other existing wind energy facilities.

Further information is required for SBWB prior to further consideration of a permit including examining potential impacts and mitigation measures arising from movement within and through the site and completion of the Adaptive Management Plan and population viability analysis as part of a final Bat and Avifauna Management Plan.

Brolga

The Panel has relied on the *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, DSE 2011, Revision 2012 (Brolga Guidelines) to assess the impacts on Brolga. Since the development of the Brolga Guidelines and the Applicant's Brolga Report the status of Brolga under the *Flora and Fauna Guarantee Act 1988* has changed from vulnerable to threatened. In this context the assessment of impact needs to establish that a net zero net impact can be reasonably achieved consistent with the objectives of the Brolga Guidelines. This is critical to avoid irreversible damage and to reasonably mitigate impacts including cumulative impacts.

The Panel was not persuaded through evidence and submission that the methodology applied in the Brolga Report was sufficiently robust across all three required levels of assessment in the Brolga Guidelines to provide an appropriate level of confidence that:

- all existing and potential flocking and breeding areas have been properly identified and buffered
- breeding buffers substantially less than the default 3.5 kilometre buffers (including disturbance buffer) in the Brolga Guidelines can be supported
- the proposed mitigation measures will be effective in mitigating impacts
- habitat and movement corridors have been adequately considered as required at Clause 52.32-4

- the Project will achieve a net zero impact and avoid cumulative impacts on the Victorian Brolga or that the potential impacts are acceptable.

Further work is required to address impacts to Brolga or develop appropriate mitigation measures before a permit can be further considered. This includes further work to confirm breeding sites and buffers, flight behaviours to inform collision risk modelling and a completed population viability analysis and Brolga Compensation Plan.

Other fauna species

Based on the information provided, the Panel does not have sufficient confidence that potential impacts on listed bird and bat species, including habitat and movement corridors, are able to be acceptably managed. Further information is required to appropriately consider potential impacts including:

- investigation and assessment of the potential impacts on additional *Flora and Fauna Guarantee Act 1988* listed species including on habitat and movement corridors
- completion of a Bat and Avifauna Management Plan (BAM Plan) which includes a range of recommended matters relating to species inclusion, mortality monitoring and review.

The Project is unlikely to result in a significant impact on aquatic species and other reptiles through the implementation of appropriate mitigation measures. However trenchless technology should be used for cabling and other infrastructure wherever possible to avoid impacts on waterways and listed aquatic species. Survey efforts for Hairy Burrowing Crayfish prior to works on Blind Creek should be extended to include Little Galaxias to ensure impacts on that species are avoided.

Matters of National Environmental Significance

The planning permit process is serving as the accredited process for the assessment purposes of the *Environment Protection and Biodiversity Conservation Act 1999*. The Panel considered potential impacts on relevant Matters of National Environmental Significance (MNES) protected under the Act.

The Panel concludes the Project will have no significant impact on:

- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains and Grassy Eucalypt Woodland of the Victorian Volcanic Plain community or to listed flora species
- Yarra Pygmy Perch and Growling Grass Frog
- Little Galaxias subject to appropriate survey and mitigation methods.

Impacts to the Striped Legless Lizard and Natural Temperate Grassland of the Victorian Volcanic Plain are unavoidable and can be appropriately managed through permit conditions for detailed design, mitigation and offsets. This includes through any upgrades to South Road and provision of an Offset Management Plan for Striped Legless Lizard.

Impacts on SBWB and other bat species require further assessment including through the Bat and Avifauna Management Plan.

Landscape impacts

The Project will be a visually dominant element within a generally flat landscape and for some land owners the impacts will be significant. The visual impacts cannot be eliminated, although at-dwelling landscaping may provide some localised mitigation and visual relief. The Project will have

a cumulative impact on the landscape when viewed in conjunction with existing wind energy facilities nearby at Mortlake South, Dundonnell and Salt Creek (depending on the view point).

There is however limited recognition of the landscape values of the area in the Planning Scheme with the exception of specific views to Mount Shadwell from Mortlake. The Panel considers impacts on key views to Mount Shadwell have been appropriately avoided through Project design. The wider landscape impact is somewhat diminished by the distance between the Project and existing wind energy facilities, the terrain and existing vegetation, the spacing between turbines and their slender form and light colouring.

The visual impact on the wider landscape and for some rural residents must be balanced with the net benefit to the broader community resulting from renewable energy and the area's identified wind resource and proximity to other wind energy facilities and related infrastructure. On balance, the landscape impacts are considered acceptable.

Noise

The Project is capable of complying with the construction and operational noise limits set by the *Environmental Protection Act 2017* and the New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise. However, from a broader amenity perspective the addition of 81 turbines across an expansive site will result in some residents being exposed to noise from multiple wind farms on a more regular basis depending on wind conditions.

While there has been a clear practice to not apply the noise limits for High Amenity areas to the Farming Zone, the Applicant in this instance has indicated they can be met in any event. Given the broader cumulative impacts associated with the application the Panel considers that the Applicant should attempt to meet the High Amenity equivalent limits where practicable.

Other impacts

Several changes were made to the Project design through the Hearing process which reduced the extent of native vegetation proposed to be removed. The Panel is satisfied that with these project changes and subject to the conditions proposed by Department of Energy, Environment and Climate Change (DEECA), the impact on native vegetation has been minimised (and avoided where possible) in a manner consistent with clauses 21.01-2S and 52.17 of the Moyne Planning Scheme.

The Panel considers that issues relating to bushfire, hydrology, cultural heritage, traffic, agriculture, aviation, blade flicker and glint, electromagnetic interference, construction and decommissioning can be adequately managed to a minimal or acceptable levels through permit conditions.

Integrated assessment

The Project is likely to result in positive community benefits through the delivery of renewable energy to address climate change impacts and achieve energy emission reduction. It will provide for the efficient utilisation of existing power generation and transmission infrastructure and is likely to have local and regional economic benefits.

However, the Project has the potential to have material impacts on the environment, particularly on Brolga and SBWB. In the Panel's view there is too much uncertainty about these impacts based on the level of information provided for it to have an appropriate level of confidence that these impacts are acceptable. These issues cannot be satisfactorily mitigated through permit conditions at this stage.

The Panel considers this level of uncertainty outweighs the positive outcomes of the Project, and tips the balance of the Project to one that will not have a net community benefit or achieve a sustainable development outcome.

However, the Panel considers that if additional work is undertaken as identified in Chapter 3, many of its concerns relating to biodiversity impact can be addressed and responded to, potentially through a modified proposal. This may enable the subsequent issue of a planning permit consistent with the Panel's version of conditions in Appendix F.

Recommendations

Based on the reasons set out in this Report, the Panel recommends:

1. **Before further considering Planning Permit Application PA1800406, direct the Applicant to provide the following further information to the satisfaction of the Department of Energy, Environment and Climate Change (Environment Portfolio):**

   For Brolga:

   a) **Provide further assessment of potential Brolga breeding areas which includes:**
      - **all Victorian Biodiversity Atlas and other database records, including the Arnol and Ors 1984 location data and all sites identified in the aerial surveys**
      - **further local knowledge inputs within the 10-kilometre radius of investigation including all landholders with potential Brolga habitat and relevant community groups.**

   b) **Undertake additional flight behaviour studies to inform Collision Risk Modelling as required by the Level 3 assessment of the *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, 2011, Revision 2012 (DSE).**

   c) **Complete a Brolga Compensation Plan generally consistent with the draft condition in Appendix F and which also includes:**
      - **linkages to the Bat and Avifauna Management Plan and its mortality monitoring program**
      - **arrangements for regular ground and aerial surveys at appropriate times of the year to accommodate variability in environmental conditions**
      - **mortality monitoring and reporting annually for the first five years and then every five years for the life of the project.**

   d) **Recalculate the turbine free buffers around Brolga flocking and breeding sites in light of the above information. Re-site turbines and other overhead infrastructure outside the buffers.**

   For other fauna species:

   e) **Further assess potential impacts and mitigation measures arising from Southern Bent-wing Bat movement within and through the site.**

   f) **Assess the cumulative impacts to fauna species including from the Salt Creek, Dundonnell and Mortlake South wind energy facilities. The assessment should include information on behaviour, habitat utilisation and movement, and clear guidance on gathering and assessing information.**

   g) **Further assess potential impacts on *Flora and Fauna Guarantee Act 1988* listed species including:**

- **bird species including Black Falcon, Gull-billed Tern, Freckled Duck, Little Egret, Eastern Great Egret, Little Eagle and Blue-billed Duck**
- **Yellow-bellied Sheath-tail Bat.**

h) Complete the Adaptive Management Plan and Population Viability Analysis for Southern Bent-wing Bat. The Adaptive Management Plan should address the concerns outlined in this Report and provide a clearer commitment to curtailment.

i) Complete a Bat and Avifauna Management Plan to enable an assessment of the effectiveness of proposed adaptative management measures on bat and bird species. This should:

- **include all *Environment Protection and Biodiversity Conservation Act 1999* and *Flora and Fauna Guarantee Act 1988* Act listed species recorded on the site or considered to have a medium or greater likelihood to occur including:**
  - **Common Sandpiper**
  - **Gang Gang Cockatoo**
  - **icon species such as Wedge-tailed Eagle**
- **clarify and confirm roles and responsibilities for mitigation measures**
- **establish a precautionary mortality monitoring program for the life of the Project in consultation with the Department of Energy, Environment and Climate Change (Environment Portfolio)**
- **include an annual review and revision process which considers the latest scientific understanding, the effectiveness of all mitigation measures and the cumulative impacts of other wind energy facilities.**

2. Providing the further work in Recommendation 1 satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Pemit for the proposed development subject to conditions:

a) Use the Panel's version of planning permit conditions in Appendix F as a starting point.

b) Review the final planning permit conditions to ensure they:

- **apporiately respond to the findings of the additional assessments and documents provided, including any changes to the location and number of turbines**
- **are consistent with *Writing Planning Permits*, May 2023 (Department of Transport and Planning).**

1 Introduction

1.1 The Panel

On 9 February 2023 on behalf of the Minister for Planning (the Minister), the Department of Transport and Planning (DPT) referred submissions under section 97E(1)(a) and 97E(1)(b) of the PE Act to a Panel requesting a Hearing.[1]

The Panel comprised:

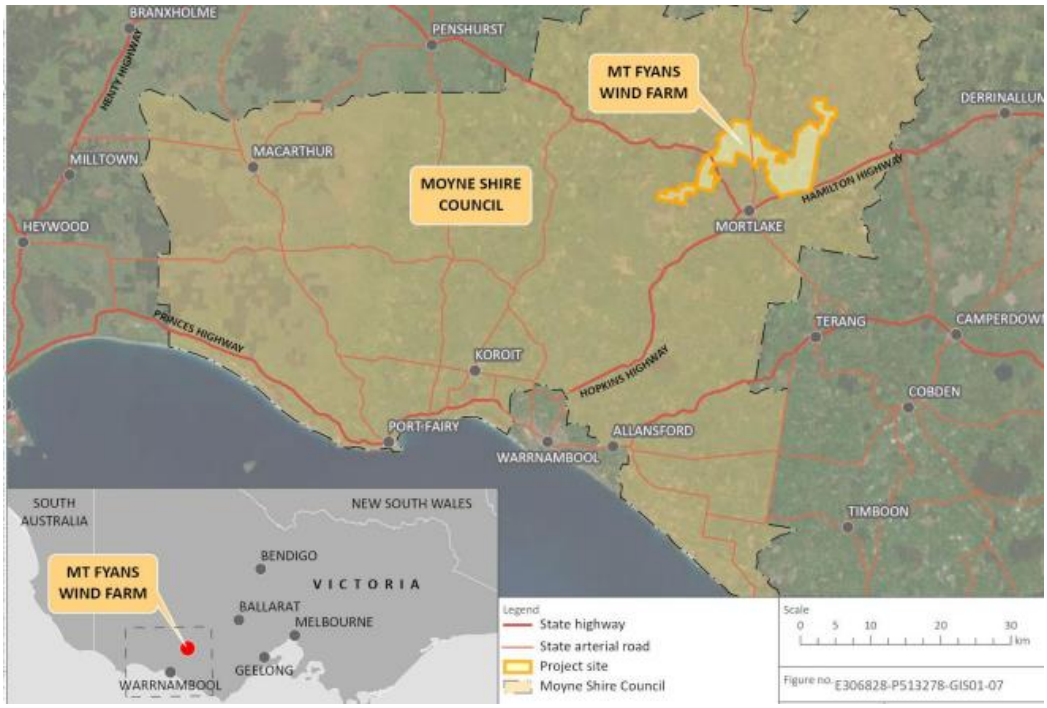
- Tim Hellsten, Chair
- Steve Blackley
- Kate Partenio

The Panel was supported by Senior Project Officer of Planning Panels Victoria, Georgia Thomas and records its thanks for her efforts in ensuring a smooth process was run.

1.2 The Planning Permit application

The Applicant for the Mount Fyans Wind Energy Facility (the Project) is Mount Fyans Wind Farm Pty Ltd. The Project is located in southwest Victoria within the Moyne Shire Council (approximately 140 kilometres from Geelong and 5 kilometres north of Mortlake, a township of approximately 1,147 residents)[2] and within a consolidated land holding comprising 167 privately owned land parcels (eight landholders) used primarily for grazing and cropping. The Project area is shown in Figure 1.

Figure 1 Project location



Source: Figure 1 Mt Fyans Wind Farm Planning Report

1 Document 1

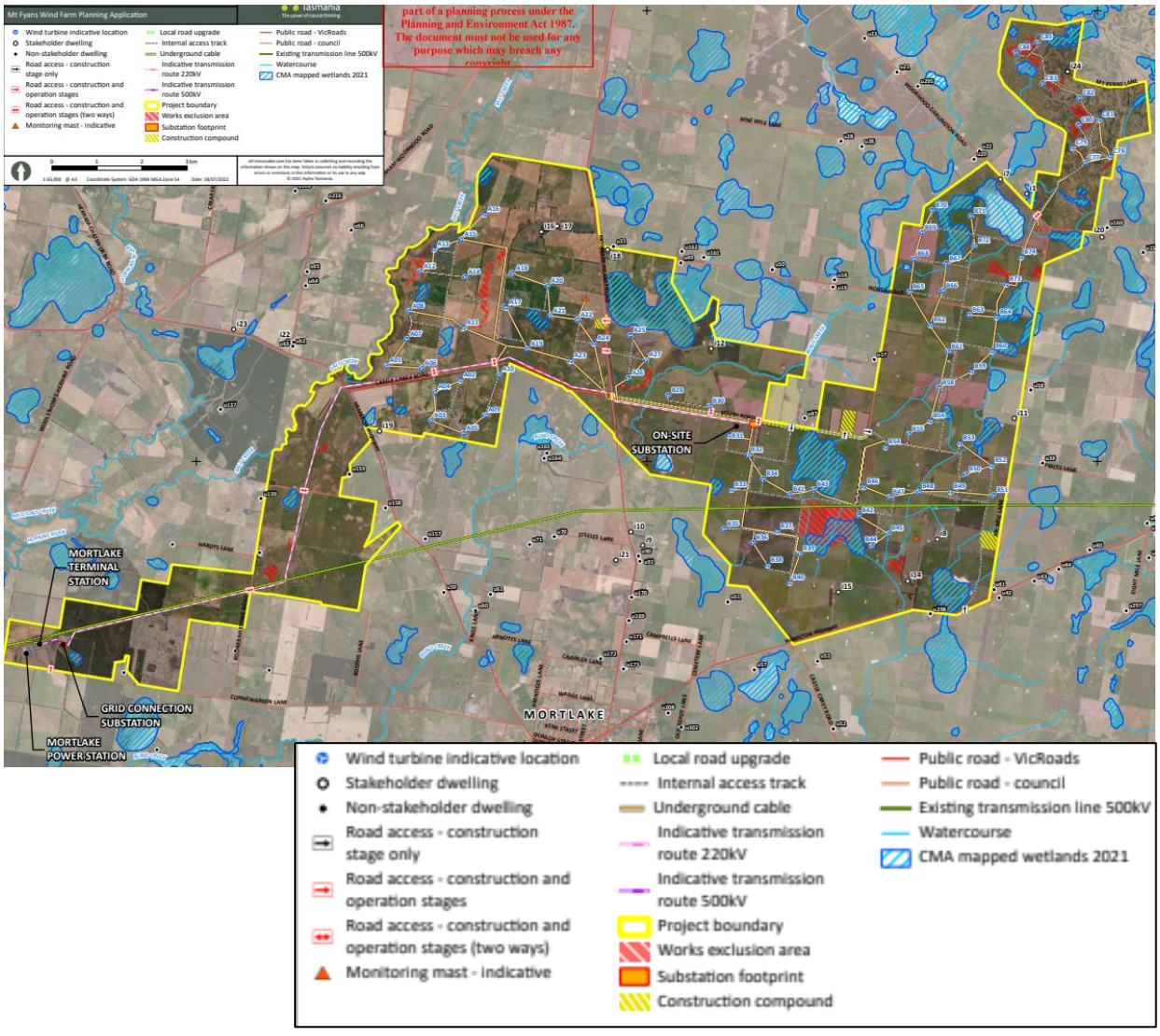
2 ABS Mortlake 2021 Census Community Profile

The Project layout is shown in Figure 2 and proposes:

- 81 wind turbines generating 400-megawatts (MW)
- an on-site substation and grid connection substation
- an overhead 200 kilovolt (kV) transmission line on compact poles
- a 500 kV transmission line from the off-site substation to the Mortlake Terminal Station
- wind monitoring masts
- road access works in the Transport Zone and local road upgrades (South Road)
- underground cabling
- hardstand areas and temporary construction compounds
- removal of native vegetation
- the subdivision of two lots for substations
- business identification signs.

The development plan includes works exclusion areas around areas of ecological and cultural value.

Figure 2 Project layout



Source: Mt Fyans Wind Farm Planning Report Figure 3 (legend expanded)

1.3 The Project land and surrounds

The Project land is irregular in shape and spans across a total area of 10,686 hectares. It is generally flat to undulating on volcanic open grassy plains with stony rises in its northern portion. At its highest point, the Project land is approximately 174 metres Australian Height Datum (AHD).

The vegetation and fauna habitat throughout the majority of the Project area has been highly modified by past disturbance including clearing, agricultural development and pasture improvement. Most of the Project land supports introduced vegetation, however remnant native vegetation is found within the stony rises, small intermittent and perennial crater lakes and wetland areas, Blind Creek and Salt Creek corridors and other drainage lines, as scattered trees and within road reserves. These areas have the potential to support significant fauna habitat.

The Project land contains or is adjacent to areas which provide habitat values for the critically endangered Southern Bent-wing Bat (SBWB) and Brolga, in addition to other species.

Mount Shadwell (295 metres AHD) is a significant topographic feature in the landscape (located between the Project land and Mortlake) and contains communications infrastructure. Nearby conservation reserves include Mortlake Common Flora Reserve and the Cobra Killuc Wildlife Reserve.

The 'Mondilibi' homestead complex is located at the western extent of the Project land at the base of Mondilibi Hill which was constructed between 1904 and 1908 and is covered by a Heritage Overlay (HO89) under the Moyne Planning Scheme.

Hamilton Highway runs along the southern boundary of the project site while Mortlake-Ararat Road runs in a northwest direction and bisects the site. Both the Hamilton Highway and Mortlake-Ararat Road are arterial roads and approved B-Double and oversize or overmass transport routes. Local roads located within or adjacent to the Project area include Castle Carey Road, Woorndoo-Darlington Road, Six Mile Lane, North Road and South Road.

The 500 kV Victoria-South Australia interconnector bisects the Project land. The Mortlake Terminal Station connects the Mortlake Power Station to the National Electricity Market and has been nominated by the Australian Energy Market Operator as the preferred connection point for generation development in the locality.

There are 84 dwellings within 4 kilometres of the site (32 of which are within 2 kilometres of a turbine and 51 between 2 and 4 kilometres of a turbine). Of these, one dwelling is located within one kilometre of a turbine which is one of 18 dwellings on the Project land. 66 dwellings are neighbours of the Project.

Nearby towns and rural communities include Mortlake to the south, Hexham to the west, Woorndoo to the north and Darlington to the east. The regional city of Warrnambool is situated approximately 55 kilometres to the south-west.

1.4 Background to application

The chronology of the Planning Permit application including environmental assessments is summarised in Table 1 derived from the Applicant's Part A and DTP submissions.

In 2017 the Minister for Planning determined that an Environment Effects Statement (EES) under the *Environment Effects Act 1978* (EE Act) was not required, subject to conditions.

The Planning Permit application was first lodged in 2018 with the then Department of Environment, Land and Water (DELWP, now Department of Transport and Planning (DTP)) as required by the Moyne Planning Scheme (Planning Scheme) and provisions of the PE Act and following the completion of a series of environmental, technical and heritage surveys. The Minister is the Responsible Authority (or decision maker) for the Planning Permit application.

In 2020 the Project was referred under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), due to the presence of the Southern Bent-wing Bat and 21 other listed species or communities that are Matters of National Environmental Significance (MNES). The Project was determined a controlled action requiring assessment and approval under the EPBC Act.

The planning permit process is serving as the accredited process for the assessment purposes of the EPBC Act under the Bilateral (Assessment) Agreement between the Commonwealth and Victoria.

Table 1 Chronology of events

Date	Event
2008-2009	Project conception and commencement of technical studies to inform project layout and design
2017	Project publicly announced and first public information sessions held
July 2017	Application referred to Planning Minister to determine if EES required
21 Aug 2017	Minister for Planning determined that an EES under the EE Act was not required, subject to conditions that the Applicant investigate and document: - the potential utilisation of the project site by the Southern Bent Wing Bat (SBWB) and protective measures to address predicted effects and risks - the presence of the listed *Pterostylis orchid* species and approach to avoiding, minimising or offsetting impact
13 Sep 2018	Application lodged with the Minister for Planning as responsible authority
9 Oct 2018	DELWP requested additional information under s54(1) of the PE Act including environmental studies
25 Oct 2018	Application referred to AusNet, Country Fire Authority (CFA), Southern Rural Water and VicRoads under s55 of the PE Act
18 Dec 2018 & 18 Jan 2019	Further information required under s54(1) of the PE Act relating to EPBC matters
22 Jan 2019	Further information provided by Applicant
2 June 2019	Application called in by Minister for Planning under s97B(1)(a) of the PE Act
Dec 2019	Applicant refers project to Commonwealth Minister for the Environment under EPBC Act
22 April 2020	Delegate of Commonwealth Minister for the Environment determines that the project is a controlled action requiring assessment and approval under EPBC Act.

Date	Event
	DELWP consults with then then Department of Agriculture, Water and the Environment on the scope of the accredited assessment and draft assessment and technical studies covering MNES
19 Dec 2021	Minister for Planning advises that additional technical studies and assessment satisfied, with minor updates, the conditions of the EES determination of August 2017. Draft controlled action assessment documents released concurrently with the permit application and ecological assessment reports. DELWP advises Applicant that its final comments referred to in the 19 December 2021 letter had been satisfactorily addressed
18 Aug 2022	Further information provided by Applicant and application amended under s50 of the PE Act to include a revised project description
15 Sep 2022	Further information requested under s54(1) of the PE Act
21 Sep 2022	Application referred to DELWP, AusNet Services, Head of Transport Victoria, Country Fire Authority (CFA), Southern Rural Water and VicRoads under s55 of the PE Act
18 Nov 2022	Further information provided by Applicant
9 Jan - 7 Feb 2023	Notice of the application. This included notice given to Aboriginal Victoria, AirServices Australia, Civil Aviation Safety Authority (CASA), Eastern Maar Aboriginal Corporation, Gunditi Mirring Tradional Owners Aboriginal Corporation, Moyne Shire Council (Council), Emergency Management Victoria, Energy Safe Victoria, Environment Protection Authority (EPA), Glenelg Hopkins Catchment Management Authority (GHCMA), Powercor, CFA, Southern Rural Water, Wannon Water and Forest, Fire and Regions Group, Barwon South West (DEECA)
9 Feb 2023	Minister refers objections and submissions to a panel under s97E of the PE Act the Minister
3 April 2023	Panel Hearing commences

1.5 Summary of submissions

A total of 91 objections (including a late objection provided to the Panel on 16 March 2023)[3] were received. The key issues related to:

- landscape and visual impacts
- environmental impacts including on brolga and bat species and removal of vegetation
- noise
- fire
- agriculture and biosecurity
- cumulative impact
- other issues including:
  - cultural heritage
  - traffic
  - blade flicker
  - community and social impacts
  - economic impacts including on property value

[3] Document 77

- construction impacts
- electromagnetic interference
- aviation
- sustainability.

Thirteen supporting submissions were received that identified project benefits including:

- supporting sustainable energy production and responding to climate change
- employment and economic benefits
- community and infrastructure benefits.

Submissions were received from:

- referral agencies (who did not object but identified conditions for any permit issued):
  - Department of Transport (now DTP), AusNet, DELWP (now DEECA in relation to native vegetation removal) and the Country Fire Authority (CFA)
- the following agencies: GHCMA, EPA, CASA and DEECA relating to both the permit application and EPBC Act assessment.

1.6 Procedural issues

(i) Cultural Heritage Management Plans

A Cultural Heritage Management Plan (CHMP) is required under the *Aboriginal Heritage Act 2006*. A CHMP must be approved prior to the issuing of any planning permits for the Project.

Completed or approved CHMPs were not in place when the application was lodged. At the Directions Hearing the Applicant advised that two CHMPs had been prepared to reflect that the Project area extended across the boundaries of the respective Traditional Owner Groups.

On 17 March 2023 the Applicant advised that CHMP 12658 Western Extension Area had been approved on 11 January 2023. A copy of the CHMP was provided to the Panel and a redacted version circulated to parties.[4]

The Applicant's Part A submission identified that CHMP 12657 for the balance of the site had been prepared and submitted for approval on 15 May 2023. The Applicant's closing submission identified that this CHMP had been approved on the 17 June 2023. A copy of the CHMP was provided to the Panel and a Notice of Approval circulated to parties.[5]

(ii) Environmental Management Plan

An Environmental Management Plan (EMP) was not provided when the application was lodged. At the Directions Hearing, the Panel sought advice from the Applicant on whether one had been prepared. The Applicant subsequently provided an Environmental Management Plan Framework dated 27 March 2023 (EMP Framework)[6] provides a framework for the provision of a hierarchy of EMP subplans including:

- construction and work management plan
- construction noise, vibration and dust management plan
- plans dealing with wildfire prevention and fire management plans

[4] Documents 67a and 91
[5] Documents 301 and 292
[6] Document 79

- plans dealing with vegetation management, biosecurity, sediment and water quality, hazardous substances and traffic management.

The Framework identifies that for each of these plans the EMP will identify performance targets, key management measures and provision for monitoring and reporting. An Operational EMP is also to be prepared which proposes subplans for, among other matters:

- operational noise management
- bat and avifauna management and compensation
- landscape management
- biosecurity, weed and pest management plan
- fire and emergency management
- traffic management.

(iii) Draft Planning Permit conditions

The Panel requested DTP provide without prejudice draft Permit conditions before the commencement of the Hearing. The without prejudice draft Permit conditions (draft Permit conditions)[7] were provided on 23 March 2023 and included conditions largely derived from model wind energy facility conditions and referral agency requested conditions.

Several versions of the draft Permit conditions were circulated during the Hearing by parties as part of submissions including:

- the Applicant's Part B submission version[8] based on the DTP version
- the Applicant's Part C version[9] based on its Part B version and which made changes in response to submissions, Panel questions, expert evidence and changes to the proposal relating to native vegetation impacts.

A without prejudice discussion on permit drafting was conducted following closing submissions based on the Panel's directions of 2 June 2023[10] and followed the circulation of conditions comments from DEECA and DTP, and without prejudice versions of conditions from Mortlake Shire Council (Council) and the Mortlake Community Alliance (MCA) and Thomas Family. The Applicant provided its final version on 14 June 2023 (Applicant Final version).[11]

References in the Panel's Report to draft Permit conditions refer to the DTP version including numbering unless other versions are specifically referred to. The Panel has prepared a version of Permit conditions in the event a permit is supported or supported following further work. This is in Appendix F.

(iv) Recording

Hamish Cumming and Neil Blain requested the Hearing be recorded. There were no objections from other parties to this request. The Panel agreed to the request and all Hearing days were audio recorded.

7 Document 73
8 Document 103
9 Document 244
10 Document 258
11 Document 302

(v) Documents

All documents relied on by the parties and the Panel were uploaded into a shared document drive. Mr Cumming provided a large number of documents in the lead up to the Hearing and before cross examination of ecology expert Mark Venosta and presentation of his submission. These documents have been consolidated in the Appendix C Document list as Document 266b (comprising 178 documents) and 266a (index).

(vi) Hearing dates and location

Several parties expressed concern about the dates of the Hearing coinciding with school holidays, Easter and other local events and the ability to call experts and adequately prepare cases. Council sought to defer the Hearing until the Willatook Wind Energy Facility Inquiry and Panel report and Minister's decision was released. The Panel did not support deferral of the Hearing and the Hearing was scheduled over several weeks to provide breaks and to allow adequate time to circulate and read expert witness reports and to prepare submissions.

Community submitter parties requested the Hearing be conducted in person in Mortlake. The Hearing was conducted in-person at two venues in Warrnambool with the Panel, experts, Applicant, Council and several community-based submitters in attendance and videoconferencing access provided for parties who were unable to attend in person. Council made arrangements for submitters and community members to observe proceedings from its Mortlake facilities. Warrnambool was considered appropriate as a location for the Hearing in terms of accessibility for all parties and experts, availability of venues capable of readily accommodating video conferencing equipment necessary to conduct a hybrid hearing. The Panel appreciates the efforts of the Applicant to provide appropriate venues and the necessary videoconferencing equipment and technical support for parties and interested people to participate and view the Hearing.

Lisa Parker (Submission 96) was unable to attend the Hearing. The Panel subsequently put questions in writing to Ms Parker relating to her original submission and she provided an email response before closing submissions were made.[12]

(vii) EPA participation

On 28 February 2023, the EPA sought advice from the Panel about whether it should attend the Directions Hearing and Hearing following a request for its attendance from Council. The Panel advised the EPA on 1 March 2023 before the Directions Hearing, that because they were a submitter and noise was a key submission issue it would benefit from a brief presentation at the Hearing. The Panel invited the EPA to set out the relevant noise standards, set out requirements relating to General Environment Duty (GED), summarise its submission and provide any comments in relation to any permit conditions.[13]

EPA subsequently advised that it did not intend to participate in the Hearing and provided a response to the matters identified by the Panel.[14] Several parties including Council expressed concern regarding EPA's nonparticipation in the Hearing given its role in regulating post-construction noise and concerns regarding cumulative noise impact. The Panel advised the EPA of

[12] Documents and respectively
[13] Document 49
[14] Document 50

party concerns and provided an opportunity for the EPA to participate if it changed its position. This opportunity was not taken up.

(viii) Community submissions

Mr Blain and Ms Lenehan requested that Council provide the 608 submissions it received in response to it seeking community feedback to the proposal and to inform its position. The Panel advised that while its scope was limited to the submissions referred to it, Council could elect to provide them in a redacted form as part of its submission. Council advised at the Directions Hearing it was reluctant to do so because the submissions were made for a different purpose, potentially contained private information and those submitters had not made any privacy declarations for their alternative use. The Panel did not direct they be provided. These submissions were provided to the Panel through MCA's submission but were not circulated to parties for privacy reasons. After reviewing the submissions, the Panel found they demonstrate a level of community concern and reflect the submission approach adopted by Council as well as the issues raised in the submissions referred to it, and has given them little weight.

(ix) Comments about experts, referral agencies and their representatives

Several parties:

- sought to elicit conflict of interest declarations from experts and representatives of DTP and Council, or were highly critical of referral agencies and in some instances their representatives including of EPA, DEECA and DTP
- made allegations or inferences of inappropriate conduct or integrity
- suggested that some experts benefited from their evidence or had falsified it or sought to mislead.

The Panel considers these comments to be unsubstantiated, inappropriate, unfair, and offensive. Such inferences and claims are unsupported by any evidence and go beyond the powers enabled to the Panel under the PE Act.

The Panel's task is to consider the merits of a planning permit application and make recommendations on it to the Minister pursuant to section 97E of the PE Act. It does not have an inquiry role into the provisions of legislation, regulations, standards and guidelines or the various roles played by agencies in the approval and monitoring or enforcement of wind energy facilities.

Accordingly, comments of this nature are unhelpful, do not assist the Panel's task, and unnecessarily disrupt and delay the Hearing process.

1.7 Site inspection

The Panel inspected the Project area and adjoining land. The inspection included viewing the Dundonnell, Salt Creek and Mortlake South windfarms, Mortlake township and surrounds and the identified key view lines to Mount Shadwell in addition to sites nominated by parties following the Direction Hearing. [15]

Given the extent and complexity of the Project area it was not possible to conduct an accompanied on-site inspection. In lieu of an on-site inspection the Applicant was directed to provide drone footage of the Project area. This was provided in a comprehensive fashion and

[15] Documents 62, 63 and 64

uploaded to a document share folder for parties to view and has been useful to the Panel in understanding submissions, landscape impacts and issues associated with proximity to sensitive habitat areas and in preparing its Report.

The Panel's site inspection was accomplished from the public realm informed by party requests and an inspection map provided by the Applicant of key landscape features and proposed project infrastructure.[16] It was able to view (unaccompanied) the proposed grid connector substation site using access instructions provided by the Applicant.

During the site inspection, the Panel noted that some of the application material was outdated with:

- Dundonnell wind energy facility grid connection substation constructed
- Dundonnell wind energy facility 220 kV transmission infrastructure in place and with apparent capacity to support further transmission lines using spare arms
- recent road widening works along South Road undertaken by Council.

The impacts of these changes on the Project were identified through submissions.

1.8 The Panel's approach

The Panel has assessed the Permit against the principles of net community benefit and sustainable development, as set out in Clause 71.02-3 (Integrated decision making) of the Planning Scheme.

The Panel considered all written objections and submissions made in response to the notice of the Permit Application, observations from site visits, and submissions, evidence and other material presented to it during the Hearing. It has reviewed a large volume of material, and has had to be selective in referring to the more relevant or determinative material in the Report. All submissions and materials have been considered by the Panel in reaching its conclusions, regardless of whether they are specifically mentioned in the Report.

This Report deals with the issues under the following headings:

- Planning context
- Biodiversity
- Landscape and visual impact
- Noise and amenity
- Cultural heritage, bushfire and hydrology
- Other issues:
  - Traffic
  - Agriculture
  - Aviation
  - Social and economic impacts
  - Construction impact, complaints and decommissioning
- Integrated assessment.

[16] Document 76

2 Planning context

2.1 Planning context

Table 2 identifies planning context relevant to the Amendment. Appendix A highlights the key elements of relevant provisions and policies of the Moyne Planning Scheme, applicable legislation, Planning Practice Notes, guidelines and standards.

The Project land is predominantly located within the Farming Zone except a smaller western portion proposed to accommodate the grid substation which is located within the Special Use Zone which provides for the development of the Mortlake Power Station. The Transport Zone extends along the Project land frontages to the Mortlake – Ararat Road and Hamilton Highway.

Table 2 Planning context

	Relevant references
Victorian planning objectives	- section 4 of the PE Act
Planning Policy Framework (PPF)	- Clauses 11.01-1S (Settlement), 11.01-1S Settlement), 11.01-1R (Settlement – Great South Coast) and 11.03-6S (Regional and local places) - Clauses 12.01-1S (Protection of biodiversity), 12.01-2S (Native vegetation management), 12.03-1S (River and riparian corridors, waterways, lakes, wetlands, and billabongs), 12.05 (Significant environments and landscapes) - Clauses 13.01-1S (Natural hazards and climate change), Clause 13.02-1S (Bushfire planning), 13.04-2S (Erosion and landslip), 13.05-1S (Noise management), 13.07-1S (Land use compatibility) - Clauses 14.01.1S (Protection of agricultural land), 14.01-2S (sustainable agricultural land use), 14.02-2S (Water quality) - Clauses 15.01-6S (Design for rural areas), 15.03-2S (Aboriginal cultural heritage) - Clauses 17.01-1S (Diversified economy), 17.01-1R (Diversified economy – Great South Coast) - Clauses 18.01-1S (Land use and transport integration),18.01-2S (Transport system), 18.01-2R (Transport links – Great South Coast), 18.02-4S (Roads), 18.02-6S (Ports), 18.02-7S (Airports and airfields) - Clause 19.01-1S (Energy supply), 19.01-2S (Renewable energy), 19.01-2R (Renewable energy – Great South Coast)
Local Planning Policy Framework (LPPF)	- Clauses 21.04 (Municipal vision) - Clause 21.06 (Environment) - Clause 21.09-4 (Mortlake) - Clause 22.01-1 (Aboriginal heritage) - Clause 22.02-2 (Rare and threatened species) - Clause 22.02-8 (Flora and fauna Local Policy) - Clause 22.03-4 (Agricultural production) - Clause 22.03-8 (Fire protection local policy)

	Relevant references
Planning scheme provisions	- Farming Zone - Transport Zone (TZ) - Special Use Zone – Schedule 1 Mortlake Power Station (SUZ1) - Environmental Significance Overlay – Schedule 3 Mortlake Power Stations Environs (ESO3) - Heritage Overlay - Bushfire Management Overlay (BMO)
Particular provisions	- Clause 52.05 (Signs) - Clause 52.17 (Native Vegetation) - Clause 52.29 (Land adjacent to a Principal Road Network) - Clause 52.32 (Wind Energy Facility) - Clause 53.02 (Bushfire Planning) - Clause 65 (Decision Guidelines) - Clause 66 (Referral and Notice provisions) - Clause 71.02 (Integrated Decision Making) - Clause 72.01-1 (Minister is the responsible authority) - Clause 72.04 (Incorporated documents)
Incorporated Documents	*Guidelines for the removal, destruction or lopping of native vegetation,* DELWP 2017 (Native Vegetation Guidelines)
Background documents	- *Great South Coast Regional Growth Plan*, Victorian Government, 2014 - *Infrastructure Design Manual* (2019, Local Government Infrastructure Design Association)
Reference documents	Clause 19.01-2S policy documents to be considered: - *Victoria's Climate Change Strategy,* DELWP, May 2021 - *Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria,* DELWP, July 2021 Clause 52.32-5 Decision guidelines: - *Policy and planning guidelines for development of wind energy facilities in Victoria,* DELWP, July 2021 (WEF Guidelines), which are also a policy consideration at Clause 19.01-2S - *New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise* (NZ Noise Standard)
Planning practice notes	- *Planning Practice Note 45: Aboriginal Heritage Act 2006 and the Planning Permit Process*, June 2015 (PPN45) - *Planning Practice Note 64: Local planning for bushfire protection*
Other strategic plans and policies	- *Renewable Energy Roadmap* and *Renewable Energy Action Plan 2017* - *Victorian Renewable Energy Zones Development Plan Directions Paper,* February 2021
Other guidelines, standards and protocols	- *Wind Energy Facility Turbine Noise Regulation Guidelines,* EPA (EPA Noise Guidelines)

	Relevant references
	- *Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues,* EPA, May 2021 (Noise Protocol) - *Design Guidelines and Model Requirements for Renewable Energy Installations*, Country Fire Authority, 2022 (CFA Guidelines) - *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, DSE 2011, Revision 2012 (Brolga Guidelines)
Other relevant Acts and Regulations	- *Aboriginal Heritage Act 2006* - *Aboriginal Heritage Regulations 2007* - *Climate Change Act 2017* - *Environment Protection Act 2017* - *Environment Protection Amendment (Wind Turbine Noise) Regulations 2021* - *Environment Protection and Biodiversity Conservation Act 1999 (Cwth)* (EPBC Act) - *Fauna and Flora Guarantee Act 1988* (FFG Act) - *Road Management Act 2004*
Planning Scheme Amendments	- Amendment VC212 gazetted 9 February 2022 - Amendment VC234 gazetted 4 July 2023

2.2 Planning Permit triggers and requirements

Table 3 sets out the elements of the Project which require a planning permit under the provisions of the Planning Scheme and associated provisions.

Table 3 Zone, Overlay and particular provision permit triggers

Planning Scheme provision	Related provisions and referrals
Use	
- Clause 35.07-1 (Farming Zone) for 'Wind Energy Facility' and 'Utility Installation' - Clause 36.04-1 (Transport Zone) for 'Utility Installation' - Clause 37.01 4 (SUZ1) for 'Utility Installation'	- Clause 52.32 - Clause 36.04-3 application requirements including consent of the Head, Transport for Victoria
Development (Buildings and works)	
- Clause 35.07-4 (Farming Zone) and Clause 37.01 (SUZ1) for buildings and works associated with a permit required use - Clause 37.01 (SUZ1) for buildings and works - Clause 36.04 (Transport Zone) (TZ) for works associated with new or upgraded road access, cabling or transmission poles and towers - Clause 42.01 (ESO)	- Clause 52.32 - Clause 52.29-4 application must be referred to Head, Transport for Victoria (Determining referral authority)

Planning Scheme provision	Related provisions and referrals
- Clause 52.29 creating or altering access to a road in the TZ2	
Subdivision	
- Clause 35.07-3 (Farming Zone) - Clause 42.01-2 (ESO) - Clause 44.06-2 (BMO)	- Clause 35.07-3 states a permit may be granted for a lot under 40 hectares for a utility installation - Clause 44.06-3 requires provision of a bushfire assessment - Clause 44.06-4 requires an application to meet the requirements of Clause 53.02 (including 53.02-4) - Clause 52.32 (Wind Energy Facilities) - Clause 53.02 (Bushfire Planning) - Clause 66.01 requires referral to CFA (Recommending referral authority for BMO) and the relevant water, drainage and sewerage authority, electricity supply/distribution authority and electricity transmission authority (AusNet) within 60 metres of a major electricity transmission line/easement (all determining referral authorities)
Business identification sign	
Clause 35.07-7 (Farming Zone) – Category 4 (Sensitive areas)	Clause 52.05 (Signs) which: - includes application requirements (Clause 52.05-6) - includes mandatory conditions for all signs (Clause 52.05-9) - limits a Category 4 Business identification sign to a total display area of 3 sqm (Clause 52.05-14)
Removal of native vegetation	
Clause 52.17	- Clause 52.17-2 and Clause 52.17-5 Offset requirements as set out in the Native Vegetation Guidelines - Clause 66.01 requires referral to Secretary DELWP (Recommending referral authority)
Wind energy facility	
Clause 52.32 for use and development	

2.3 Permit application

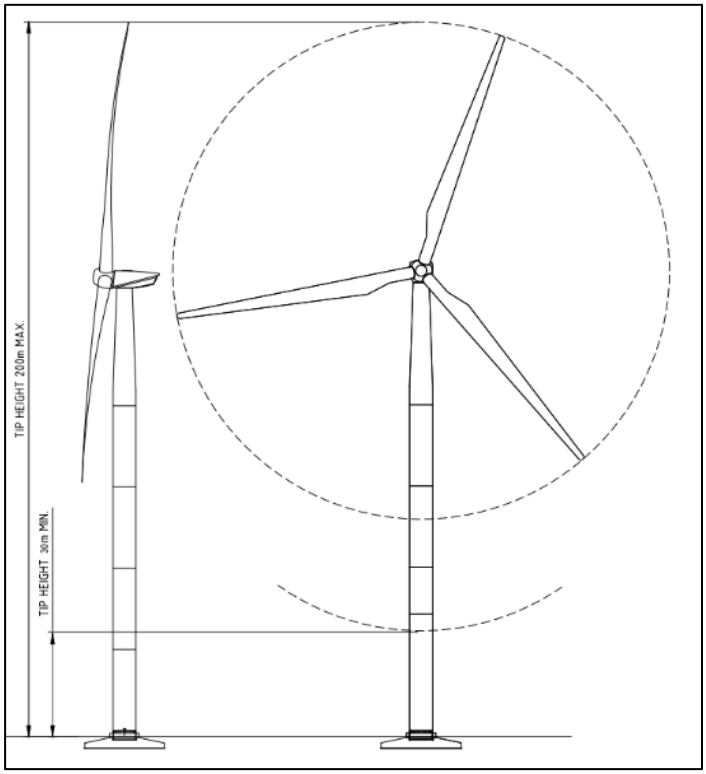
The key elements of the application include:

Wind turbines

A maximum of 81 turbines, each up to 200 metres tall (to tip of blade) with blades a minimum of 30 metres above natural ground level. Each turbine will (Figure 3):

- generate approximately 6.8 MW with a combined capacity of approximately 400 MW
- have a rotor diameter of up to 170 metres and a turbine hub tip of up to 120 metres
- be supported by a steel-reinforced concrete gravity base or piled foundation (approximately 20 metres by 20 metres and 3 metres deep) and a hardstand area typically 50 metres by 50 metres consisting of compacted crushed rock sub-base, topped with a gravel-wearing course
- have provision for a pad-mounted transformer and ring main at its base
- be finished in non-reflective material, coating or paint.

Figure 3 Typical wind turbine



Source: Development plans and map book (December 2022)

Onsite substation

Located in the central part of the Project site, and accessed from South Road, the onsite substation will be connected by an underground electrical network to the wind turbines and transform electricity from 33 kV to 220 kV for transmission to the grid connection substation. The 2.0 hectare onsite fenced substation compound includes:

- two 33 kV to 220 kV transformers
- 220 kV switchyard containing switchgear to connect to the 220 kV transmission line
- ancillary infrastructure including fire protection, amenities, operations room, and lighting
- a control building containing office, amenities and equipment and workshop.

Grid connection substation

The grid connection substation will connect electricity from the onsite substation to the Mortlake Terminal Station and transform it from 220kV to 500kV. The grid connection substation will be developed immediately east of the existing Mortlake Terminal Station and south of the recently constructed Dundonnell grid connection substation. It will be contained within a fenced 1.16 hectare compound accessed from Connewarren Lane by an existing right-of-way access track. The initially proposed separate access (which was to be 1.2 kilometres long and 10 metres wide) is no longer required.

The fenced grid connection substation will include:

- maximum of two 220kV to 500kV transformers
- 500kV and 220kV switchyards
- ancillary infrastructure including fire protection, amenities, operations room and lighting.

Meteorological monitoring masts

Up to three meteorological monitoring masts will be erected during construction and commissioning of the project, and may be permanently maintained on site. The monitoring masts are expected to be guyed steel lattice masts, each measuring up to 120 metres high.

Underground electrical network

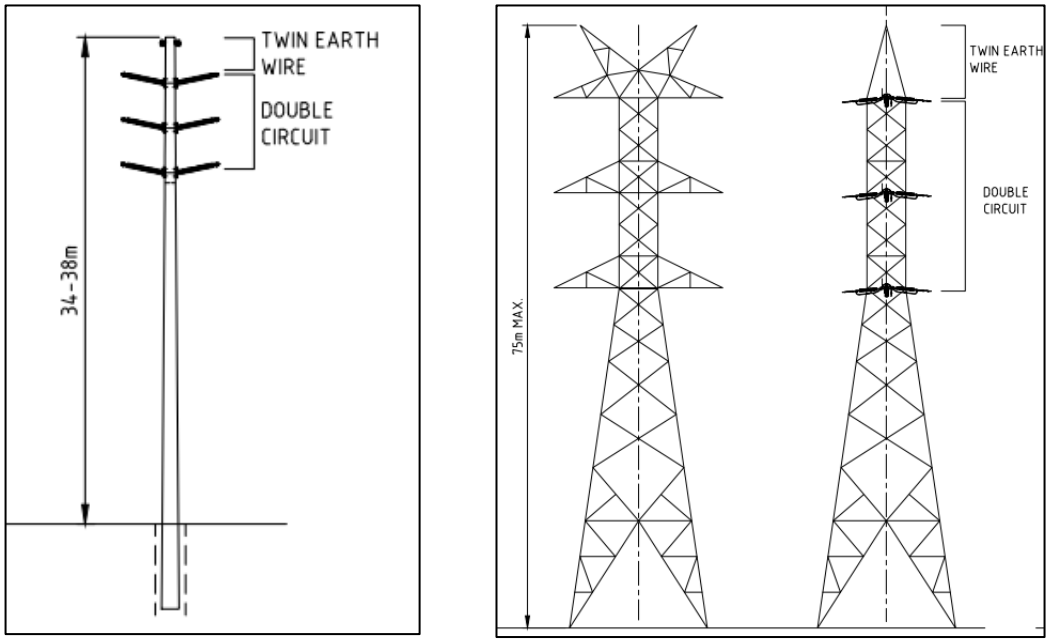
An underground electrical network of up to 80 kilometres will connect each wind turbine to the onsite substation. The underground electrical network will be in excavated trenches.

Above ground electrical network

The above ground electrical transmission network will consist of the following (refer to Figure 4):

- approximately 19 kilometres of overhead single/double circuit 220kV transmission line to transmit electricity from the onsite substation to the grid connection substation and which will be co-located (run in parallel) with a section of the Dundonnell wind energy facility transmission line and 500kV South Australian-Victorian interconnector. The transmission line will use a compact pole with non-reflective matte surface, designed to reduce the footprint of the pole and its visual impact. Poles will mostly be 34 to 38 metres high (up to 44 metres in limited locations based on topography and engineering considerations) and spaced approximately 300 metres apart
- approximately 500 metres of 500 kV transmission line to transmit electricity from the grid connection substation to the Mortlake Terminal Station. The 500 metre span will comprise two steel towers expected to be 75 metres high. Pole and tower foundations will be determined based on onsite geotechnical conditions.

Figure 4 Typical 220kV and 500kV transmission towers



Source: Development plans and map book (December 2022)

Access

A network of 'primary' and 'secondary' compacted crushed rock access tracks is proposed across the site to provide access to turbines and other infrastructure. Approximately 40 per cent of these are existing or upgraded existing farm tracks. Primary tracks are expected to be up to 9 metres wide while secondary tracks are expected to be up to 5.5 metres wide.

Upgraded and new access to roads are proposed within the Transport Zone (designated TRZ2 with an identified purpose of transport use – Principal road network) for construction traffic, including over size and over mass vehicles. Proposed road access points are:

- Hamilton Highway - west of Six Mile Lane (used only for construction)
- Mortlake-Ararat Road - between Manooka Lane and South Road, South Road.

Temporary ancillary components

A range of onsite ancillary components will support the construction of the facility including fire protection, security fencing, access tracks, and gates. Three temporary construction compounds are proposed for temporary offices and amenities, vehicle hardstand areas, workshop and fuelling facilities, laydown areas for turbine components and electrical equipment and a concrete batching plant. After construction these areas will be rehabilitated back to farming land or modified to provide farming support areas such as stock yards.

Vegetation removal

The development will require removal of up to 0.833 hectares (revised to 0.977)[17] of native vegetation, comprising:

- six scattered River Red Gum (*Eucalyptus camaldulensis*) (equating to 0.414 ha) for the construction of the transmission line (these were later proposed to be retained)

[17] The hectare calculation for native vegetation removal was amended a number of times during the Hearing as a result of estimates relating to publicly funded revegetation works and works undertaken in South Road by Council. This is discussed in more detail in Chapter 3.2.

- 0.409 hectares of Plains Grassland (Ecological Vegetation Class (EVC) 132) along South Road for site access
- up to 0.004 hectares a of Creekline Grassy Woodland (EVC 68) on Coleraine Road (consisting of a small Blackwood *Acacia melanoxylon* tree) to facilitate transport of turbine blades to the project site
- 0.150 ha of publicly funded revegetation plantations in three locations where clearance is required for access tracks.

Upgrades of South Road may also impact up to 0.414 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP), a Commonwealth-listed critically endangered ecological community. The upgrades will clear up to 0.381 hectares and will reduce the size of several patches of NTGVVP such that they are no longer of sufficient size (0.05 hectares) to qualify for national listing, resulting in impacts to an additional 0.033 hectares of NTGVVP.

Subdivision

The project will require the subdivision of two existing lots within the Farming Zone to create separately disposable lots for the:

- onsite substation and control building lot – approximately 3.96 hectares in area (from a parent lot of 239.48 hectares)
- grid connection substation lot – approximately 5.69 hectares in area (from a parent lot of 61.16 hectares) but without the 'L' shaped access road which is no longer required. The lot will be transferred to Ausnet.

The development will be staged so that the subdivision of these lots does not occur until the substations have been constructed and transferred to the utilities service provider.

Signage

A 2.25 square metre non-illuminated single sided business sign, supported on two posts to a height of 2.5 metres, is proposed.

2.4 Permit application documents

The application was supported by the following documents:

- Development plans and map book (December 2022)
- Turbine and dwelling plan (August 2022)
- landowner consent (August 2022)
- DoT consent for planning permit application to be made
- Mt Fyans Wind Farm EPBC Act Assessment documentation, November 2022
- technical reports:
  - *Mt Fyans Wind Farm Planning Application*, Hydro Tasmania, December 2022
  - *Flora and Fauna Existing Conditions*, Biosis, November 2022
  - *Targeted Surveys and Impact Assessment*, Biosis, November 2022
  - *Brolga Report*, Biosis, August 2022
  - *Mount Fyans Southern Bent-Wing Bat Survey Supplementary Report*, Biosis, August 2018
  - *Landscape and Visual Impact Assessment*, Urbis, August 2022
  - *Before and After Photosimulations*, Urbis, September 2022
  - *Background Noise Report*, Marshall Day, July 2018

- *Environmental Noise Assessment*, Marshall Day, August 2022
- *Noise Audit*, Envirorisk, November 2022
- *Traffic Impact Assessment*, GHD, August 2018
- *Shadow Flicker Report*, Entura, August 2022
- *Electromagnetic Interference Report*, DNV GL, August 2022
- *Preliminary Cultural Heritage Report*, Biosis, March 2017
- *Bushfire Assessment*, GHD, August 2022
- *Geoheritage Assessment*, Environmental Geosurveys, April 2014
- *Surface Water Assessment*, Entura, August 2022
- *Hydrological Assessment*, Entura, August 2022
- *Aviation Safety Assessment*, Aviation Projects, August 2022
- *Community Consultation Report*, Woolnorth Renewables/Nation Partners, August 2022.

2.5 Community consultation

The extent of community consultation on the Project is set out in the Community Consultation Report.[18] The Applicant advised this included face-to-face discussions with Council and immediate neighbours, key stakeholders and the broader community. Methods of engagement included meetings and workshops with Council, distribution of newsletters, flyers and information, establishment of an interactive project website, delivery of two public displays that were each held over two days in Mortlake in 2017 and 2018, attendance at public events and establishment of a shopfront in Mortlake's main street in 2020 which was open twice a week and other times by appointment.

Concerns about the extent of community consultation or the engagement with the community or landowners on issues relating to landscape impacts, brolga, noise, shadow flicker was a strong theme of submissions to the Panel. These concerns are discussed in the following chapters.

2.6 Strategic justification

There is strong strategic support in the Planning Scheme for the establishment of renewable energy facilities to address climate change impacts and to meet energy emission reduction and renewable energy targets. These policies need however to be balanced with other policy considerations including impacts on biodiversity, landscape, bushfire and amenity as discussed in the following chapters.

Chapter 8 of this Report considers where the balance or net community benefit lies in relation to these issues including cumulative impact.

Council's submission set out its broader position in relation to wind energy facilities. It seeks a pause on their approval pending further strategic planning being undertaken in the South West Renewable Energy Zone. This includes the application of buffers to townships, neighbouring properties and houses, a cap on number and density of turbines and a methodology for considering cumulative impact. It considered strategic planning in the region not sufficiently developed to ensure acceptable levels of impact. The Panel however can only assess the permit application against the provisions of the Planning Scheme as they stand.

[18] Document 20

3 Biodiversity

3.1 Background

(i) Environmental Effects Statement assessment

The Minister determined on 21 August 2017 that an EES was not required subject to conditions:

- the potential utilisation of the project site by the Southern Bent Wing Bat (SBWB) and protective measures to address predicted effects and risks
- the presence of the listed *Pterostylis orchid* species and approach to avoiding, minimising or offsetting impact.

The Project was referred to the Commonwealth Government under the EPBC Act in late 2019. A delegate for the Commonwealth Minister for the Environment determined the Project is a 'controlled action' under that Act on 22 April 2020.

(ii) Relevant information

Relevant information in relation to biodiversity includes (refer to Appendix D for more detail):

- Policy:
  - Clauses 12.01-1S (Protection of biodiversity) and 12.01-2S (Native vegetation management)
  - Clauses 21.06 (Environment), 22.02-2 (Rare and threatened species) and 22.02-8 (Flora and fauna Local Policy)
- Particular provisions:
  - Clause 52.17 (Native Vegetation)
  - Clause 52.32 (Wind Energy Facilities) which identifies:
    - a design response to include an assessment of the impact on any species listed under FFG Act and EPBC Act
    - decision guidelines relating to impacts on the natural environment
- Application materials:
  - Mt Fyans Wind Farm EPBC Act assessment documentation
  - *Flora and Fauna Existing Conditions*, Biosis, November 2022[19]
  - *Targeted Surveys and Impact Assessment*, Biosis, November 2022[20]
  - *Brolga Report*, Biosis, August 2022[21]
  - EMP Framework which identifies that the EMP will include construction and operational plans relating to bat and avifauna management and compensation, and vegetation, weed and pest management
- draft Permit conditions
- Guidelines and standards:
  - Native Vegetation Guidelines
  - WEF Guidelines (sections '2.1.1 Environmental values', '4.3.2 Application requirements for a wind energy facility', '4.3.3 Flora and fauna impacts assessment', '4.3.4 Environmental Management Plan' and '5.1.4 Flora and fauna', and model

[19] Document 7
[20] Document 8
[21] Document 9

conditions for an EMP, Construction EMP (CEMP) and Bat and Avifauna Management Plan (BAM Plan)
  - Brolga Guidelines[22]
- other legislation – FFG and EPBC Act.

The WEF Guidelines identify considerations for flora and fauna in assessing applications, including:

- whether there are any state or Commonwealth protected species
- the sensitivity of species to disturbance
- loss of habitat of protected species
- measures to minimise impact on native species.

The WEF Guidelines provide guidance on survey effort and whether planning conditions might be required for monitoring and further work.

3.2 Flora and native vegetation

(i) The issues

The key issues are:

- whether impacts to native vegetation and threatened species are acceptable
- whether suitable offsets can be provided.

(ii) Background

Native Vegetation Guidelines

The Native Vegetation Guidelines identify three key steps for land managers and owners to address when considering vegetation clearing (Clause 12.01-2S):

- as a priority, avoid the removal of native vegetation
- if the removal of native vegetation cannot be avoided, minimise the loss of native vegetation through appropriate consideration in planning processes and expert input into project design or management
- identify appropriate offset actions.

WEF Guidelines

The WEF provide guidance on survey effort and whether planning conditions might be required for monitoring and further work. If native vegetation is to be cleared it is to be undertaken in accordance with the Native Vegetation Guidelines.

Draft permit conditions

Draft permit conditions include:

- preparation of an Environmental Management Plan
- identification of maximum native vegetation removal permitted (in hectares)
- development of a Construction Environment Management Plan (CEMP), including a Native Vegetation Management Plan, prior to construction
- prohibited activities in designated areas of native vegetation
- management of native vegetation offsets.

[22] Document 210

Overview of assessments

Methodologies for flora and native vegetation assessments are outlined in the biodiversity documents attached to the planning permit application.

The Project area has ten EVCs (Table 4) and a range of scattered trees. Within the Victorian Volcanic Bioregion, these EVCs are classified as Endangered except Plains Sedgy Wetland which is Vulnerable.

Table 4 Ecological Vegetation Classes present in Project area

EVC	Bioregional conservation status	Area (Ha) in Project area	Percentage in Project area
Plains Grassy Woodland (55_61)	Endangered	4.39	0.04%
Plains Grassy Wetland (125)	Endangered	198.39	1.58%
Heavier-soils Plains Grassland (132_6)	Endangered	64.00	0.51%
Plains Sedgy Wetland (647)	Vulnerable	1.85	0.01%
Stony Knoll Shrubland (649)	Endangered	19.98	0.16%
Aquatic Herbland (653)	Endangered	8.92	0.07%
Brackish Wetland (656)	Endangered	1.04	0.01%
Tall Marsh (821)	Not defined	4.41	0.04%
Scoria Cone Woodland (894)	Endangered	1.12	0.01%
Escarpment Shrubland (895)	Endangered	4.12	0.03%
Total		**308.22**	**2.46%**

Source: Based on evidence witness statement of Mr Gibson

Three additional EVCs are present in the study area:

- Creekline Grassy Woodland on the proposed transport route
- Plains Sedgey Wetland but patches are predominantly of low quality
- Brackish Wetland occurs on the shoreline of the northern saline lakes.

Several threatened ecological communities are located within the Project area and adjoining roadside reserves:

- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHW) which is critically endangered under the EPBC Act and within Wetland 7 and adjacent to the grid connection substation
- Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP), which is critically endangered under the EPBC Act
- Western (Basalt) Plains Grassland (WBPG) which is threatened under the FFG Act.

While suitable habitats for 11 threatened flora species were identified within the Project area, only three significant flora species were confirmed through targeted surveys:

- Spiny Rice-flower, which is critically endangered under the EPBC Act and FFG Act with 35 plants recorded at the western end of the Castle Carey Road reserve
- Basalt Rustyhood, which is endangered under the EPBC Act and critically endangered under the FFG Act. It occupies stony rises and areas of Plains Grassland. Targeted surveys found no additional specimens within the Project area.

- Pale Swamp Everlasting, which is critically endangered under the FFG Act was recorded within Plains Grassland in the South Road reserve. Recorded plants were all located outside the disturbance footprint of the proposed road upgrade.

Impacts to vegetation arising from the Permit application include:

- clearance of native vegetation for construction or permanent and temporary infrastructure, cabling and vehicle movement
- clearance of up to 0.415 hectares of Heavier-soils Plains Grassland including NTGVVP arising from the proposed upgrade of South Road. All other areas of NTGVVP and WBPG are included in works exclusion areas
- up to six scattered remnant River Red Gums with a combined extent of 0.414 hectares were proposed to be removed for the transmission line.

As noted in Chapter 2, the removal of a small Blackwood tree on Coleraine Road comprising a 0.004 hectare patch of Creekline Grassy Woodland EVC may be required to enable transport during construction and will be subject to a separate permit application.

The offsets required are 0.213 general habitat units and six large trees. These are required to have a strategic biodiversity score of 0.476.

(iii) Evidence and submissions

Several submissions referred to flora and native vegetation. Submission 71 was concerned about:

- the removal of six River Red Gums to support the alignment of the transmission line, including the opportunity to gather seed for local plantings in preference to offsets
- the lack of information regarding native shelterbelts and riparian plantings funded through public programs.

DEECA's referral response indicated its satisfaction that the proposal addresses the avoid and minimise principles of the Guidelines for the proposed native vegetation removal.

The EPA's submission noted that there may be impacts to riparian vegetation and that any further loss of vegetation had the potential to increase both water and wind-borne erosion, and slightly raise runoff or alter infiltration rates. These issues are addressed in Chapter 6.3.

The Applicant submitted the project design approach sought to avoid native vegetation impacts and had resulted in a small loss of native vegetation which could be offset.

In his native vegetation evidence for the Applicant, Matthew Gibson (Co-author of the Flora and Fauna existing conditions report) identified native vegetation is patchily distributed across the Project area and surrounds and is largely influenced by the underlying geology. Newer volcanics north of the Woorndoo-Darlington Road are characterised by stony rises and low-lying areas where pasture improvement has been difficult. The farmland on the older volcanics has less native vegetation having been more extensively managed. Mondilibi Hill has Scoria Cone Woodland while the Salt Creek corridor supports a range of vegetation types associated with escarpment and aquatic areas.

Mr Gibson noted that many of the road reserves support native vegetation, particularly Plains Grassland. The Woorndoo-Dundonnell Road has high-quality grasslands while low-moderate quality grasslands exist in other road reserves, including South Road, Castle-Carey Road and Mortlake-Ararat Road. His expert witness statement contained updates to impacts on native vegetation, the Native Vegetation Removal Report and removal maps.

Threatened flora and ecological communities

Mr Gibson's evidence highlighted the threatened flora that had been surveyed:

- Spiny Rice-flower, with direct impacts on identified populations avoided through Project design
- Basalt Rustyhood was found on the Project land
- Pale Swamp Everlasting, with all recorded plants outside the footprint of proposed works and no direct impacts expected.

Mr Gibson agreed that if species were not found they were unlikely to occur but could exist in the Project area. He emphasised the survey was completed according to the Guidelines and was reasonable.

DEECA noted that it was consulted on further surveys for Basalt Rustyhood required as a condition of the 2017 EES determination and provided advice to DTP in 2018. Further detail on EPBC-listed flora is provided in Chapter 3.5.

Mr Gibson outlined the Project impacts on threatened ecological communities and their relationship to EVCs:

- WPBG applies to all patches of Heavier-soils Plains Grassland EVC and some patches of Stony Knoll Shrubland and Plains Grassy Wetland EVCs. A total of 0.409 hectares will be impacted on South Road
- NTGVVP is present within sections of Heavier-soils Plains Grassland EVC, Plains Grassy Wetland and Stony Knoll Shrubland within the wind farm study area and along roadsides. A total of up to 0.381 hectares will be impacted on South Road from within the 0.409 hectares of WBPG
- SHW corresponds with areas of Aquatic Herbland and Plains Grassy Wetland EVCs. There will be no impact on this community.

Mr Gibson stated that offsets for impacts to NTGVVP will be sourced through the offset market.

Native vegetation

Evidence and submissions regarding native vegetation management focussed on impacts arising from three aspects of the Project:

- impacts to publicly funded plantings
- upgrade works to South Road
- construction of the 220kv transmission line.

<u>Publicly funded plantings</u>

In response to submissions that raised concerns about the loss of publicly funded plantings, Mr Gibson's evidence was:

- he had assessed areas where native planting intersected with proposed infrastructure in March 2023
- where possible, landholders were consulted to determine if planting was assisted by public funding
- where information was unavailable and Victorian native species typical of Landcare plantings occurred, they were assumed to be publicly funded
- eight locations were identified where impacts on publicly funded plantings could not be avoided, equating to a total of 0.15 hectares

- scores were influenced by non-indigenous species being planted in these areas and several areas were considered not to be in good condition.

The Applicant provided an updated Native Vegetation Removal Report[23] which estimated the total area of native vegetation to be impacted at 0.977 hectares including six large trees. It increased the general habitat units within the general offset amount from 0.213 to 0.225 and reduced the required minimum strategic biodiversity value score from 0.476 to 0.452.

DEECA noted that this represented an increase from the 0.833 hectare identified in the permit application, and that it had not had the opportunity to review and assess it.

South Road Grasslands

As discussed in Chapter 7.1, Council has requested South Road be sealed and widened to 6.2 metres for approximately 6 kilometres from Ararat Road. Some vegetation loss in the South Road reserve is anticipated if the road needs to be upgraded. Council vegetation mapping identified medium and low conservation levels in this area. Mr Walley outlined the proposed upgrade works to South Road in his traffic evidence for the Applicant. He advised the Panel that, with the exception of the bridge, the road width was sufficient to allow the passing of two vehicles and further road widening was not required.

In his evidence, Mr Gibson noted:

- survey and mapping for the grassland on South Road was undertaken in July 2021
- the Heavier soils Plains Grassland EVC on South Road corresponds with the WBPG community
- a subset of this area (0.381 hectares) corresponds with NTGVVP
- the extent of the impact on South Road has been revised slightly down to 0.409 hectares
- the Plains Grassland EVC provides habitat for the Striped Legless Lizard (Vulnerable under EPBC and Endangered under FFG).

In its referral response, DEECA noted that:

- detailed design was still required for the South Road upgrade work and the Applicant was not proposing to account for additional indirect loss to mapped native grassland
- it was concerned about consequential losses of this vegetation after construction arising from fragmentation and further weed invasion
- it encouraged further micro-siting of infrastructure through detailed design to reduce the loss and proposed the development and implementation of a Native Vegetation Plan to avoid further impacts to these patches
- the grasslands in the eastern patches along South Road were of low quality and losses would be relatively minor.

Council identified the presence of native vegetation, including grassland that supports Striped Legless Lizard habitat, adjacent to the South Road bridge. It submitted the gravel shoulders and table drains should be designed to minimise any disturbance or removal and if removal is required may need to seek separate planning permission.

In its closing, Council provided information on the recent history of South Road, indicating it had assessed the road condition of South Road as poor in November 2015. Its reconstruction involved removal of the seal, widening the road formation to 6 metres and leaving it unsealed to make it

[23] Document 290

safer and fit for current traffic volumes. The works were completed in November 2021. Council did not provide information on vegetation impacts from these works.

The Applicant's final version of permit conditions included a condition requiring that removal of native vegetation to be minimised during the detailed design of South Road.

River Red Gums

During cross-examination, Mr Gibson was asked about the age and significance of the River Red Gums proposed to be removed for the transmission line. He stated the age was unknown and difficult to determine, and this was not a consideration for the assessment of native vegetation. He agreed however it would be good to avoid the removal of the six trees.

Mr Gibson noted that the River Red Gums could provide short term roosting habitat for microbats.

The Applicant submitted:

- revised plans showing the realignment of the transmission line to avoid the six trees[24]
- amended Permit conditions to require avoidance of removal of the six trees.

Offsets

Mr Gibson recommended the inclusion of an additional permit condition to allow for reconciliation of offsets following construction. He acknowledged the estimated extent of native vegetation removal and corresponding offset requirement is highly conservative, and there is likely to be scope to reduce construction impacts during the detailed design phase.

DEECA expressed confidence that the offsets could be secured but noted it had not assessed the additional 0.15 hectares of native plantings described in Mr Gibson's evidence. It also stated further changes in the location and extent of native vegetation losses was possible as the detailed design and construction footprint is finalised. Any reduction in the native vegetation removal footprint would need to be recalculated with surplus offset credits available to be unallocated and banked or sold on by the Applicant.

Mr Gibson recognised that offsets were available but had yet to be secured. He identified offsets for impacts to EPBC-listed communities would need to be sourced through the offset market. The offsets could be located within the GHCMA boundary and the Moyne and Southern Grampians municipalities.

Mr Cumming expressed concern at the potential extent of native vegetation impact, the suitability of offsets and the ability of Council to enforce permit conditions. He cited the extent of on-ground works undertaken for the Dundonnell WEF and the apparent delays in providing offsets, and provided a photograph of the extent of those works.[25]

(iv) Discussion

Planning policy

The Panel considers that the Applicant has applied the Native Vegetation Guidelines appropriately to ensure minimal impacts to native vegetation. It agrees with DEECA that the Project has adequately addressed the avoid and minimise principles of the Native Vegetation Guidelines.

[24] Documents 242 and 242a

[25] Document 277 slide 9

Threatened flora

The threatened flora species confirmed through targeted surveys are of high conservation significance, but are not located in areas directly impacted by the Project. It is noted that the Spiny Rice-flower on Castle Carey Road has been included in a works exclusion area.

While the potential exists for the Project area to host further threatened flora, no substantial concerns were put forward and the Panel is satisfied that the methodology and level of survey effort was reasonable.

Native vegetation management

The Project will result in generally minor impacts on native vegetation.

Impacts to ecological communities

The Panel is satisfied that there will be no impact on the SHW community.

The Project will impact grassland communities listed under both the FFG Act and EPBC Act and located in the Heavier-soils Plains Grassland EVC on South Road:

- 0.409 hectares of WBPG community will be impacted
- 0.381 hectares of NGTVVP community will be impacted within the 0.409 hectares of WBPG.

These impacts are relatively small and are acceptable subject to the implementation of effective controls for proposed works and securing of appropriate offsets. However, efforts should be made to reduce the area of impact where possible.

South Road

While the Panel notes the need for appropriate traffic management and access, it needs to be balanced with other considerations including impacts on the environment.

It is unclear whether DEECA was consulted on Council's South Road works which were undertaken after the March 2021 vegetation survey and the impacts of these works on areas of critically endangered grassland. This heightens the need to protect remnant grasslands on South Road where possible, consistent with the opinion of Mr Gibson that the vegetation is worth saving, and Mr Walley's opinion that the current pavement is adequate.

The Panel accepts there is a need to upgrade the South Road bridge to address flooding and potentially widen portions of the road to accommodate passing and heavy vehicle turning. On balance however, its entire widening and reconstruction for 6 kilometres is excessive considering the potential loss of critically endangered grassland and its associated habitat values.

Detailed design of the upgrades should be informed by appropriate ecological inputs to ensure potential grassland impacts are minimised potentially by providing narrower widths, shifting the alignment of the areas of road to be widened and protecting areas of greater significance from disturbance. This is a level of design detail that can be managed through permit conditions.

Also of concern is the proposed impact to areas of NTGVVP arising from upgrades on South Road which will reduce the size of several patches so that they no longer meet the 0.05 hectare threshold to qualify for national listing. While an additional area of 0.033 hectares has been included to account for this in the total area of 0.414 hectares, the Panel considers that the need to maintain the integrity of these patches to prevent their loss from national listing should be a

priority in any further detailed design process for South Road. Again, this is a level of design detail that can be managed through permit conditions.

The Panel agrees with DEECA that further indirect losses of mapped native grassland are likely to occur post-construction from fragmentation and weed invasion, and that opportunities for further micro-siting of infrastructure in the detailed design process to avoid and minimise vegetation losses should be pursued. DEECA's requirement for a Native Vegetation Plan as part of a Construction Environmental Management Plan to avoid further losses to these patches of grassland is supported and included in the proposed permit conditions.

River Red Gums

The Applicant has responded to concerns about the impacts to the six River Red Gums by realigning the 200kv transmission. The Panel notes the compromise inherent in this outcome through the additional visual impact created, however on balance retention of the trees is a better outcome. This is discussed in more detail in Chapter 4.

The Panel observes the six trees were not identified as significant in CHMP 12657.

Publicly funded plantings

The Panel accepts Mr Gibson's assessment of areas of publicly funded planted vegetation to be impacted. However, such plantings can make a substantial contribution to the diversity of resident and transitory native species that agricultural land can support. The Panel encourages local sourcing of offsets derived from the loss of plantings to assist the capacity for local agricultural land to support biodiversity.

Offsets

An updated Native Vegetation Removal Report will need to be prepared, to calculate the offsets required following the retention of the six River Red Gums. DEECA needs to review the calculations for offsets in response to losses of planted vegetation.

The Panel notes the potential for the required offsets to change in response to detailed design and construction footprints. It is satisfied that this can be addressed by the Applicant in consultation with DEECA, consistent with the Applicant's final version of conditions, without the need for an additional reconciliation condition.

(v) Conclusions and recommendations

The Panel concludes:

- The Project generally addresses the 'avoid' and 'minimise' principles of the Native Vegetation Guidelines for the proposed extent of native vegetation removal. The conditions proposed including for offsets are generally appropriate. An updated Native Vegetation Removal Report will need to be prepared to calculate the offsets required with the retention of six River Red Gums.
- Impacts to threatened ecological communities and native vegetation are acceptable and can be managed subject to the development and implementation of effective mitigation measures through permit conditions generally consistent with those included in the Applicant's final version, but with changes to the DEECA conditions for a native vegetation management plan to ensure the retention of a minimum extent of listed grassland.
- In terms of vegetation offsets:

  - DEECA should have the opportunity to assess additional vegetation losses arising from proposed impacts to areas planted with public funding prior to finalising offsets
  - offsets required for the loss of publicly funded planted vegetation should be sourced locally to assist the capacity for local agricultural land to support biodiversity
  - these outcomes can be achieved through the draft permit conditions.
- South Road requires the upgrade works to achieve acceptable outcomes for threated vegetation communities. These impacts can be managed through permit conditions as discussed at Chapter 7.1.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Amend the Department of Energy, Environment and Climate Change (Environment Portfolio) condition for a Construction Environmental Management Plan including Native Vegetation Plan to include areas of listed grassland to be avoided to ensure their extent remains above 0.05 hectares**
- **Amend the traffic upgrade works condition to require the design of South Road and bridge upgrades to minimise the environmental disturbance to listed native grasslands.**

3.3 Southern Bent-wing Bat

(i) The issues

The issues are:

- whether the assessment of impacts on SBWB is adequate
- whether impacts on SBWB can be appropriately mitigated to an acceptable level.

(ii) Background

In addition to the Flora and Fauna Existing Conditions and the Targeted Surveys and Impact Assessment the following documents accompanied the permit application:[26]

- *SBWB Survey Supplementary Report*, Gavin Thomas May 2019
- *SBWB Roosting Habitat Assessment*, Biosis September 2020
- *SBWB Adaptive Management Plan*, Biosis November 2022
- EPBC Act assessment documentation and additional documents including:
  - Appendix 3 Mount Fyans Southern Bent-wing Bat Survey
  - Appendix 6 Microbat Acoustic Surveys Data.

The SBWB is listed as critically endangered under the EPBC Act and FFG Act. The methodologies used to investigate the occurrence and potential impacts on SBWB are detailed in application assessments including the EPBC Act Assessments. Key findings were:

[26] Documents 7, 8, 10, 33, 36, 28, 31 and 34 respectively

- the Project area is not in close proximity to known roost sites. It is located approximately 50 kilometres northeast of the Starlight maternity cave (a sea cave) and 35 kilometres northeast of non-breeding roosts at Panmure and Grasmere
- SBWB are present in the Project area although there are no significant roosting or maternity cave sites present, and none of the inspected cavities were considered suitable habitat for a significant roosting site
- call activity data indicates that a roost may exist within the vicinity of the Project area, but is unlikely to contain significant bat numbers
- on occasion, SBWB individuals may temporarily use some of the cavities or man-made structures (such as bridges or culverts) while foraging in the Project area
- SBWB are found more often around identified specific habitat and wetland sites at Down Ampney/Mondilibi Hill, the Down Ampney Laneway Paddock and Walmsley Dam
- the number, timing, location and distribution of bat calls detected are commensurate with bats intensively foraging for short periods of time when wind speed conditions permit. Foraging is mainly conducted at locations that support specific habitat or have wetlands
- there is a very low to negligible risk of the Project area being within migration paths associated with annual movements to and from nearby maternity roost sites or travel paths associated with movements between non-maternity roost sites
- there is a low to unlikely risk of turbine collisions causing a significant impact due to:
  - the overall low number of calls detected within the Project area
  - turbines being remote from foraging locations and areas of increased call activity
  - the preference of bats to fly in lower wind speed conditions and the percentage of time that bats are estimated to be able to fly in low wind speed conditions at rotor-swept height when the blades are rotating.

SBWB mitigation measures include:

- an 800-1200 metre buffer to high activity locations and a 200-metre buffer to landscape habitat features and avoid areas with the highest potential to be foraging sites
- low wind speed curtailment which requires turbine operation to halt at wind speeds of less than 3.5 metres per second (m/s)
- a BAM Plan which includes a SBWB Adaptive Management Plan (AMP) prepared in consultation with the National SBWB Recovery Team with key components including:
  - explanatory information and rationale underpinning the design and management of the Project that are intended to avoid and minimise impacts
  - completion of a population viability assessment (PVA) to determine a Significant Impact Trigger (SIT) above which the population of the species is likely to decline
  - a mortality monitoring program designed to develop an annual impact assessment to compare against the SIT
  - triggers for responses to SBWB mortality involving additional surveys, curtailment and investigation
  - cash offsets through a SBWB Offset Research Fund to support scientific research or management activities to assist with their management and protection.

Draft permit conditions

Draft permit conditions include the requirement for a BAM Plan requiring mitigation and monitoring for the SBWB. The BAM Plan is to contain:

- objectives and an overall strategy for minimising bat strike

- a mortality monitoring program of at least three years that includes reporting of strikes on and information on the efficacy of bat carcass search
- procedures for the regular removal of carcasses
- reporting findings of the completed monitoring program contained in the BAM Plan and provision for further investigation.

(iii) Evidence and submissions

SBWB ecology and utilisation of the site

Mr Venosta's evidence was very few SBWB bat calls were recorded within 30 minutes following sunset and 54 calls were recorded within 1 hour of sunset during the 2017-2018 survey periods. This indicated that a roost may have existed within the vicinity of the Project at that time. He noted the patterns detected by call surveys and concluded this suggested recorded activity at these sites is predominantly from single or smaller numbers foraging around the detector area across the night. There was potential that the recorded activity represented a single bat making multiple passes at a detector as it foraged within the area over a short period, and it is likely that total call activity recorded at foraging sites over-represents the number of SBWB using these sites.

DEECA considered the level of SBWB activity detected at the site was considerable despite the assessment provided and advised the scientific understanding of it had expanded in recent years. There are significant concerns about current population impacts with projected declines of up to 97 per cent over the coming decades if current survival rates did not improve. Mr Venosta agreed the projected decline was precipitous.

DEECA identified recent research indicating the complexity of activity between sexes and among age cohorts in the SBWB population and a new understanding of the patterns, seasonality and scale of movement. This included evidence of it moving between caves 70 kilometres apart over successive nights and individuals flying up to 85 kilometres from caves each night. Mr Venosta acknowledged this in his presentation.

DEECA submitted that research on the Warrnambool SBWB population shows it is highly mobile and revealed a general nightly foraging pattern of movement trending northeast from roosting caves. It was therefore likely that the bat activity detected in the Project area is associated with foraging activity and movements by the SBWB population that use the Warrnambool maternity cave and several associated non-breeding caves in the region. Despite the failure to confirm additional roosting sites in the area, the detection of a SBWB call at the Project site just 26 minutes after sunset suggested the possibility that unidentified roosts used by small numbers of bats occur in closer proximity than the known sites around 35 kilometres away.

Impacts

Mr Venosta stated the Project design avoided many of the risks to SBWB associated with proximity to major roost and maternity sites and their likely associated flight paths. There was a very low or unlikely risk of the Project being within migration paths associated with annual movements to and from the maternity roost, and within travel paths associated with movements between non-maternity roost sites. He noted the avoidance of turbines in the newer volcanic landscape to the northern section of the Project area, which contained a high density of permanent and seasonally inundated wetlands and had the greatest potential for foraging by SBWB. The buffers applied to Brolga breeding and flocking sites would also benefit SBWB as they include wetlands with potential SBWB habitat.

DEECA supported the proposed application of 200- metre turbine-free buffers from potential SBWB habitat features and greater buffers for higher SBWB activity areas as confirmed during the microbat surveys. It noted the potential location of River Red Gum habitat located within the 200 metre buffer of at least one turbine, but the image resolution made it difficult to determine whether some turbine locations are located within or on the boundary of the buffer. DEECA recommended a site plan clearly marking SBWB higher activity areas, identified habitat features and the relevant buffer distances to these features to clearly demonstrate that all potential habitat features at the site have been appropriately buffered and to assist in further planning and operational processes.

DEECA accepted the avoid first principles had been addressed through the design, but further commitment to mitigation measures (including targeted low wind speed curtailment) was recommended. DEECA submitted that SBWB mortalities have occurred at Victorian wind farms and the sensitivity regarding impact assessment and mitigation had heightened due to factors affecting survival rates. It confirmed at least three further SBWB mortalities had been detected through post-construction monitoring since 2019, highlighting the potential for cumulative impacts, and noted three additional mortalities identified in 2022 during a curtailment study.

Mr Venosta advised that since the preparation of his evidence, he had become aware of eight additional mortalities from operational wind farms in south-west Victoria, recorded during Autumn 2023. This brought the total confirmed mortalities at Victoria wind farms to 21.

DEECA said detected mortalities represent only a small fraction of overall mortality and cited research by Maloney and Ors[27] that examined pre-construction mortality programs for 15 Victorian wind farms). The research identified that at one Victorian wind farm, one discovered SBWB mortality was estimated to represent plausible mortality estimates of up to 70 individuals each year. The research noted that post-construction mortality monitoring only occurs for a very small proportion of the operational life of a facility, generally between two to five years of an approximate 20 to 30-year facility life. DEECA therefore considered that accounting for only 'some additional mortalities' in addition to the confirmed SBWB mortalities did not provide an evidence-based approach to assessing that the cumulative level of impacts is 'unlikely' to affect the viability or conservation status of the SBWB, or that cumulative impacts are unlikely to interfere with species recovery efforts. DEECA submitted there was considerable uncertainty in fully determining population-level impacts.

Mr Venosta agreed that the findings presented in Maloney indicate that current monitoring data is unreliable.

DEECA noted that the recently detected SBWB mortalities have occurred at operating wind farms located a considerable distance from known key roosting and maternity sites. The resulting limitations in assessing risk were acknowledged. While the assessment states the risk of significant impacts is low, DEECA considered that the risks are uncertain, and that measures to minimise the risk of significant impact to the SBWB population are unresolved.

Mitigation of impacts

<u>Curtailment</u>

[27] Investigation of existing post-construction mortality monitoring at Victorian wind farms to assess its utility in estimating mortality rates, Maloney, Lumsden and Smales, 2019

Targeted turbine curtailment involves increasing the wind-speed at which turbines begin to turn and produce energy during peak bat activity periods, which are in low wind speed conditions.

DEECA submitted that without implementation of minimisation measures (such as targeted curtailment), the Project would likely have a significantly different assessment of risk to the SBWB. It cited a growing body of evidence that shows that a cut-in wind speed is the single most significant factor in explaining bat mortality at wind farms, and showing that increasing cut-in speed through curtailment significantly reduces mortality across species. It suggested the wind-speed and bat activity data collected along with the growing body of scientific literature available to inform potential cut-in speeds would ensure specific curtailment measures implemented were not 'arbitrary' or 'purely precautionary' as stated in the documentation. In this light, DEECA noted it had considered a very focused and targeted turbine curtailment approach defined in terms of seasonal periods, daily hours and wind speed. This would be effective in reducing mortality of insectivorous bats including SBWB. Without implementation of minimisation measures (such as targeted curtailment), the Project would likely have a significantly different assessment of risk to the species. DEECA did not explain the details of the approach they had been considering.

Mr Venosta's evidence was with the exception of low wind speed curtailment, all mitigation methods assessed for SBWB were deemed to have limited applicability due to their experimental nature and difficulty in accurately identifying SBWB from acoustic calls and imagery. These included deterrent techniques, radar, thermal and acoustic triggered shut down and re-start. He noted the issues affecting the direct translation of the use of curtailment for other wind farms to the Project, and that the degree of effectiveness is yet to be determined. The Trigger Level 1 and Level 2 curtailment investigations at other wind farms may provide an opportunity to collect such data on the effectiveness of curtailment.

DEECA considered the proposal had not adequately resolved potential tensions between implementing minimisation strategies for SBWB and other operational objectives. It submitted that without implementation of minimisation measures (such as targeted curtailment), the Project would likely have a significantly different assessment of risk to the SBWB.

DEECA did not support experimental approaches to mitigation. It cited a growing body of evidence that shows that a cut-in wind speed is the single most significant factor in explaining bat mortality at wind farms, and increasing cut-in speed through curtailment significantly reduces mortality across species. It supported a commitment to implement targeted turbine curtailment and noted both the Applicant's concern to consider the impacts of curtailment on wind energy generation and a range of statements in the documents which appear to provide qualified support for curtailment. It encouraged a clearer commitment to the proactive implementation of this measure in the AMP.

Council suggested that reducing turbine operation in periods of low wind speed when bat activity is higher coincides with periods of more marginal energy generation. It submitted that in the face of uncertainties and issues, a condition should be imposed requiring curtailment based on seasonal movements and low wind speeds. While Council expressed support for curtailment, it also expressed concern for its implementation as described in the AMP, including that mortalities of SBWB should occur before curtailment is introduced.

Mr Venosta agreed that curtailment was highly effective in the mitigation of impacts to microbats and can be cost-effective. He agreed that 7 m/s is the wind speed at which a change in bat activity appears to occur, although there is no evidence that it is effective as a curtailment trigger and

there is not enough mortality data. He considered there is no reason to think curtailment may be less effective for SBWB, although he noted they are more robust than other microbats, can fly higher and may respond differently.

DEECA did not support the proposed experimental approach to curtailment and cited the research conducted to date, the challenges of monitoring mortalities and the risk of a small number of mortalities representing a significant impact.

Adaptive Management Plan

DEECA expressed several concerns regarding the effectiveness of the proposed Level 1 and Level 2 impact triggers outlined in the AMP, which would curtail single turbines in response to mortality:

- further evidence was required to support the effectiveness of this approach, citing the potential for a currently undefined number of SBWB mortalities to occur without seeing either broad implementation of curtailment or a Level 2 impact trigger if the mortalities occurred across different turbines
- mortalities have a poor likelihood of detection using current methods and, given a very small number of mortalities may represent a significant impact on the SBWB, they may not be detected in the post-construction monitoring period to trigger appropriate mitigation
- the triggers only provide opportunities for detecting and minimising impacts to SBWB during the post-construction monitoring period, after which there is no mechanism to manage residual risk to the SBWB even if significant impacts occur over the Project life.

Mr Venosta agreed that under the proposed conditions for a Level 2 trigger, there could be a single mortality at four different turbines located close together and this would not satisfy the trigger for additional mitigation. He agreed that curtailment speed is able to drop back to its previous level after the relevant investigations are completed and clearer wording was required to require work to be completed before curtailment speed is reduced.

Council expressed concern regarding the implementation of the curtailment mitigation measures in the AMP.

Mr Venosta noted that incident investigations will lead to further adaptive management if the significant impact trigger was reached or exceeded.

DEECA noted the limitations of monitoring timeframes in the context of the operational life of the Project. It was critical that monitoring and any responses to BAM Plan triggers are appropriately addressed because after monitoring ceases there were no further regulatory processes for implementing mitigations to manage biodiversity impacts over the operational life of the Project.

Council submitted that in *Naroghid,*[28] the inadequacy of the information provided in relation to impact on SBWB meant that the Tribunal could not conclude whether or not the potential impact could be addressed by way of permit condition, and that this Project suffers from similar inadequacies.

PVA and cumulative impacts

DEECA submitted the proposed approach of using PVA to inform the assessment of impacts was suggested by it to provide a more evidence-based approach to informing the SIT set out in the AMP. DEECA noted the challenge with the PVA will be to decipher 'deleterious' impacts referred

[28] *Naroghid Wind Farm Pty Ltd v Minister for Planning* VCAT 800 (Document 154)

to in the AMP from an already steeply declining population trajectory for SBWB, and meaningfully accounting for cumulative impacts from other wind farms across the species range. It advocated for the application of the precautionary principle to prevent significant impacts as per the FFG Act and that mortality rates should not hinder recovery efforts in addition to the Project not leading to population decline.

Council submitted that the AMP depends on a PVA which is subject to considerable uncertainty due to the challenges presented by a declining population, limitations on PVA input data as described by Maloney and the inability to consider the cumulative effects on SBWB. This highlighted the lack of a coordinated approach.

Mr Venosta agreed that the effectiveness of the SIT relies on the PVA. There would be an annual review of the PVA. It would be useful for generating adequate information about the impacts on the population from other projects to be included at that time. The Applicant submitted the PVA takes the impacts from other projects into account.

Parties agreed that a PVA is only as good as its inputs and acknowledged the issues evident through the work of Maloney.

Council highlighted the uncertainty which flows from not having a PVA and that there was room for disagreement in the way a PVA is completed. It asserted the data currently available could not create a confident understanding of the impacts of individual or multiple projects. At this stage the PVA could only be undertaken on a project basis, requiring the impact of a single wind farm to be very high and affect the population on its own.

Mr Venosta opined that the use of PVA to determine what constitutes a significant impact provides a more informed approach than the subjective DEECA criteria for critically endangered species. The population inputs for the current PVA require some further resolution as the SBWB impact data available to date cannot be annualised and is insufficient to model impacts. He noted that DEECA supports the use of PVA for ascribing SIT and the only option was to run PVA scenarios to explore ranges of mortality. He advised the PVA process is in train and will be provided to DEECA for consideration when available, with the agreed trigger to be incorporated into the AMP.

Mr Venosta agreed that there are a number of matters that require attention for the PVA and that improvements to monitoring are being made on a project-by-project basis.

(iv) Discussion

The Minister's EES decision required the investigation of the utilisation of the Project area by SBWB and specific measures intended to address predicted effects and risks to the SBWB.

SBWB ecology and utilisation of the site

The considerable level of uncertainty regarding the behaviour and movements of SBWB is presented through submissions and evidence. While it is clear SBWB is present on the site, the utilisation of the Project area by SBWB is not well understood.

The emerging understanding of the ecology of the SBWB has informed the Panel's approach to consideration of impacts. In particular, the projected population decline of 97 per cent over the coming decades and the recognised complexity and range of SBWB movement. The detection of three SBWB calls within 30 minutes after sunset indicates roosting may occur in closer proximity to the Project area than known roosting sites.

Contrary to the Applicant's suggestion that the Project area is not subject to high levels of use (with which DEECA disagreed), the Panel is persuaded that both the level of SBWB activity detected, and the proximity of known and potential unknown roosting and maternity sites are sufficient to warrant the application of the precautionary principle.

Impacts

The Panel agrees with DEECA that the impacts, and therefore the risks, to SBWB arising from the Project, are uncertain.

While wind energy facilities cause direct impacts to microbats through collisions, the extent of impacts is unclear. There is considerable uncertainty regarding:

- the number and source of SBWB individuals accessing the site and their flight paths
- the behaviour underpinning utilisation of the site, including flights at rotor-swept height
- the impacts on bat populations arising from current challenges with monitoring data.

Of concern is the research by Maloney which identified detected numbers of SBWB may underestimate annual mortality by a factor of up to 70, and may present a more significant impact on the population. In addition, there appears to be no agreed methodology to assess cumulative impacts and other threats to the SBWB population.

The Panel notes the breadth of matters for consideration in the EPBC Act Policy Statement 2.3 Wind Farm Industry. The Policy's need to consider any impact in the context of the population of the threatened species underpins the Panel's view the Applicant's SBWB PVA currently underway is fundamental to considering SBWB impacts.

The Applicant has sought to avoid and minimise impacts on SBWB through the location of turbines and the creation of buffers around sites of high SBWB activity and key habitat features. The suggestion by DEECA for a site plan to show areas of higher activity, habitat features and buffers to assist planning and operations is supported.

The location of turbines and the creation of buffers provides a degree of separation from turbines and the use of foraging and potential roosting habitat. However, the application does not explicitly address the movement of SBWB within or through the site and the potential impacts arising from this. While consideration of potential SBWB movement corridors is included as part of the incident investigations proposed at Trigger Level 1 in the AMP, it only appears to have been considered in the design of the Project with regard to migration, perhaps due to there being no foraging movement data available. In addition, recent information about SBWB movement appears not to have been considered. As such, the application does not include sufficient information on habitat and movement corridors consistent with Clause 52.32-4 of the Planning Scheme.

To address this, the Panel considers the BAM Plan and an assessment of habitat and movement corridors and an AMP is required, before the permit is further considered.

Mitigation of impacts

The proposed mitigation of impacts involves the application of wind speed curtailment through an AMP via mortality-based triggers.

<u>Curtailment</u>

The Applicant's review of other mitigation options concluded none are suitable, and DEECA does not support experimental options. Only low wind-speed curtailment was agreed to be achievable

and effective. The Applicant's concerns regarding the effectiveness of curtailment for SBWB are not considered sufficient to prevent its adoption.

The Panel notes the Applicant's qualified support for curtailment and concerns for energy-generation losses as outlined in EPBC Act documentation. Given curtailment appears to be the only substantial mitigation option available for a critically endangered species, the Panel considers that curtailment is a priority.

The implementation of curtailment measures through the AMP is discussed below.

Adaptive Management Plan

The Panel acknowledges the effort invested in developing the AMP. However, the proposed process raises issues that need to be resolved to provide the necessary confidence that it will be effective in preventing a significant impact on SBWB.

The PVA will:

- allow a cumulative impact assessment on the SBWB as it will take impacts from other projects into account
- set the SIT
- assist in understanding the effectiveness of mitigation measures

The PVA is underway and central to the AMP, yet was not provided to the Panel. This has prevented the Panel from fully understanding the potential impact on the SBWB population, the effectiveness of proposed measures or the cumulative impact. It is not appropriate to leave its development to a permit condition when the potential impacts are unclear or inform decisions around turbine placement.

Other uncertainties include:

- the AMP is a draft and subject to ongoing consultation with the National SBWB Recovery Team whose support is unclear
- there is the potential for failure of curtailment triggers if mortalities occur across multiple turbines or carcasses are not detected
- there is uncertainty as to whether curtailment applies to enough turbines to reduce risk to acceptable levels
- it is unclear what other options are available beyond curtailment and regarding adaptive management options to be implemented if the SIT is reached.
- there is a lack of detail to guide or justify reductions to curtailment and what evidence is required.
- the application of two curtailments of 1.5 m/s second would lead to a maximum curtailment after the Level 2 trigger of mortalities had been reached. If it is assumed that the cut-in speed is 3.5 m/s, this equates to a maximum curtailment wind speed of 6.5 m/s. It is unclear why this has been chosen considering the evidence provided regarding the threshold wind speed of 7 m/s.

Further, there is the potential for impacts to occur beyond the proposed 3-year duration of the monitoring program and go undetected with no mitigation. The proposed mechanism aimed at extending the monitoring program subject to mortality-based triggers is noted. However, a precautionary approach to monitoring and reporting requires being responsive to year-to-year variability as acknowledged by Mr Venosta, to climate variability such as El Nino events and predicted impacts of climate change over the life of the Project. As such, the monitoring should

provide information on mortality to assist the implementation of curtailment measures for the life of the Project.

Cumulative impacts

As with other aspects of the proposal, there is no consistent process to assess the cumulative impact on SBWB. The information provided has not enabled an appropriate level of consideration of cumulative impacts. This level of uncertainty further supports applying the precautionary principle, and requiring further assessment of the Project's potential impacts on the SBWS before the Permit application is further considered.

(v) Conclusion and recommendations

The Panel concludes:

- Based on the information provided, the potential impacts on SBWB are not able to be adequately considered including habitat and movement corridors as required in Clause 52.32.
- Insufficient information regarding potential impacts on the SBWB and mitigation measures leads to a level of uncertainty that prevents the Panel from having the necessary level of confidence that significant impacts will not occur. This includes from the cumulative impacts of the Project and from other wind farms.
- Further information is required prior to further consideration of a permit:
  - identify potential impacts and mitigation measures arising from SBWB movement within and through the site
  - completion of both the AMP and PVA for SBWB. The AMP should address the concerns outlined in this Report and provide a clearer commitment to curtailment
  - completion of a BAM Plan as identified in Chapter 3.5.

The Panel recommends:

Before further considering Planning Permit Application PA1800406, direct the Applicant to provide the following further information to the satisfaction of the Department of Energy, Environment and Climate Change (Environment Portfolio):

a) Further assess potential impacts and mitigation measures arising from Southern Bent-wing Bat movement within and through the site.

b) Complete the Adaptive Management Plan and Population Viability Analysis for Southern Bent-wing Bat. The Adaptive Management Plan should address the concerns outlined in this Report and provide a clearer commitment to curtailment.

Providing the further information satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Pemit for the proposed development subject to the Panel's version of planning permit conditions in Appendix F conditions:

a) Amend the Development Plans condition to:

- **relocate the transmission line to avoid that part of the Walmsley Dam Brolga breeding disturbance buffer located south of South Road, and any associated turbine micro-siting**
- **micro-siting of any turbines and associated footings to avoid breeding and flocking buffers**

b) Amend the Brolga Compensation Plan to:

- **include linkages to the Bat and Avifauna Management Plan mortality monitoring program and apply a minimum upper limit of 7.9 projected collisions (this will not be required if further work is undertaken as recommended and identifies an alternative compensation approach)**
- **provide for annual mortality monitoring and reporting for the first five years of the Project then every 5 years thereafter.**

c) Review the final planning permit conditions to ensure they apporiately respond to the findings of the additional assessments and documents provided.

3.4 Brolga

(i) The issues

The issues are:

- whether the assessment of impacts on Brolga is adequate
- whether a net zero impact on the Victorian Brolga population can be achieved and cumulative impacts avoided
- whether impacts on Brolga can be appropriately mitigated to an acceptable level.

(ii) Background

Brolga Guidelines

The Brolga Guidelines are central to the consideration of potential impacts to Brolga. While they are not a reference document in the Planning Scheme, they have been used for assessing Brolga impacts for all wind energy facilities since their release.

The Brolga Guidelines seek to manage the cumulative impact of multiple wind energy facilities within the Brolga's range in Victoria so that there is no 'net effect' or, ideally, a positive effect can be achieved for the population. The specific objective of the guidelines is that individual wind energy facilities have, at a minimum, a zero net impact on the Victorian Brolga population.

The Brolga Guidelines recommend a three-step an assessment framework:

- Level 1 assessment – Preliminary risk assessment within 10 kilometres including desk top studies of known and potential habitat area, field inspection and collection of local knowledge through liaison with local community groups and landholders.
- Level 2 assessment – Detailed investigation and impact assessment on Brolga within the 10-kilometre radius of investigation (ROI) to identify breeding and flocking home ranges, flight behaviour data for collision risk modelling (CRM) and assessment of potential impacts.
- Level 3 assessment – Mitigation for zero net impact to avoid or mitigate impacts to breeding and flocking home ranges through turbine-free buffers, collision risk modelling for Brolgas utilising or moving through the ROI, PVA to estimate impact and compensation strategies.

To remove any significant impact on Brolgas within their breeding and non-breeding home ranges, the Brolga Guidelines recommend a default buffer of 3.2 kilometres around Brolga breeding sites and 5 kilometres from flock roost sites. An additional 300 metre radius around each home range is required to avoid disturbance effects. Reduced buffers may be

proposed if they can be shown to meet the objectives for breeding and non-breeding habitats to the satisfaction of DEECA.

Draft permit conditions

Draft permit conditions include:

- a BAM Plan within the DEECA EMP condition which includes objectives and strategies for minimising bird strike, mitigation measures, mortality monitoring and carcass removal and reporting
- a Brolga Compensation Plan (BCP) which includes identification of at-risk locations, mortality-based triggers for mitigation measures, responsibilities for implementation and monitoring, processes for selection and enhancement of Brolga breeding wetlands, a fox control program, monitoring and reporting.

Brolga Report

The Brolga Report assesses the impact on Brolga based on the Brolga Guideline three level assessment approach. A high-level summary of the assessment is provided below, and a detailed outline is included at Appendix E.

Level 1 assessment

Database records were mapped and examined within the ROI including the Victorian Biodiversity Atlas (VBA), Birdlife Australia Atlas and Southwest Victorian Brolga Flocking Site Database.

Landowner surveys were undertaken by the Applicant with 42 landowners within a 5-kilometre radius between May 2013 and March 2014 (including six site visits). 10 Brolga breeding sites and one flocking site were identified.

Level 2 assessment

The Level 2 assessment included:

- aerial surveys in the ROI
- home range surveys in late 2009-early 2010
- home range analysis which found the average home range was between 31 and 35 hectares and Brolgas will be within 600 metres of the centre of their home range whilst incubating, brooding and rearing fledglings for 95 per cent of the time
- additional flocking habitat assessment at Lake Sheepwash and three other sites where larger numbers of Brolga had been reported but which the then DELWP accepted were unsuitable flock roost sites:
  - Site A to the west of Lake Barnie Bolac
  - Site B, a salt lake with minimal vegetation, and considered a day roost site
  - Site C, not considered a flocking site as it does not hold water over summer and no flocking records were observed from 1980 to 2007
- additional breeding habitat assessment of three sites identified through community consultation and monitored by the Applicant:
  - Site 1 on Salt Creek off Castle Carey Road – no observations and no evidence of breeding, and assessed as unsuitable habitat for breeding
  - Site 2 – a known breeding site south off Woorndoo-Dundonnell Road and used as a reference site for Site 1. No observations and no evidence of breeding found

  - Site 3 in the north of the study area to the east of Mortlake-Ararat Road – assessed as unsuitable for breeding as it was unlikely to hold water long enough
- confirmed sites:
  - flocking sites within 10 kilometres of the Project area including Lake Barnie Bolac, Long Dam and Lake Sheepwash
  - four breeding sites could be affected by the Project. Three sites experience overlap between buffers and the Project site. A further 24 breeding sites are located within the ROI.

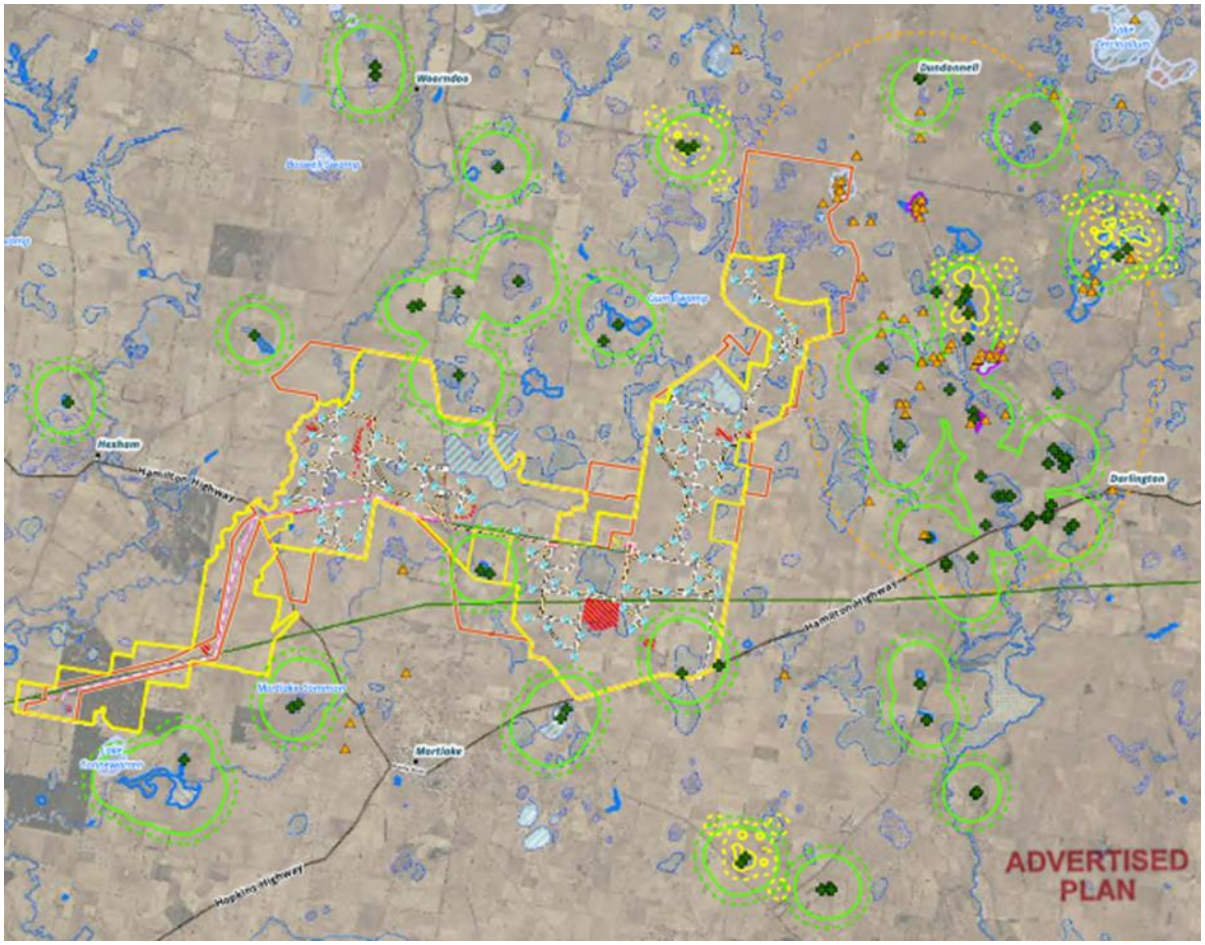
Level 3 assessment

The Level 3 assessment identified turbine free buffers around Brolga breeding and flocking sites (Figure 5) based on the home range data generated from pairs with stable home ranges and in consultation with DEECA. Buffers were:

- for breeding sites – 1133.8 metres inclusive of a 300-metre disturbance buffer
- for flocking sites – 5 kilometres from the flocking sites of Lake Barnie Bolac, Long Dam and Lake Sheepwash.

CRM was not undertaken because there was no empirical flight data that could be used as valid inputs to estimate collision risk. An alternative method for offset measures was agreed with DEECA which drew on CRM and PVA from five other wind farms. Collision risk estimated five additional Brolga would be needed to replace those killed in possible collisions (refer Table 7 in Appendix E). Mitigation strategies were to be included in a BAM Plan and a compensation strategy or program established.

Figure 5 Brolga Report proposed buffers



Source: Document 9 Figure 7. Orange dashed line- flocking buffer, Green line – breeding buffer, green dashed line – disturbance buffer, Yellow line – home range buffer, Yellow dashed line – home range disturbance buffer. Project land within (thick yellow line)

(iii) Evidence and submissions

The impact of the Project on Brolga was a concern of many submissions including:

- the process used to determine breeding and flocking sites and buffers
- direct impacts from collisions
- indirect impacts such as displacement and habitat avoidance
- barriers to Brolga movement
- cumulative impacts to the Victorian Brolga population.

Mr Venosta provided expert fauna evidence for the Applicant. No other fauna experts were called.

Mr Cumming provided a detailed submission and extensive material in the form of attachments (over 180 documents). A number of submitters, including Council, expressed support for his position. The Panel does not afford Mr Cumming's opinion the weight of independent expert opinion but accepts he has an intimate knowledge of Brolga in the region.

Several submitters raised the draft Brolga Standard being prepared by DEECA. DEECA advised that the draft provides a different approach to risk compared to the current Brolga Guidelines. Because the Standard was not finalised, it was not appropriate to use. It submitted that, overall, it was

satisfied with the approach for Brolga assessment which had been undertaken in accordance with the Brolga Guidelines.

Level 1 assessment

Status of the population

The Applicant submitted the Project had drawn on extensive sources to identify Brolga nesting sites in and proximate to the Project area, including all applicable databases, consultation with landowners and fieldwork.

Mr Cumming noted the completion of DECCA's 2023 Brolga Count and queried why the results were not available to the Panel. DEECA advised that the 2023 Brolga count was undertaken on 22 April 2023 and the information and survey data was being consolidated and would be publicly available in coming months on the State Wide Integrated Flora and Fauna Teams website which also hosts prior count data.

Mr Cumming submitted that the conservation status of the Brolga in Victoria may be more significant than currently understood. He referred to research that Brolga in Northern Australia may be hybridising with *Sarus spp* cranes and submitted this cross-breeding may make the southern population more important. He provided other research material to suggest genetic differentiation between Brolga populations in northern and southern Australia and that a geographic separation of Victorian Brolga may potentially exist east and west of the Hopkins River.[29]

Mr Venosta disputed that the published information supports this and advised that research by Miller and Ors (2019) found no substantial genetic variation between northern and southern populations. This paper was not provided to the Panel.

Suitable habitat

Mr Cumming submitted the Brolga is the world's only crane species with a salt gland and can live in and drink salt water. He cited information from the Australian Crane Network website which indicated they roost on saline areas at night.[30] He expressed frustration that many assessments (and DEECA) did not recognise Brolga use saline wetlands which provide a range of Brolga food sources, and provided photos of Brolga apparently nesting in saline conditions at Tiverton and Lake Martin near Cressy and at Lake Barnie Bolac[31] where nesting has occurred three times over the past 10 years. He compared salinity mapping at Dundonnell with historical and recent Brolga records referenced in the 2014 biodiversity assessment for Dundonnell[32] to illustrate the range of Brolga records which coincide with saline wetlands.

Mr Cumming submitted Brolga will nest in a wide variety of settings, including saline settings, and challenged the view that Brolga require site vegetation for nesting. He said that while it may be desirable to have water for nesting, it did not need to be deep or present on the site for three months. He was aware that several Brolga had nested inside the Project area on dry land and on several properties within the ROI and suggested this may be a response to displacement. He provided photographs of Brolga nesting: [33]

[29] Document 266b.22A and 22B
[30] https://www.ozcranes.net/species/saline.html
[31] Documents 266b.14, 266b.15 and 266 p14
[32] Documents 266b.8 and 266b.11
[33] Documents 266b.103, 266 p24-26, 266 p27, 266 p28 and 30, 266 p29 and 266 p31

- in a saline lake without vegetation
- on dry land and rocky ground 200-300 metres from a wetland because of another pair already nesting in the wetland and breeding behaviour influenced by waterbody barriers. Once chicks can walk they moved to larger wetland
- on elevated ground surrounded by water. He noted this nest consistently yielded a pair of chicks with a 40 to 50 per cent survival rate and compared to most nests which yield a single chick with a 12-15 per cent chance of survival
- in areas which held water for 30 days. After one chick hatched it was able to walk to a larger wetland where it fledged, while the other fledged at the site
- immediately adjacent to a creek
- in a wet paddock with sheep present where fledging has happened many times.

Mr Cumming challenged the Brolga Report position that Brolgas don't nest in creeks known to flow regularly and submitted that Brolga have bred successfully in Salt Creek, Mt Emu Creek and the Mt Fyans spring which flow nearly all year round.

Ms Lenehan submitted that Brolga at her family farm used to breed in a rocky gully on a ledge backed by a small cliff some 300 to 600 metres away from nearby lakes.

Mr Venosta agreed Brolga can tolerate saline conditions, but stated the Brolga Guidelines identify that saline environments are less suitable as habitat. He considered this was a reason to discount saline sites as suitable habitat. He conceded in cross-examination that Brolga may be breeding on dry ground due to insufficient wetland breeding habitat available.

Brolga behaviour

Mr Cumming submitted the only time Brolga sit is to nest and breed. He had observed Brolga breeding and nesting year-round in response to seasonal variation and noted that Brolga will try and breed up to three times each season if previous attempts are unsuccessful and that this had affected the timing and reliability of the surveys conducted by Biosis. Mr Venosta agreed that Brolga can breed throughout the year in response to environmental conditions.

Mr Cumming submitted that Brolga also gather in 'maternity' flocks characterised by a number of juveniles with relatively few adults. The juveniles are poor flyers and therefore more susceptible to collision risk. Mr Venosta advised he was unaware of maternity flocking.

Database records and desktop assessment

The validity of recorded and potential flocking and breeding sites was the subject of extensive evidence, cross-examination and submission.

Louise Thomas submitted farmers with Brolga were often reluctant to provide data to the VBA, representing an underestimation of Brolga in the area.

Mr Cumming asserted it was difficult to scrutinise information in the Brolga Report because neither the DEECA wetland layer nor its wetland numbering system were used to identify sites, making it difficult to know wetland proximity, size, condition or vegetation quality. Mr Venosta responded that there was no particular reason the DEECA information had not been used.

Biosis discounted records associated with a 1984 study by Arnol and Others because they did not correlate to a DEECA recorded wetland. Mr Cumming challenged the discounting of these records. He noted the study was developed in two parts, with a confidential version including coordinates for sites but which had previously been made available. He asserted that the location data in the

confidential report would have demonstrated the records were within wetlands and demonstrated this on a map. Mr Venosta confirmed he was aware of the confidential report but did not request a copy of the data.

Accessing local knowledge

The Applicant advised that a Landowner Survey was conducted to access local knowledge about the Brolga population, and all landowners within the survey area were contacted. The Thomas Family was asked to participate but refused to take part.

Several submitters challenged the Applicant's engagement with the local community to access local information.

Council submitted that the Applicant had not adequately engaged with the local community and, for that reason, had failed to identify all relevant Brolga habitat.

Mr Cumming submitted that while he was well-known in the area and in Brolga conservation, he had had no contact with Biosis in the past 15 years. He had regularly written to the Applicant to request his local knowledge be considered. In response Mr Venosta stated that he had access to all Mr Cumming's public records. Mr Cumming responded that the volume of records he had was significant and he did not have the time to put them all onto the VBA.

Mr Cumming submitted that Brolga mapping in the local area was not adequately considered to inform assessments. He tabled a map he said had been agreed by DEECA (then DSE), Brett Lane and Mr Cumming in 2009 as an accurate record of local nesting sites, and unpublished data from DEECA showing breeding sites in 2009.[34]

The Applicant submitted there was no evidence of DEECA agreement on Mr Cumming's map, and even if there were, it related to breeding and nesting sites which would be buffered. Mr Venosta stated that this information was not in the VBA and the accuracy of some records was 900 metres from the nearest wetland.

Submitters raised a number of concerns relating to the Landholder Surveys, and its failure to identify known breeding and flocking sites. These included:

- Mr Cumming provided two examples of known breeding and flocking sites that were not identified in the survey: [35]
    - 496 Darlington-Nerrin Road, opposite Mr Cumming's farm, is a known breeding area recorded through the Brolga work for Dundonnell and has Brolga nesting nearly every year. The owner was aware that Dr Veltheim caught chicks at this property and banded them for the South West Brolga Study
    - the 'Mt Fyans' property has over 50 breeding and flocking records on Lake Sheepwash and more on other lakes on the property. The site was recorded in other Brolga surveys, and up to 116 Brolga have been recorded at the location.
- eight statements from landowners tabled by MCA and the Thomas Family advised that they had not been contacted as part of the Landholder Survey[36]
- the survey only included landowner records where a Brolga breeding site with a nest, eggs or chicks were directly observed.

[34] Documents 266.107-108, 266b.151 and 266b.92

[35] Document 266 p87-88

[36] Documents 219-223, 235a, 235b

- The discounting of landowner records or observations identified through the survey was unexplained and unscientific.
- It was inappropriate for the Applicant to conduct a critical aspect of the work, raising concerns for submitters about skill capacity, transparency and a conflict of interest.

Mr Venosta responded:

- all breeding and flocking observations identified through the landholder survey were included in applied turbine free buffers
- the definition of a nesting site in the landholder survey was different to the Brolga Guidelines because landholders may not have understood the definition
- the survey was conducted by Applicant staff who put questions to landholders verbally and in writing, with some phone contact possible
- Biosis had advised on the survey and interrogated the data, but did not consider landowners who were not consulted or gaps in the landowner survey map.

Level 2 assessment

Surveys

Mr Venosta advised aerial surveys for Brolga provided a snapshot and were consistent with the Brolga Guidelines, and that roaming surveys extended to waterbird and shorebird surveys on the new volcanic areas.

DEECA submitted that the aerial surveys (undertaken in 2009, 2014 and 2019) involved transects completed in accordance with Appendix A of the Brolga Guidelines, adopting a 3-kilometre buffer of the Project area. Brolga home range surveys were undertaken which involved visits to breeding sites identified during aerial surveys in 2009 and 2010.

Mr Cumming was critical of the survey methods. They were often done at the wrong time of year, from the road at a significant distance from the wetlands, were often too short in duration and resulted in disturbance of birds. He considered aerial surveys should be given no weight, noting their inability to detect Brolga on nests or visible from the road. He noted the timing of the 2019 survey was four to five months after breeding occurred and yielded limited results. He provided images of nesting Brolga he claimed were at different times of the year in 2019.[37]

Confirming breeding and flocking sites

Concerns regarding the process to validate flocking and breeding sites were raised in a number of submissions.

In relation to flocking sites, Mr Cumming considered valid maternity flocking records were not recognised because they are observed at the wrong time of year or are considered one-off events. He cited two VBA 2008 records from Ecology Partners west and north of Mortlake which are most likely maternity flocks, and one record from Dr Veltheim's GPS data.[38] Mr Venosta maintained these records were inconsistent with the Brolga Guidelines criteria.

In relation to breeding sites, Ms Thomas challenged the approach to confirming breeding sites and suggested historical records of wetland hydrology should be considered. She submitted that old survey work did not reflect potential Brolga displacement caused by surrounding wind farms, and the Project area may be being used more often now than records and survey work indicated.

[37] Document 266 p74-76

[38] Documents 266b.170, 266b.172 and 266b.173

Mr Cumming noted VBA Record 488 was discounted because it was assessed as saline and did not contain vegetation suitable for breeding or foraging. He noted this record was one of those agreed with DEECA and Biosis in 2009 and provided recent photographs of it with water and vegetation, no evidence of salt crust and Brolga present.[39] Mr Venosta responded he had not observed conditions at this location that would support it being a breeding site.

Mr Cumming challenged the discounting of records due to location uncertainty. He highlighted VBA Record 976 was discounted due to location uncertainty although the source document is included in the NatureKit online platform and in Biodiversity Action Planning reports.[40] Mr Venosta responded that information sought from NatureKit administrators was not provided.

Mr Cumming considered wetlands 29843 and 29811 (Site C) a separate flocking site outside the Lake Barney Bolac site. He noted seven separate flocking records were accepted by the VBA in six different years and provided photographs of birds flying into the site in July 2012.[41]

Mr Venosta confirmed that wetland 29843 was shown on the Oaklands Hill Wind Farm documentation prepared by Biosis because it was on the Sheldon flocking data base. The Applicant submitted that wetland 29843 is part of the Darlington flocking site and has therefore been buffered. This is reflected in the DEECA draft standard Darlington flocking site area based on GPS data collected by Dr Veltheim. The extract of the flocking data for Oaklands Hill indicates a broad flocking area that was based on VBA data before the Brolga Guidelines existed. It is not based on buffering flocking wetlands.

Mr Cumming considered that Gum Swamp should be recognised as a breeding and flocking site. He cited records provided by the landowners asserting that between eight and 12 Brolga pairs have flocked at Gum Swamp every year prior to 2022.[42] He stated these records extend over 60 years.

Mr Venosta agreed that if that site satisfied the criteria for a flocking site, it would require a buffer. He advised that this site did have a record of 12 birds in 2012 that remained for between three and four weeks, but this did not satisfy the Guidelines which require over one year of recording. The Applicant submitted that Gum Swamp was not a flocking site, that information on a single hand-written note from a landowner did not satisfy the Brolga Guideline criteria, and the site is 1.6 kilometres from the nearest turbine and outside the adopted home range breeding buffer.

Mr Cumming submitted that Tourac Swamp was also a breeding site and produced photos of Brolga nesting on three separate years including 2009, 2019 and an unknown date.[43] The Applicant clarified that Mr Venosta had inspected other locations on the Goldsworthy property to the northwest of Tourac Swamp and that the site has a breeding buffer applied.

Mr Cumming referred to observations of further nesting at wetland 28328 off Six Mile Lane and another site off Nine Mile Lane and cited a Statement of Observations confirming this.[44] He submitted that this wetland is within the Project area and not buffered. The Applicant submitted that there is no breeding record at this location.

[39] Documents 266b.149 and 266b.150
[40] Documents 266b.142 and 266b.139-41
[41] Document 266 p41-44
[42] Document 266b.133
[43] Documents 266b.103 and 266b.107-108
[44] Document 266b.161

Mr Cumming submitted historic records with good vegetation identified in targeted surveys had been excluded from the Report. He provided photos of three examples:[45]

- a wetland shown at top centre right in the Targeted Surveys Report (it was unclear whether this was wetland 283280)
- a second site he claimed to be included in Dundonnell reports as a breeding wetland including photographs of chicks
- a third site north-west of Price's Lane adjacent to a proposed turbine identified in the Targeted Surveys Report as fresh-water meadow.

Ms Parker advised in submission that her site was one of the sites mentioned above by Mr Cumming and that she had provided nest locations to the Applicant on several occasions.[46]

The Applicant submitted that these historical sites were addressed in Mr Venosta's evidence which stated that none of the locations listed are recorded in the VBA and it was unclear if the photographs provided are of the locations. Some areas support suitable ephemeral habitat; however, none include breeding records. Landowners had not seen Brolga breed at these locations and there was insufficient water held in areas for the aquatic vegetation required for nesting. Mr Venosta considered that many of the maps provided by Mr Cumming lacked the necessary context and were outside the site.

Mr Venosta agreed the deep wetland with surrounding wetland areas shown in the Targeted Assessment could provide good Brolga nesting habitat however, Mr Gibson had ground-truthed areas identified through DELWP mapping. Mr Cumming suggested that Brolga had nested in this location due to its high-quality vegetation and that it provided a good site for foraging.

The Applicant further submitted that Site 103 (off Nine-Mile Lane) is a wetland that is about 4.4 kilometres from any turbines and well outside any breeding buffer. It advised that Walmsley Dam had a buffer applied and Manooka Lane had been accepted not to be a breeding record by DEECA.

MCA and Thomas family submitted that the Thomas family had witnessed Brolga flocking on their property and nesting nearby, and that this area was shown in the Brolga Report with three small wetlands nearby. Mr Venosta said the 10 birds observed did not meet the criteria for flocking and were a one-off event. MCA and Thomas Family submitted Dr Veltheim's 2019 paper indicated:

> [Brolga] *need three wetlands within their 95% utilisation distribution for successful fledging, based on the average number of wetlands chicks used prior to fledging. The availability of wetlands in addition to the nesting site is likely to influence breeding success and recruitment.*[47]

They submitted that the three wetlands were shown on the Development Plan as CMA Mapped Wetlands and should have been identified as suitable for Brolga breeding.

Movement and flight behaviour studies

Mr Venosta advised that no Bird Utilisation Survey (BUS) had been undertaken as other projects had not used them to inform species-specific CRM. The Mortlake South Wind Farm assessment found there were no records of bird species of conservation significance above 18 metres height (which is well below the rotor swept area of the proposed turbines), and he considered the

45 Documents 266b.154, 266b.155, 266b.156 and 266b.157
46 Document 295
47 Document 262 para 25

targeted surveys provided sufficient site-specific information. He confirmed he had no information about Brolga flights at rotor height during breeding season.

MCA and the Thomas Family submitted Mr Venosta's evidence did not assess Brolga movement corridors even though this threatened species is partially migratory. This was inconsistent with Clause 52.32-4 of the Planning Scheme, which required consideration of significant habitat and movement corridors for FFG Act listed fauna.

Through cross-examination Mr Venosta responded that:

- he agreed that habitat and movement corridors for Brolga had not been identified
- the only work potentially useful regarding movement corridors was Dr Veltheim's 2022 work
- it was uncommon for Brolga to occupy a flocking site for more than four months, and it followed that for eight months the Brolga would be either at breeding sites or in a transition period between them, duration depending on a range of factors.

Home ranges

The Brolga Report used data from the Penshurst wind farm site as there was not enough data to undertake adequate home range analysis for the Project area. DEECA supported this approach.

Mr Cumming submitted that the Brolga Report had not satisfied the requirement for site specific studies of home ranges to deviate from default buffering contained in the Brolga Guidelines.

Several submitters raised concerns that Brolga movements extended beyond home ranges. In response, the Applicant submitted while it is possible for Brolga to move outside the breeding zone during the breeding period, the Brolga Guidelines do not require this flight activity or foraging activity to be included in the home range buffers. That activity was unrelated to breeding activity, nest construction, laying and incubation. The aim of the buffers is to allow for successful reproduction of the species. While it is possible for a collision to occur during movement outside the home range buffer, that is included in the collision modelling data.

There was significant interest in the research of Dr Veltheim and outcomes of her South West Victoria Brolga Research Project conducted independently but when she was an employee of Biosis. The research included a 2018 PhD, a 2019 paper (which reported findings for 11 GPS-tracked pre-fledged chicks) and a 2022 paper for which Dr Veltheim was the lead author.

Submitters asserted Dr Velthheim's material relevant for calculation of home ranges, Brolga movement and identification of flocking sites and the data should have been used.

The Applicant submitted it was not incumbent on Mr Venosta to source unpublished data not subject to peer review. Mr Venosta advised because it was not publicly available on the VBA it could not be used to recalculate home ranges.

The Applicant submitted the 2019 Veltheim paper reports an average home range (50 per cent utilisation density) of 442 metres and a 95 per cent utilisation density home range of 1,369 metres measured from the roost site centre, rather than the edge of the breeding site wetland as per the proposed buffers. The order of buffers adopted for the Project are in a similar range to those calculated by Dr Veltheim but not identical given the two studies surveyed different habitats.

Mr Venosta advised that home ranges were changed in response to Dr Veltheim's 2019 work and that migration between flocking and roosting sites is not relevant to successful reproduction.

The Applicant submitted the 2022 Veltheim paper referred to the average of movements from roosting to foraging areas throughout the year, and 95 per cent of movements occur within 5.2 kilometres. Mr Venosta did not use that distance because the paper assesses migratory behaviour between breeding and non-breeding areas.

The Applicant said Mr Venosta confirmed the 2022 VBA data supported the identification of flocking sites at Lake Barnie Bolac, Lake Sheepwash, and Long Dam, where a 5 kilometre buffer was applied. While the 2019 paper was relatable to a breeding home range, the 2022 paper related to movements more generally and is evidence that Brolga fly and move greater distances than the breeding home range. This underpins the acknowledgement of collision risk.

Mr Venosta confirmed the 2022 paper was important, including for PVA, but he had not updated the report in response to it. He agreed the buffer was based on the belief that Brolga remain within 600 metres of the centre of their home range. Dr Veltheim's data represented new information but was not relevant as it was about movement and not home ranges. The distances were similar and Dr Veltheim's work suggested Brolga use several wetlands. However, he considered however, the majority of birds use single wetlands.

The Applicant identified the 2019 and 2022 Veltheim papers had been appropriately considered and applied. The home range analysis methods were in accordance with the Brolga Guidelines and supported by DEECA.

DEECA submitted Dr Veltheim's 2018 PhD thesis and 2019 paper were a source of new information and data that was not available when the Brolga Guidelines were prepared and could be utilised when addressing buffers. It maintained its support for the proposed approach.

Potential direct and indirect impacts

Collision

Mr Venosta identified until recently monitoring for bird carcasses at multiple wind farms (Maloney 2019 and DELWP 2020a) had not detected any Brolga fatalities and that there was no evidence of Brolga collisions with wind turbines. He stated Brolga mortality was based on publicly available reporting and the work of Moloney and Others and was unaware of additional Brolga deaths.

Mr Cumming considered the Moloney report unreliable, noting that data from only two unidentified wind farms was considered. He cited research from the USA highlighting the effects of wind farms on Sandhill Cranes[48] and suggested that Brolga are heavier and clumsier with greater vulnerability to collision and a need for larger buffers. He considered the methodologies for mortality monitoring are often inadequate with Brolga deaths more common than reported. He tabled a paper citing studies from the USA that examined the distance of large-bodied bird carcasses from wind turbines and suggested larger search areas were required.[49] He suggested search areas be circular, five times the blade length and undertaken fortnightly consistent with monitoring at the Macarthur wind farm.

DEECA provided recent information on Brolga mortality including a mortality in 2014 at the Macarthur wind farm for which the cause of death was inconclusive, and a recent Brolga death at

[48] Document 266b.13 and 266b.73

[49] Document 266b.76

an unnamed wind farm. It recommended the inclusion of Brolgas in any post construction mortality monitoring, and that monitoring maximises the detection probability of Brolgas.

Displacement

Mr Cumming considered the Project would displace many pairs of Brolga from the area and reduce access to suitable breeding habitat. He tabled post-completion reports for a number of wind farms where Brolga had been displaced from both flocking and breeding sites:[50]

- Brolga had not returned to flocking sites within 5 kilometres of Salt Creek, Chepstowe, Macarthur, Morton's Lane, Oaklands and Stockyard Hill wind farms. 100 Brolga which used to flock within 5 kilometres of the Dundonnell wind farm had not returned.
- only one confirmed nesting event that fledged chicks occurred in over 10 years across the 50 nesting sites within 5 kilometres of the Yambuk, Waubra, Morton's Lane Macarthur, Oaklands, Chepstowe, Mt Gellibrand, Stockyard Hill, Dundonnell, Berrybank and Salt Creek wind farms.
- no documented successful nesting and fledging events has been recorded over 10 years from the seven nesting pairs recorded at the Macarthur wind farm. Mr Cumming provided a detailed account of the loss of Brolga from this area based on post-construction monitoring reports.

Mr Cumming tabled his assessment of post-construction monitoring at the Macarthur wind farm.[51] His analysis was that Brolga visiting to feed or attempt to breed only came within 3 kilometres of the turbines when daily average generation was between zero and 30 per cent. Feeding Brolga exited the wind farm and could not be found within 3 kilometres once average generation exceeded 30 per cent. Whooping Crane research based on GPS tracking found that wind farms influence birds to approximately 5 kilometres.[52]

Mr Venosta submitted the losses claimed by Mr Cumming were not supported by documentary evidence. References were not provided for most of the purported losses and some references were incorrect. Biosis had not documented any abandonment at the Yambuk and Codrington wind farms in 2004. The Applicant submitted that there is no evidence of flocking wetlands within 5 kilometres of Salt Creek Wind farm and no evidence for claims of abandonment.

Mr Venosta advised the displacement of birds at Dundonnell reflected in monitoring reports could be due to year-to-year variability. Causal factors may affect Brolga use of sites once wind farms are constructed and there was no evidence to suggest Brolga are displaced by wind farms and the data from post-completion reports was not relevant.

Ms Lenehan submitted that if young are caused to be separated through displacement, they will not survive and live to breed. Mr Venosta accepted that if displacement resulted in the separation of breeding pairs it would result in the breeding pair not being functional.

Level 3 assessment

Flocking buffers

DEECA submitted three flocking sites have been identified within the Project area, with a 5 kilometre buffer applied. The Applicant and DEECA had discussed whether the flocking site buffers

[50] Documents 266b.42, 44, 47, 50, 51, 63, 64, 112, 113, 114 and 116
[51] Document 266b.49
[52] Document 266b.123

should also have a 300 metre disturbance buffer included. However, the northern area of the Project area contained other significant biodiversity values (specifically NTGVVP) which restricted the location and placement of the turbines. On this basis a 5 kilometre buffer was considered adequate and consistent with the intent of the Brolga Guidelines.

The Applicant noted that the proposed turbine-free buffers included a 300 metre disturbance buffer and provided an example to illustrate the buffer extends 5.3 kilometres from the wetland centre.

Mr Cumming considered that the default flocking buffer should be applied to the additional flocking sites at Gum Swamp and wetland 29843.

Breeding buffers

Methodology

Mr Venosta advised he did not conduct a literature search on buffers or make inquiries about buffers at other wind farms because he was confident the Biosis methodology was more rigorous.

Mr Cumming advocated for the default breeding site buffer (3.2 kilometres) in the Brolga Guidelines. He queried why the 'Brett Lane and Associates Habitat Model' (the polygon model) buffering method used for other wind farms was not used. He considered the appropriate approach was to apply a 3.2 kilometre buffer to all wetlands. He provided an example using data from Dr Veltheim for five wetlands on or near the Project site to illustrate the substantial effect its application would have on the Project.

MCA submitted the polygon model was considered by previous panels to be an appropriate approach at Stockyard Hill, Dundonnell and most recently at Golden Plains wind farms. The submission explained that the method was recommended as a compromise between reduced buffers sought and buffers recommended in the Brolga Guidelines, noting at the time Brolga was classified vulnerable (and not endangered). It submitted the precautionary principle should be applied in the absence of compelling evidence justifying smaller site-specific home ranges.

Inputs

Mr Cumming argued the buffering distance calculations were skewed by the method of recording Brolga movements in home range surveys for the Targeted Fauna Assessment Report completed by Biosis for Penshurst wind farm in 2011. In that instance every time a Brolga could not be found, the distance from the nest was recorded as zero rather than recorded as a distance in excess of what the search area was. He examined the data for each pair and estimated that over 26 per cent of records generated at Penshurst recorded a zero. The methodology also resulted in other limitations such as the duration and criteria for observation.

Mr Venosta agreed a zero value was attributed to Brolga not present in surveys but he was not sure if those values were included. He noted instances where Brolga were recorded as being a further distance away. He agreed that if Brolga were observed sitting on a nest, that would result in zero distance travelled. The Applicant subsequently clarified that if an adult was not observed it resulted in 'no record' as opposed to a record of zero distance.

The results

MCA submitted the proposed breeding buffer was radically different from the Brolga Guidelines, is untested and not supported by Dr Veltheim's 2019 paper which identified:

> *… breeding wetlands and non-wetland habitat within home ranges should be incorporated into turbine-free buffers and to allow barrier-free movement between wetlands and non-wetland foraging areas.* [53]

The Applicant submitted that the order of buffers adopted were of a similar range to those calculated by Dr Veltheim.

Mr Venosta considered that 99.9 per cent of home range buffers meet the objective of having no significant impact on the likelihood of successful reproduction. He was asked whether applying the precautionary principle would result in a 5 kilometre buffer to recognise the displacement effects observed at other wind farms. He responded that the Brolga Guidelines were followed, and the precautionary principle was adopted.

Application of buffers

Buffers have been applied to known recorded breeding and flocking sites. Mr Venosta confirmed they had not been applied to the full breeding season because that was not required by the Brolga Guidelines. This was consistent with Dr Veltheim's paper. The key issue is to develop a buffer to prevent effects on reproduction.

Mr Cumming argued that buffers should be applied to all potential nesting sites as per the Brolga Guidelines. The Applicant submitted that the Guidelines do not separately require the application of further buffers to bodies of water which have the potential to be habitat for Brolga (as opposed to confirmed breeding sites). Mr Venosta confirmed buffering was not applied to potential breeding sites. He did not interpret the Brolga Guidelines as requiring this and noted data on these sites was not available.

DEECA provided further advice to address confusion regarding potential breeding and flocking sites:

> The Interim Guidelines expect that all known / confirmed breeding and flocking sites (based on records) are appropriately buffered. The Interim Guidelines consider potential habitat in the Level One and Level Two assessments insofar as a proponent is expected to investigate whether there are additional breeding and flocking sites within the radius of investigation, but if use of those sites is not confirmed (i.e. from relevant information sources as set out in the Interim Guidelines) then this potential habitat is not expected to be buffered in the Level Three assessment.

In response to Panel questions, Mr Venosta realised that one turbine was located within a buffer. The Applicant advised that turbine B81 was 51 metres from the edge of the mapped buffer and may require micro-siting to the west to ensure it is outside the buffer. The Applicant advised that turbine B26 is 128 metres from the edge of the Walmsley Dam breeding buffer as is the transmission line. It submitted marking the overhead powerline to prevent collision was a suitable mitigation based on research cited in the Brolga Guidelines.

<u>Collision Risk Modelling and Population Viability Analysis</u>

DEECA submitted small numbers of mortalities can pose a significant risk to long-lived species like the Brolga. It advised discussions with the Applicant in 2018 recognised there was insufficient data to input into the CRM and a suitable approach was to use data from five other wind farms in Western Victoria. Mr Venosta accepted that he had not used the results of post-completion monitoring from other wind farms.

[53] Document 262 para 24

Regarding the use of PVA to estimate the impact of the Project, DEECA advised it was broadly satisfied the Brolga Guidelines objectives had been met in the context of Project area practicalities.

Mr Cumming submitted the Applicant's approach to CRM and PVA was inadequate because:

- Brolga are poor and slow flyers and more susceptible to blade strike than raptors
- the primary impact on Brolga is displacement rather than collision risk
- the inputs were questionable and the mathematical methodology underpinning the CRM was flawed, undermining the use of PVA
- morning and evening observations appear to have resulted in double-counting of birds.

MCA submitted the CRM was not site-specific as it was based on models and assumptions of flight behaviour and data obtained for other Victorian wind farms.

Mitigation and offset

Mr Cumming suggested mitigation measures should include transmission line marking, the use of a single black blades to deter birds, and the use of radar and cameras.

Mr Venosta considered that potential offsetting measures that could be included in BCP may include habitat restoration, legal protection of sites, stock exclusion fencing, burial of overhead single-strand wires and predator control. If higher collision rates occurred, adaptive management would still require appropriate offset measures to be taken.

DEECA noted that a BCP had been commenced but was still not complete. It recommended that a BCP be prepared as an offset strategy for Brolga in line with the Brolga Guidelines to avoid cumulative impacts and achieve a zero net impact. It highlighted the importance of wetland restoration to achieve this and recommended the BCP be prepared as early as possible to ensure it is adequate and able to meet any targets set prior to construction. It considered this detail could be determined as a permit condition and if it is found through monitoring that mortality numbers are higher than predicted, adaptive management can be undertaken to provide an appropriate offset. However, adaptive management for Brolgas had not been clarified in the mitigations and it recommended the Applicant be open about what adaptive management will mean in the form of species commitments. The mitigations and commitment could sit in the BAM Plan and/or BCP.

DEECA's experience with existing wind farms in the Barwon South West region had demonstrated that due to the challenges and uncertainties in understanding cumulative impacts, BAM Plans had not effectively facilitated a precautionary approach to prevent significant impacts and often no mitigative action (beyond monitoring) was undertaken. It recommended an additional condition for the BCP including five-yearly performance targets consistent with the outcomes of the PVA, with a zero net impact objective, and with the data and recommendations in the BCP. The zero net impact objective should be amended every five years depending on outcomes.

Council submitted it was not orderly planning to leave so many important issues to permit conditions.

Avoiding cumulative impacts on Brolga

Mr Cumming submitted any cumulative impact assessment must consider future Brolga generations and asserted that post-construction monitoring of existing wind farm sites showed 50 breeding sites have failed to attract breeding pairs. He calculated based on reproduction rates of 8 per cent and 42 per cent for 50 breeding pairs over a 10-year period, between 74 and 270 birds would be lost from the Victorian population as a result of cumulative impacts.

Mr Venosta was not aware of any empirical evidence for such a loss due to wind farms, and there was no evidence of Brolga fatalities to date of this magnitude. He said the Brolga Guidelines provided a process to avoid cumulative impact by having zero net impact through avoidance of impacts at breeding and flocking sites, with any residual impact addressed by a PVA.

Council submitted the Panel should adopt the position of the Mortlake Wind Energy Facility Panel which concluded based on the information available, the development of that project as proposed could result in an unacceptable impact on the Victorian Brolga population. In order to avoid this impact, further survey, assessment and analysis were required and the Project revised accordingly.

(iv) Discussion

In considering matters related to Brolga, the Panel has been conscious of the need to afford appropriate weight to expert evidence and submission. In doing so, it has sought to balance Mr Venosta's evidence, the Brolga Report and the submission of DEECA with the extensive knowledge of Mr Cumming. It has been cognisant of the concerns of the Applicant regarding the way Mr Cumming's documents were presented to Mr Venosta.

Since the development of the Brolga Guidelines, the Brolga's conservation status has deteriorated, and it has been relisted from Vulnerable to Endangered under the FFG Act and on the Advisory List of Threatened Vertebrate Fauna in Victoria. This has led the Panel to apply the precautionary principle in its consideration of the Project's impact on Brolga. The Panel has relied on the Brolga Guidelines and the assessment steps as the primary guidance in considering the potential impact of the Project on the Victorian Brolga population. It notes Panels prior to 2011 did not have the benefit of such guidance.

Level 1 assessment

Status of the population

Understanding the conservation significance of the Brolga population is of central importance in assessing the potential impacts. The annual Brolga Count overseen by DEECA provides important information to help understand its population and distribution. It is unfortunate that the 2023 count was not available during the Hearing for consideration of parties and the Panel.

However, the Panel notes that count results have been released since the Hearing concluded and shows a count of 502 birds in Victoria. Many factors influence the count and it is not a population estimate.

While points made concerning genetic diversity within the Brolga population have implications for Brolga conservation, they are of limited relevance to the permit application. The Panel notes the conflicting material presented and considers that the potential for genetic diversity adds weight to applying the precautionary principle.

Suitable habitat

There was considerable disagreement over what constitutes suitable Brolga habitat. This is an important issue as it has been used to partly justify the discounting of records of breeding sites, including from the VBA. Brolga clearly prefer certain habitats as outlined in the Brolga Guidelines and other literature. However, they appear to be quite opportunistic and nest where possible.

That Brolga use saline wetlands appears to be accepted, although there is no reference in the Brolga Guidelines to saline habitats being less suitable as suggested by Mr Venosta. Rather, saline

habitat is afforded equal weight to freshwater environs. The Panel notes the Flora and Fauna Existing Conditions Report identifies suitable habitat as shallow freshwater and brackish wetlands, crops, grassland and pasture.

The Panel accepts while Brolga may prefer wetlands and suitable aquatic vegetation for nesting, they will also nest in a variety of settings with different substrates and vegetation. The Brolga Report's appreciation of what constitutes suitable habitat and the discounting of sites to have been too narrow.

Brolga behaviour

The Panel accepts Brolga can breed throughout the year and are not limited to the breeding season of winter and spring. Although Mr Cumming provided no evidence to support it, the Panel considers the concept of maternity flocking raised by Mr Cumming plausible. This has implication for those records to have been considered 'one offs' and should be factored into the consideration of sites to be buffered.

Database records and desktop assessments

The Panel considers all reasonable efforts were made to access the relevant databases as a starting point for the assessment of Brolga impacts. The use of a different wetland numbering system however did affect the ability for the Panel to correlate the relevant data. This was important given the breadth of disagreement concerning the validity of database records. It would have assisted the ability of all stakeholders to check the data if Biosis had consistently used DEECA wetland numbering.

Of particular concern was the discounting of records included in the Arnol and Ors 1984 study due to a failure to seek detailed location data when the source was available in publicly accessible resources. These records should have been sought and more fully considered.

Accessing local knowledge

The Brolga Guidelines are very clear with regard to expectations for thorough investigation of local Brolga records and habitat within the ROI. This includes site inspections with local landowners whose properties may contain Brolga habitat and liaising with DEECA to identify relevant local community groups to consult. It specifically recommends early consultation to lay the groundwork for more detailed discussions about a landowner's knowledge, to provide the most up-to-date and comprehensive information on known Brolga habitat in the ROI.

The Panel notes that the Applicant supported a Community Engagement Committee in relation to the Project, has held a variety of events to engage the local community and that community consultation resulted in three breeding sites being checked in 2017-18. However, neither the Applicant nor DEECA appear to have approached relevant community groups to specifically address Brolga as required by the Brolga Guidelines.

The Applicant appears to have focussed on a Landowner Survey to gain local knowledge of Brolga to inform the assessment. The Panel accepts that attempts were made by the Applicant to engage with landowners through the survey. However, the omissions identified by submitters lead the Panel to the view that while it provides some useful information, it has been of limited value in informing the assessment.

The Panel has additional concerns about the timing and methodology of the Landowner Survey. The survey was initially conducted between May 2013 and March 2014 and several years after the

Level 2 assessments for home range and additional flocking habitat assessment were undertaken. The purpose of accessing local knowledge as part of a Level 1 assessment is to inform the detailed investigations in Level 2 and this does not appear to have occurred.

Further, the Brolga Guidelines are very clear that local knowledge should be gathered within the ROI which is 10 kilometres. The Landowner Survey was conducted within a 5 kilometre radius.

While the Panel notes DEECA's support for the methodology, the material provided by it does not adequately justify the Level 1 assessment's departure from the Brolga Guidelines.

Level 2 assessment

The purpose of the Level 2 assessment is to provide a comprehensive record of Brolga habitat within the ROI and assess potential for impacts arising from collision risk, indirect disturbance and barrier effects.

Surveys

Aerial surveys are a suitable method to use to contribute to a Level 2 assessment and provide a snapshot of conditions. However, the Brolga Guidelines specifically state that Level 2 applies to the ROI which extends 10 kilometres from the Project area. The Applicant chose to conduct the survey over the Project site and within a 3 kilometre 'buffer'. This is not consistent with the Guidelines as asserted by DEECA.

The aerial surveys were conducted over two consecutive days, once every five years. It was not explained why this was considered an adequate timeframe, nor is it clear how the results of surveys in 2014 and 2019 would be incorporated into the earlier Level 2 assessments as intended by the Brolga Guidelines.

Mr Venosta's evidence was that seven breeding sites were identified in aerial survey in 2009, however, Figure 3a of the Brolga Report appears to show eight nest sites. The Panel notes that a nesting site identified in the 2019 aerial survey above North Road in Figure 3c of the Brolga Report does not appear to have been included in the consolidated records and buffers shown in Figure 7 of that Report. This needs to be confirmed.

On the issue of roaming surveys, it is unclear why these activities were limited to the new volcanic areas which are generally north of the Woorndoo-Darlington Road. This does not appear to cover the ROI or the extent of the aerial surveys.

Confirming flocking and breeding sites

The confirmation of flocking and breeding sites underpins the implementation of the Brolga Guidelines.

DEECA submitted the Brolga Guidelines expect that all known/confirmed breeding and flocking sites (based on records) are appropriately buffered. This appears to suggest that only recorded sites must be recognised and negates the Level 1 process to access local knowledge. It is unclear how relying solely on records would achieve the comprehensive record of the location, nature and extent of Brolga habitats within the ROI that the Brolga Guidelines explicitly require.

Locally based submitters provided the Panel with substantial information on sites which may potentially provide important habitat for flocking and breeding. The Panel considers that this information should have been addressed in the Level 1 engagement with the local community.

Some of these sites have been considered by the Applicant while some appear to have not. Some appear to have been discounted for valid reasons and some do not. The information has been provided in a variety of formats and not in a coherent package which clearly identifies flocking and nesting locations, observations, habitat quality and other important factors. As a result, the Panel is unable to identify a definitive a list of sites which require further validation.

The Panel does not have the necessary confidence that the assessment has generated a comprehensive record of the location, nature and extent of Brolga habitats to satisfy the Brolga Guidelines. Further work is required to investigate potential Brolga habitat and breeding sites more thoroughly before finalising the turbine-free buffers and turbine locations.

Movement and flight behaviour studies

Clause 52.32-4 was updated through Amendment VC199 in February 2022 and requires, where appropriate, the consideration of significant habitat corridors and movement corridors for fauna listed under the FFG Act.

The Panel considers that this information is necessary to make an informed decision. Brolga are known to be at least partially migratory and have a range of movements between and around flocking and breeding sites. They are known to move between wetland habitats and between wetlands and other areas. The home range analysis goes some way to providing information on Brolga movement, yet Mr Venosta conceded that information on habitat corridors and movement corridors had not been considered.

The Panel was provided with no rationale from either the Applicant or DEECA as to why this information was considered unnecessary when it is required in Clause 52.32-4. Such information would provide a valuable input to determining whether the proposal can achieve a net zero impact on the population.

The Brolga Guidelines emphasise the importance of flight behaviour studies to inform CRM in a Level 3 assessment. This has not occurred. Instead, the Applicant has focussed on home range investigations to inform the development of suitable turbine-free buffers for flocking sites. The Panel notes Mr Venosta's responses that a BUS was not undertaken and that he had no information about Brolga flights at rotor height during breeding season.

The Panel is concerned that Mr Venosta conceded he knew the need for data for effective CRM for some time and yet no effort appears to have been made to generate that data.

Home ranges

Home ranges are a key consideration in the calculation of turbine-free buffers to all potential nesting sites sufficient to have no significant impact on the likelihood of successful reproduction. The Brolga Guidelines clearly state that unless site specific investigations can show with a high level of confidence the size and shape of home ranges for a project, then the default breeding and flocking site home ranges should be used.

Submissions on Brolga home range addressed two primary issues – the nature of the home range survey and analysis, and the research of Dr Veltheim.

The Panel notes the home ranges were calculated based on observations for the breeding cycle and not the breeding season. While the Panel accepts the Applicant's position that the most relevant period extends from nest-building to fledging, it also accepts that juvenile Brolga may stay

with their parents for a considerable time through the breeding season and that their ability to survive to the point of becoming fecund is important for the viability of the population.

Dr Veltheim's research generated considerable interest from parties, and she was considered an expert on Brolga by all parties. While her research has not been scrutinised or tested by peer review to the degree where it can be afforded significant weight, it has some relevance and usefulness in understanding Brolga behaviour. While the full data set is not publicly available the use of records derived through the GPS data and included in the VBA were considered in the Brolga Report.

The more relevant findings of Dr Veltheim's research included:

- a 95 per cent utilisation density home range of 1,369 metres (measured from roost site centroid) and a recognition that adult Brolga may move further distances
- an average breeding home range of 232 hectares which varied greatly between individuals (70-523 hectares). This is considerably different to the home ranges calculated by the Applicant of 31-35 hectares
- confirmation of three flocking sites and that 95 per cent of Brolga movements occur within 5.2 kilometres which appears to support the 5 kilometre default flocking site buffer in the Brolga Guidelines.

The degree to which the Veltheim research has been utilised is unclear. Mr Venosta advised that changes were made to the Brolga Report in response to the 2019 paper but did not outline those changes. He agreed the 2022 paper is important but did not use it to update the report.

The Panel considers that the home range surveys do provide some site-specific data on home ranges. However, the lack of clarity surrounding the relevance of the Veltheim data and its consideration in the assessment does not provide the high level of confidence required by Brolga Guidelines. This supports the need to apply the default breeding site buffers of 3.2 kilometres plus a 300 metre disturbance buffer to the Project in the absence of an acceptable alternative approach that can be shown to be effective in achieving the objectives of the Brolga Guidelines.

Potential direct and indirect impacts

The Brolga Guidelines identify wind energy facilities may impact Brolgas through direct impacts such as collision or indirectly such as habitat avoidance and barrier effects and cumulative impact. These impacts are all potential impacts for the Project. An objective of the Level 2 assessment is to assess the magnitude, extent and likelihood of potential direct and indirect impacts. The understanding of impacts is a key input to managing residual risk in the Level 3 assessment.

While the potential impacts of collision with both turbines and transmission lines have not been detailed in the Brolga Report, the potential impacts of collision are implicitly associated with the location of infrastructure. The collision risk process undertaken seeks to address the issue of collision risk across the site, and it is difficult to comprehensively understand the risk within the site without supporting information on Brolga movements and flight behaviour studies.

The Panel agrees that post-construction mortality count data from other wind farms has the potential to be underestimated.

The Brolga Report indicates that cumulative impacts are addressed insofar as:

- disturbance will be addressed through the application of turbine-free buffers on all confirmed breeding and flocking sites

- barrier effects are not considered to be a significant risk. A number of flock roost sites exist to the north, north-east and east of the Project area such as Lake Barnie Bolac, Lake Sheepwash, Lake Terrinalum, Lake Gellie and Chinaman Swamp. Brolga flying between these flock roost sites will not encounter turbines associated with the Project
- the application of CRM and PVA.

The Panel's key concern is that the material submitted by the Applicant and in Mr Venosta's evidence appears to address direct disturbance to Brolga through buffers alone. There is limited consideration of the potential impact of habitat avoidance by Brolga which results in displacement and potentially impacts breeding success, notwithstanding the issue is explicitly referred to in the Brolga Guidelines.

Level 3 Assessment

Flocking buffers

The Brolga Guidelines explicitly require a 5 kilometre buffer around flocking sites and an additional 300 metre disturbance buffer. The Panel considers DEECA's position to not apply the 300 metres disturbance buffer so as to not restrict the location of turbines contrary to the intent of the Guidelines. A 5.3 kilometre buffer should be applied to flocking sites measured from the edge of a wetland rather than the centre. This will require further mapping and confirmation.

Breeding buffers

The Brolga Guidelines require the establishment of turbine-free areas around all potential Brolga nesting sites sufficient to have no significant impact on the likelihood of successful reproduction. They identify breeding and non-breeding home ranges are likely to vary with local habitat quality and extent and seasonal conditions. Level 3 assessments should provide a statement of how year-to-year variability in habitat conditions within the ROI have been considered. Unless site-specific investigations can show with a high level of confidence the size and shape of home ranges for a project, then the default breeding and flocking site home ranges should be used.

The Brolga Report proposes 1133.8 metre buffers around breeding sites, inclusive of a 300-metre disturbance buffer, based on home range surveys to justify a reduction in the default (3.2 kilometre) buffers.

The Panel accepts that home range surveys were completed and that the pairs with stable home ranges provided relevant information for the calculation of home ranges to inform buffers. The number of local pairs was low, but they were present at the identified sites.

The application material considered variability of habitats to a degree, although this information is not clearly applied to the buffers. The impacts of variability in habitat on Brolga behaviour does not appear to have been included in the Brolga Report.

The use of the polygon method for other projects is noted. The reasons why the Biosis model is considered more robust were not articulated by Mr Venosta.

The Applicant's adoption of the upper confidence interval of the home range of 833.8 metres provides some assurance that a conservative approach has been taken as required by the Brolga Guidelines. However, the Panel is mindful of the need for the precautionary principle to apply and the need for a high level of confidence in reduced buffers.

The Panel considers that due to the high degree of uncertainty underpinning the Brolga Report and its inconsistency with the Brolga Guidelines, the necessary level of confidence to support the application of reduced buffers has not been achieved.

The application of buffers

The application of buffers to all potential Brolga habitat as suggested by Mr Cumming is not considered practicable. Nonetheless, in recognition of year-to-year variability and the potential impacts of displacement, buffers should be applied to all confirmed nesting sites where Brolga have been observed nesting previously through a more rigorous implementation of Level 1 and 2 assessments.

Buffers may need to be applied to additional sites following further assessment, including the nesting location observed during the aerial survey in 2019 but not apparently included in the Brolga Report. It is outside the Project area but located approximately 2 kilometres to the north-east of the location at which the Project boundary deviates southeast of North Road.

Turbines will need to be relocated or micro-sited to ensure they are all well clear of buffers (including disturbance buffers). This outcome can be achieved through permit conditions.

The Brolga Guidelines identify that powerline collision is a recognised cause of Brolga mortality. The transmission line located within the northern portion of the Walmsley Dam breeding disturbance buffer should be relocated to avoid that portion located south of South Road. This might require the micro-siting of nearby turbines to accommodate any realignment. This can be achieved through permit conditions.

Collision Risk Modelling and Population Viability Analysis

CRM is an explicit component of Level 3 assessment with clear links to Level 2 assessment. It is unfortunate that sufficient data was not available to run the CRM for the Project. The Panel notes that 47 days of dawn-to-dusk home range survey was undertaken for the Project and considers that there was sufficient time to enable further survey work to be completed to gather adequate data to satisfy the Brolga Guidelines. By contrast, 3,700 hours (over 200 equivalent days) of field survey was reported as being undertaken for the Dundonnell project.

The approach taken represents an estimation of collision risk and is considered an inferior outcome as it precludes undertaking a robust PVA. This detracts from the consideration of scenarios for setting offsets, of achieving a net zero impact and of a property assessment of cumulative impacts to the Brolga population. It is unclear how the consideration of recently reported Brolga mortalities would affect assumptions used in estimating this collision risk. The basis for DEECA's support for this approach as responding to the 'practicalities of the project site' or satisfying the intent of PVA is unclear including how it meets the Brolga Guidelines.

The Panel considers adopting the mean of the collision risk modelling results for five wind energy facilities is not a conservative approach. Rather, at a minimum, the upper limit of the results of 7.9 projected collisions over the life of the Project should be applied unless further work is undertaken to inform the compensation approach as recommended.

Mitigation and offset

The application proposes both mitigation and compensation measures. These are dealt with by permit conditions, with the proposed EMP to include a BAM Plan and BCP without a clear understanding about the likely success of such measures or the impact on turbine locations.

Completion of these plans outside the assessment process precludes a clear consideration of their efficacy in achieving a net zero impact on the Brolga population.

The Panel agrees with DEECA's concern regarding a lack of clarity about the meaning of adaptive management for Brolga and the mechanism by which it would be implemented. While the logical vehicle for adaptive management would be the BAM Plan, DEECA's concern regarding the ability of BAM Plans to facilitate a precautionary approach and their implementation is troubling. The Panel has discussed this further in Chapter 5.4. It is also unclear why DEECA did not propose an AMP for Brolga as well as SBWB.

DEECA's recommendations for five-yearly performance targets for each compensation enhancement site and the monitoring program as a whole are supported, although it is not clear how they can be consistent with the outcomes of the PVA when a PVA has not been undertaken.

DEECA have identified the risks associated with site availability and success rates and encourages the BCP to be prepared as early as possible. Given the time this application has been in preparation and the time the Brolga Guidelines have been in operation, it is disappointing that a BCP was not provided.

Avoiding cumulative impacts on Brolga

The overall objective of the Brolga Guidelines is to manage the cumulative impact of multiple wind energy facilities planned, assessed and operating independently within the Brolga's range in Victoria, so that there is no 'net effect' or, ideally, a positive effect can be achieved for the population.

The importance of understanding cumulative impacts on Brolga is heightened by the change in its conservation status to endangered and the proximity of other operating wind energy facilities.

The information provided with the application is inadequate to enable the Panel to fully understand the potential cumulative impact of the Project because:

- the information presented in the Brolga Report provides an estimate of collision risk for the Project but does not undertake a CRM or PVA due to a lack of data. These steps are an integral part of the Brolga Guidelines
- no information was provided on the potential effects of other facilities operating nearby on the Project and no effective consideration is given to them in the assessment
- the issue of habitat avoidance and displacement does not appear to have been adequately considered
- the mitigation and offset measures proposed for the Project are intended to be included in pre-construction secondary consents, making it difficult to assess whether, at a minimum, a net-zero impact can be achieved.

(v) Conclusions and recommendations

The Panel concludes:

- Based on the information before it, the Panel cannot confidently conclude the Project will achieve a net zero impact and avoid cumulative impact on the Victorian Brolga or that the potential impacts are acceptable.
- The methodology applied in the Brolga Report is not sufficiently robust across all three required levels of assessment to provide an appropriate level of confidence that all

existing and potential flocking and breeding areas have been properly identified, adequately buffered and appropriate mitigation measures fully considered.

- The Project has not adequately considered habitat and movement corridors as required by Clause 52.32-4 of the Planning Scheme.
- While buffers less than the default buffers in the Brolga Guideline may be appropriate based on detailed documentation, they have not been adequately justified.
- 5.3 kilometre buffer should be applied to flocking sites measured from the edge of a wetland rather than the centre.
- Further information is required before the permit application is further assessed:
  - further assessment of potential Brolga breeding areas
  - additional flight behaviour studies to inform CRM
  - completion of a BCP which is:
    - linked to the BAM Plan and its mortality monitoring program
    - includes arrangements for regular ground and aerial surveys
    - includes more regular monitoring and reporting.
- Buffers will need to be recalculated in light of the further assessments and documentation listed above.
- Turbines and transmission lines located in or directly abutting a breeding or flocking buffer should be micro-sited to be clear of identified buffers including disturbance buffers. This includes relocation of the transmission line to avoid that part of the Walmsley Dam Brolga breeding disturbance buffer.

The Panel recommends:

Before further considering Planning Permit Application PA1800406, direct the Applicant to provide the following further information to the satisfaction of the Department of Energy, Environment and Climate Change (Environment Portfolio):

a) Provide further assessment of potential Brolga breeding areas which includes:
- **all Victorian Biodiversity Atlas and other database records, including the Arnol and Ors 1984 location data and all sites identified in the aerial surveys**
- **further local knowledge inputs within the 10 kilometre radius of investigation including all landholders with potential Brolga habitat and relevant community groups.**

b) Undertake additional flight behaviour studies to inform Collision Risk Modelling as required by the Level 3 assessment of the *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, 2011, Revision 2012 (DSE).

c) Complete a Brolga Compensation Plan generally consistent with the draft condition in Appendix F and which also includes:
- **linkages to the Bat and Avifauna Management Plan and its mortality monitoring program**
- **arrangements for regular ground and aerial surveys at appropriate times of the year to accommodate variability in environmental conditions**
- **mortality monitoring and reporting annually for the first five years and then every five years for the life of the project.**

d) Recalculate the turbine free buffers around Brolga flocking and breeding sites in light of the above information. Re-site turbines and other overhead infrastructure outside the buffers.

Providing the further information satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Pemit for the proposed development subject to the Panel's version of planning permit conditions in Appendix F conditions:

a) Amend the Development Plans condition to:
- **relocate the transmission line to avoid that part of the Walmsley Dam Brolga breeding disturbance buffer located south of South Road, and any associated turbine micro-siting**
- **micro-siting of any turbines and associated footings to avoid breeding and flocking buffers**

b) Amend the Brolga Compensation Plan to:
- **include linkages to the Bat and Avifauna Management Plan mortality monitoring program and apply a minimum upper limit of 7.9 projected collisions (this will not be required if further work is undertaken as recommended and identifies an alternative compensation approach)**
- **provide for annual mortality monitoring and reporting for the first five years of the Project then every 5 years thereafter.**

c) Review the final planning permit conditions to ensure they apporiately respond to the findings of the additional assessments and documents provided.

3.5 Other species

(i) The issues

The issues are:
- potential impacts on other listed and other fauna species
- effectiveness of proposed mitigation actions
- cumulative impacts.

(ii) Background

Overview of issues and impacts

Existing records, mapping and field surveys found a range of listed fauna may utilise the Project area. The key issues and potential impacts to fauna listed under the EPBC Act and FFG Act from the Targeted Surveys and Impact Assessment are summarised in Table 5.

Table 5 Panel's summary of assessment for fauna species listed under the FFG Act and EPBC Act

Listed fauna	Status/Listed	Key issues
Southern Bent-wing Bat	CE - EPBC Act CE - FFG Act	Refer Chapter 3.3
Grey-headed Flying- fox (GHFF)	V – EPBC Act V - FFG Act	Since 2018 a seasonal temporary colony has been detected near Hexham approximately 7 km south-west of the study area. Mortalities recorded at nearby Salt Creek WEF at Woorndoo. Flowering planted eucalypts within the study area would likely provide foraging resources for the species. Likely occurrence in study area is high. Significant impact

Listed fauna	Status/Listed	Key issues
		is unlikely after further assessment for EPBC. Specific measures to monitor and respond to any detected impacts will be included in BAM Plan
Yellow-bellied Sheathtail Bat	V - FFG Act	Recorded within wetlands. Considered to be a vagrant species that may occasionally use the area. No statement on impact provided
Curlew Sandpiper	CE – EPBC Act, Migratory CE - FFG Act	Not recorded in targeted surveys and most recent record within 10 km in 2009. May fly and forage throughout the airspace during summer migration to Australia. May also be present between spring and early autumn. Likely occurrence in study area is high. Significant impact is unlikely. Specific measures to monitor and respond to any detected impacts will be included in BAM Plan
White-throated Needletail	V – EPBC Act, Migratory V - FFG Act	Not recorded in targeted surveys and most recent record within 10 km in 2009. May fly and forage throughout the airspace during summer migration to Australia. May also be present between spring and early autumn. Likely occurrence in study area is high. Significant impact is unlikely. Specific measures to monitor and respond to any detected impacts will be included in BAM Plan
Gull-billed Tern	E - FFG Act	Recorded within wetlands and road reserve. Wetlands likely to provide important foraging habitat. No clear statement of impact but not considered significant based on Development Plan
Freckled Duck	E - FFG Act	Recorded within wetlands. Suitable habitat. No statement on impact provided
Blue-billed Duck	V - FFG Act	Suitable wetland habitat present, particularly larger permanent wetlands. Likely occurrence is medium. No statement on impact provided
Little Egret	E - FFG Act	Not recorded and suitable wetland habitat present throughout study area. Likely occurrence is medium. No statement on impact provided
Eastern Great Egret	V - FFG Act	Recorded within wetlands. Impact not specifically addressed but not considered significant based on Development Plan
Black Falcon	CE - FFG Act	Recorded. Wide ranging species. Suitable foraging habitat present throughout area. No statement on impact provided
Little Eagle	V - FFG Act	Wide ranging species. Habitat includes woodland and open areas. Nesting occurs in mature trees in open woodland or riparian vegetation. Likely occurrence is medium. No statement on impact provided
Corangamite Water Skink	E – EPBC Act E - FFG Act	26 individuals were recorded at Wetlands 1, 3 and 4 within the northern section of the study area in rocky habitats associated with wetlands. None recorded in the western extension area. Considered unlikely to result in significant impact to the population as wetlands will be avoided
Striped Legless Lizard	V – EPBC Act E - FFG Act	Recorded within grasslands at western extent of Castle- Carey Road reserve and South Road reserve. Impacts associated with upgrading of South Road and access track crossings and cable crossings of Castle Carey Road and Mortlake-Ararat Road are likely to result in a significant impact. The total area of impacted known and potential habitat is 3.773 hectares. Offsets are required for this impact. Access tracks that intercept habitat along Castle Carey Road and South Road will use existing road access locations where possible. Retained habitat within

Listed fauna	Status/Listed	Key issues
		the road reserve will be adequately fenced as 'no-go' zones during construction
Golden Sun Moth	V – EPBC Act V - FFG Act	Not recorded in targeted surveys and not considered to be present in the study area. Potential habitat for the Golden Sun Moth consists of areas which previously or currently have native grasslands or grassy woodlands (including derived grasslands). Not likely to result in a significant impact
Growling Grass Frog	V – EPBC Act V - FFG Act	Not detected in targeted surveys and considered to be absent from the study area. Potential to occur in wetlands. Limited suitable habitat within the development footprint and considered not likely to result in a significant impact
Brown Toadlet	E – EPBC Act	Potential habitat identified along Boonerah Estate Road section of the study area. Likely occurrence is medium. No specific statement on impact but construction to be avoided in potential habitat outside road reserves
Yarra Pygmy Perch	V – EPBC Act V - FFG Act	Not detected in fish surveys but has been recorded from the Hopkins and Merri catchments adjacent to the study area. Suitable habitat was identified within Salt Creek and Blind Creek and associated waterways. Likely occurrence is low to medium. All suitable habitats within the study area have been avoided and it is unlikely that the proposed action would compromise downstream water quality. Not likely to result in a significant impact
Little Galaxias	V – EPBC Act E - FFG Act	21 individuals were collected within the study area during surveys from two locations within Salt Creek on the western boundary of the study area. Collected at sites supporting abundant emergent and submerged aquatic vegetation. Not recorded at Blind Creek, though potential suitable habitat was identified at Blind Creek and associated wetlands which may be temporary due to their ephemeral nature. No impact to Salt Creek anticipated. Not likely to result in a significant impact Note: Fish surveys were undertaken in 2012-13. Dwarf Galaxias was reviewed in 2015 resulting in the description of two species including Little Galaxias. The report uses both species and given the distribution but is taken to be Little Galaxias
Hairy Burrowing Crayfish	V - FFG Act	One specimen was collected within the study area in Blind Creek at South Road and one historic record from Mortlake. Numerous inactive burrows were located throughout the study area but only a small number of active burrows were recorded at stream waterline. High densities of burrows were identified adjacent to Blind Creek west of Mortlake-Ararat Road. Proposed upgrades to the South Road bridge result in 0.103 ha of impacts to habitat. Additional surveys will be undertaken on Blind Creek at sites of the underground cable route prior to construction. If species is likely to be present, trenchless technology will be used. Bridge upgrade on Blind Creek requires sediment and pollution control measures during construction as part of EMP

Migratory shorebirds

Four migratory bird species were recorded:

- Sharp-tailed Sandpiper - 14 birds observed on two occasions at Wetland 2 with all seen actively foraging. No roosting was observed
- Latham's Snipe - single bird flushed from grassland adjacent to Wetland 2

- Red-necked Stint – 134 birds observed over four surveys from Wetland 2. All birds were seen foraging or loafing. No roosting was observed
- Common Sandpiper – two birds seen at Wetland 2 during Survey 1 actively foraging. No roosting was observed.

No BUSs were undertaken in the assessment. Analysis of BUSs undertaken for five other wind farms and consideration of BUSs at Mortlake South and Dundonnell indicated that around 90 per cent of flights occurred below 20 metres and all birds flying above 20 metres were common farmland birds. The Mortlake South BUS found no records of birds of conservation significance over 18 metres.

Aquatic habitats

Salt Creek and Blind Creek are the key aquatic habitats within the Project area, and they support populations of threatened aquatic species.

Draft permit conditions

Draft permit conditions include the requirement for a BAM Plan to be included in an EMP requiring mitigation and monitoring for the SBWB, GHFF, Curlew Sandpiper and White-throated Needletail. The BAM Plan is to contain:

- objectives and an overall strategy for minimising bird and bat strike
- mitigation measures for a range of bird and bat species
- a mortality monitoring program of at least three years
- procedures for the regular removal of carcasses
- reporting findings of the completed monitoring program contained in the BAM Plan and provision for further investigation.

(iii) Evidence and submissions

Birds

Submitter 76 had noticed a decline in several raptor species such as Wedge-tailed Eagles and Brown Falcons across her farm, the disappearance of Nankeen Kestrels, Black-shouldered Kites and Peregrine Falcons and significant reductions in Barn Owl numbers.

Mr Cumming provided mortality and monitoring reports from several wind farms to illustrate they had a significant effect on raptors. He submitted the use of average annual mortalities across the 20 to30 year operation of a wind farm made the data misleading as the impact is often in the years immediately post-construction. He pointed to examples of raptors being found outside the monitoring search area and identified the issue of raptor 'sinks' where individuals move into territories when other raptors have been impacted. The cumulative impacts from the loss of breeding raptor pairs over the life of a Project needed to be considered. He highlighted the lack of understanding of cumulative effects on all bird species identified in monitoring reports.

DEECA submitted that two additional bird species should be added to the BAM Plan with suitable mitigation measures set out in the plan ready for implementation should they be required:

- White-throated Needletail, given conservation advice that collisions are a threat. Mortalities had recently been detected at wind farms including in southwest Victoria and are increasingly reported on through post-construction monitoring
- Curlew Sandpiper, recorded north of the Project area although no habitat was identified. There was potential for direct impacts on this species through turbine collision.

Mr Venosta's evidence clarified several bird matters:

- for wide-ranging species such as Little Eagle, Black Falcon and White-throated Needletail no specific targeted survey was undertaken as there was no habitat to focus surveys on
- small numbers of Curlew Sandpipers may occasionally visit the habitat located outside the Project area and if any individual birds passed through there was a potential risk of turbine collision. The likelihood was considered low, and not likely to result in a significant impact on the species. Specific measures to monitor and respond to any detected impacts to this species would be included in the BAM Plan
- the White-throated Needletail would be included in the BAM Plan
- suitable wetland habitat for the Blue-billed Duck is present, particularly in larger permanent wetlands.

Aquatic species and reptiles

The MCA and the Thomas Family identified that Blind Creek is part of the migratory track of eels which are understood to be of high cultural significance to the Eastern Maar people.

Mr Venosta advised that recent changes to the road reserve crossings on South Road since the exhibition of the planning permit application has resulted in less overall Striped Legless Lizard habitat removal which is now 3.576 hectares. He recommended an Offset Management Plan be developed for Striped Legless Lizard.

Bats

Mr Venosta noted that the Yellow-bellied Sheath-tail Bat was recorded as present by the bat call recording, but the calls had not been manually confirmed and may be calls of other species. He confirmed no targeted survey was undertaken for GHFF as there was no habitat to focus surveys.

DEECA submitted that GHFF roost camps within potential nightly flight distance of the Project area include a camp at Warrnambool and a new camp near Lismore approximately 30 kilometres from the Project site. In recent decades, GHFF roost camps have increasingly been established in Victoria potentially in response to threats and availability of food sources. DEECA noted flowering Sugar Gums are a favoured food source and present in the area. Collision mortalities have been recorded at several wind farms in western Victoria over the last four years including nearby wind farms. DEECA supported recognition of the high likelihood of occurrence and the assessment that significant impacts were unlikely, but ahead of a BAM Plan being developed, it was not possible to assess whether the adaptative management measures would be effective.

Bat and Avifauna Management Plan

Mr Venosta stated that the BAM Plan would include monitoring requirements for mortality resulting from turbine collisions, and triggers and responses for detected mortalities of significant species including GHFF, Gang Gang Cockatoo and other species, which may include non-threatened species such as Wedge-tailed Eagle.

DEECA's experience with existing wind farms in the Barwon South West region had demonstrated that due to the challenges and uncertainties in understanding cumulative impacts, BAM Plans had not effectively facilitated a precautionary approach to prevent significant impacts on threatened species, and often no mitigative action (beyond monitoring) is undertaken. It recommended the BAM Plan objectives and framework be based on a precautionary approach, in line with requirements under the FFG Act to apply the precautionary principle to prevent potential significant impacts to threatened species. Mitigation measures should be prepared to allow for

immediate implementation of a mitigation response in the event of a significant impact (mortality) on any threatened species including:

- SBWB (MNES)
- Brolga
- White-throated Needletail (MNES)
- Curlew Sandpiper (MNES)
- GHFF (MNES).

It suggested allowances be set out in the BAM Plan for refining or altering mitigation responses based on the latest scientific understanding, if available.

It was DECCA's experience that the process of seeking multi-agency approval of mitigation responses to significant impacts can become protracted. Council supported this concern. Mr Venosta agreed that a lack of clarity about roles and responsibilities could lead to delays.

Mr Cumming submitted that current mortality monitoring was inadequate and did not cover a sufficient area to detect mortalities given the impact of turbine blades and the effects of turbulence. He cited research by Dr Wood for the Macarthur wind farm which found that monthly searches missed 30 per cent of birds compared to fortnightly searches.

Council submitted that where a species is facing an extremely high risk of extinction, any harm to that species should be regarded as significant and avoided. Where there are gaps in the information available as to the effects of a project on that species, as in the present case, the Panel should rely on proposed mitigation measures only where it has a high level of confidence in the effectiveness of those measures.

Council highlighted problems with existing BAM plans and stated that if a permit is to be issued, a BAM Plan should incorporate turbine curtailment requirements for species protection based on a range of factors such as wind speed and seasonal and daily curfews such as dawn to dusk.

Council submitted that the Maloney report was significant, in that it provided an independent assessment of how well existing permits, bird and bat monitoring programs and, more broadly, the planning system are working. In short, the report suggests that the system is not working.

Council submitted that where a species is facing an extremely high risk of extinction, any harm to that species should be regarded as significant and avoided. Where there are gaps in the information available as to the effects of a project on that species, as in the present case, the Panel should rely on proposed mitigation measures only where it has a high level of confidence in the effectiveness of those measures.

(iv) Discussion and conclusions

The WEF Guidelines require consideration be given to the sensitivity of any protected species to disturbance and measures to minimise impacts to any native species. It is of concern that the application documents and evidence did not explicitly consider of the potential impacts of the proposal on a number of FFG-listed species.

Birds

Concerns for impacts on bird species, particularly raptors, was widespread through submissions. While the Panel notes DEECA did not raise any concerns for non-listed bird species, the evidence provided clearly indicates that wind energy facilities have impacts on birds with mortality

monitoring data illustrating these impacts occur at a significant scale. Species such as the Wedge-tailed Eagle should be included in the BAM Plan as suggested by Mr Venosta.

Given the potential impacts of wind energy facilities on bird species, it remains unclear why the Panel was not provided with any substantial justification to focus on a targeted survey of listed species and not complete a BUS. The Panel accepts the summary findings for BUSs completed for nearby projects, but these were undertaken some time ago and without consideration of potential changes to bird behaviour in response to nearby wind energy facilities.

Consideration of the potential impacts to listed birds is generally limited to habitat impacts and addressed through avoidance of key habitats. There is little consideration of bird behaviour and particularly movement for foraging, breeding or migration. The general lack of information regarding bird movements on and through the site makes it difficult to consider whether the requirements of Clause 52.32-4 have been met with regard to significant habitat corridors and movement corridors.

The Panel is concerned that information regarding the potential impact on several FFG Act-listed wetland and raptor bird species was not clearly articulated. These include the critically endangered Black Falcon, the endangered Gull-billed Tern, Freckled Duck, Little Egret, and the vulnerable Eastern Great Egret, Little Eagle and Blue-billed Duck. The Panel accepts it is difficult to survey a wide range of species. It also accepts the Applicant's premise that the avoidance of preferred habitats may generally reduce the risk to these species. However, it is not sufficiently robust to attribute a low risk to a species when behavioural information on that species is not clearly articulated. All listed species recorded on the site or considered to have a medium or greater likelihood to occur should have clear information on potential impacts to them and be included in the BAM Plan.

Common Sandpiper was listed as vulnerable in Victoria in June 2023 and was observed at Wetland 2 during Survey 1. They were seen actively foraging although no roosting behaviour was observed. The species should be included in the BAM Plan with appropriate mitigation measures prepared.

The Panel's consideration of potential impacts on birds is constrained through a focus on a limited number of listed species and a lack of information on bird movement despite clear evidence that wind energy facilities have impacts on birds. The concerns described by previous Panels with regard to the difficulty of understanding the cumulative impact of multiple wind energy facilities on birds without clear coordination, guidance and collation of results across wind farms remain relevant to this Project. In the Panel's view, this is reinforced by the findings of Maloney.

Aquatic species and reptiles

Additional surveys for Hairy Burrowing Crayfish at underground cable route sites on Blind Creek are supported. However, a precautionary approach suggests that trenchless technology should be used wherever possible to avoid impacts to the creek particularly where surveys indicate the species is likely to be present.

The Panel notes the presence of Little Galaxias in Salt Creek and that there is potential suitable habitat at Blind Creek and its associated wetlands. Potential impacts arising from road and bridge upgrades on Blind Creek and cabling are not addressed in the assessment. The mitigation requirements required through the EMP for Hairy Burrowing Crayfish are likely to apply in large part to this species and it is accepted that it is unlikely to result in a significant impact. However, there is merit in extending the survey for Hairy Burrowing Crayfish to include Little Galaxias to ensure impacts are avoided.

The extent of Striped Legless Lizard habitat impacted by proposed upgrades to South Road has not been confirmed as the final alignment and design of the road is to be decided through permit conditions. The potential changes to the amount of habitat affected as proposed by Mr Venosta are accepted as an upper limit of unavoidable impact, and the Panel supports the use of existing road access locations unless it is not physically possible. Offsets are required for up to 3.576 ha of habitat loss and this should be included in the proposed Offset Management Plan. This Plan does not appear to be included in the draft EMP Framework and should be.

Bats

As with bird species, the Panel is concerned that the potential impact on the Yellow-bellied Sheath-tail Bat, listed as vulnerable under the FFG Act, is not addressed. At a minimum, measures to mitigate impacts on this species should be included in the BAM Plan.

The Panel agrees with DEECA that it is not possible to assess whether the impacts on GHFF will be potentially significant or that the adaptative management measures would be effective once the project starts operating ahead of a BAM Plan being developed.

Bat and Avifauna Management Plan

The BAM Plan provides the coordinating function for responses to bat and bird impacts. DEECA's experience that the BAM process has not facilitated a precautionary approach to preventing potential significant impacts is concerning.

At this stage, the BAM Plan is the accepted process to establish and implement appropriate mitigation strategies to address potential impacts and respond to confirmed impacts. The Panel was not provided with a draft BAM Plan to consider.

The Panel agrees with DEECA that roles and responsibilities for mitigation measures within BAM Plans need to be clear to enable timely responses to significant impacts.

Considering the uncertainty surrounding cumulative impacts on listed species, the BAM Plan should include all relevant MNES and species listed under the FFG Act. As noted earlier, this will require measures to be developed for the recently listed Common Sandpiper. It should also include the Gang Gang Cockatoo and non-threatened species such as Wedge-tailed Eagle as suggested by Mr Venosta.

In the context of the Panel's comments above on monitoring in the SBWB AMP, the proposed 3-year duration of the mortality monitoring program under the BAM Plan is considered inadequate. However, the Panel is unable to confidently establish an appropriate monitoring program for the life of the Project. This should be agreed with DEECA.

The BAM Plan should be able to respond to an evolving understanding of species ecology, cumulative impacts from other wind energy facilities and changing conditions over the life of the Project. However, there is no clear review process in the proposed BAM Plan. The Panel notes the Applicant's commitment to an annual review of the effectiveness of SBWB mitigation measures and considers there is merit in extending this approach to ensure that all mitigation responses are based on the latest scientific understanding as suggested by DEECA.

Mortality monitoring is recognised as a key input to the design and implementation of mitigation measures. There is clearly a need for coordination and consistency so that this critical data can be used with confidence to avoid significant impacts on fauna throughout the life of the Project.

Importantly, DEECA's submission pointed to a fundamental challenge relating to GHFF. It submitted that, ahead of a BAM Plan being developed, it was not possible to assess whether the adaptative management measures proposed would be effective. This challenge applies to other species which will have mitigation measures established through the BAM Plan and means the Panel is unable to fully consider the effectiveness of mitigation measures and the overall impact of the Project on bat and avifauna species.

Further information is required to articulate impacts and mitigation measures arising from SBWB movement within and through the site prior to further consideration of a permit. A site plan should be prepared to assist planning and operations which show areas of higher SBWB activity, habitat features, corridors and buffers to be avoided.

(v) Conclusions and recommendations

The Panel concludes:

- Based on the information provided, the potential impacts on listed bird and bat species are not able to be adequately considered including habitat and movement corridors as required in Clause 52.32.
- Impacts to the Striped Legless Lizard are unavoidable and can be appropriately managed through detailed design, mitigation methods and securing offsets. An Offset Management Plan should be developed for Striped Legless Lizard and included in the EMP including offsets for up to 3.576 hectares of habitat loss. This can be addressed by a permit condition.
- The Project is unlikely to result in a significant impact on aquatic species and other reptiles through the implementation of appropriate mitigation measures. However, permit conditions should be applied for:
  - trenchless technology to be used for cabling wherever possible to avoid impacts on waterways and listed aquatic species.
  - survey efforts for Hairy Burrowing Crayfish prior to works on Blind Creek should be extended to include Little Galaxias to ensure impacts on that species are avoided.
- Further information is required prior to further consideration of a permit:
  - further work to enable consideration of cumulative impacts including from the Salt Creek, Dundonnell and Mortlake South wind energy facilities to fauna species
  - the potential impacts on FFG-listed species including:
    - bird species including Black Falcon, Gull-billed Tern, Freckled Duck, Little Egret, Eastern Great Egret, Little Eagle and Blue-billed Duck
    - Yellow-bellied Sheath-tail Bat
  - completion of a BAM Plan to enable an assessment of the effectiveness of proposed adaptative management measures on bat and bird species. This should:
    - include all EPBC Act and FFG Act listed species recorded on the site or considered to have a medium or greater likelihood to occur including Common Sandpiper, Gang Gang Cockatoo and icon species such as Wedge-tailed Eagle
  - clarify and confirm roles and responsibilities for mitigation measures
  - establish a precautionary mortality monitoring program for the life of the Project in consultation with DEECA
  - include an annual review and revision process which considers the effectiveness of all mitigation measures, the latest scientific understanding and the cumulative impacts of other wind energy facilities.

The Panel recommends:

Before further considering Planning Permit Application PA1800406, direct the Applicant to provide the following further information to the satisfaction of the Department of Energy, Environment and Climate Change (Environment Portfolio):

a) **Assess the cumulative impacts to fauna species including from the Salt Creek, Dundonnell and Mortlake South wind energy facilities. The assessment should include information on behaviour, habitat utilisation and movement, and clear guidance on gathering and assessing information.**
b) **Further assess potential impacts on *Flora and Fauna Guarantee Act 1988* listed species including:**
    - **bird species including Black Falcon, Gull-billed Tern, Freckled Duck, Little Egret, Eastern Great Egret, Little Eagle and Blue-billed Duck**
    - **Yellow-bellied Sheath-tail Bat.**
c) **Complete a Bat and Avifauna Management Plan to enable an assessment of the effectiveness of proposed adaptative management measures on bat and bird species. This should:**
    - **include all Environment Protection and Biodiversity Conservation Act 1999 and *Flora and Fauna Guarantee Act 1988* listed species recorded on the site or considered to have a medium or greater likelihood to occur including:**
        - **Common Sandpiper**
        - **Gang Gang Cockatoo**
        - **icon species such as Wedge-tailed Eagle**
    - **clarify and confirm roles and responsibilities for mitigation measures**
    - **establish a precautionary mortality monitoring program for the life of the Project in consultation with Department of Energy, Environment and Climate Change (Environment Portfolio)**
    - **include an annual review and revision process which considers the latest scientific understanding, the effectiveness of all mitigation measures and the cumulative impacts of other wind energy facilities.**

Providing the further information satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Pemit for the proposed development subject to the Panel's version of planning permit conditions in Appendix F conditions:

a) **Amend the Development Plans condition to to provide for trenchless technology for cabling to avoid impacts on waterways and listed aquatic species and avoid works exclusion areas and wetland buffers**
b) **Amend the traffic upgrade works condition to require the design of South Road and bridge upgrades to minimise the environmental disturbance to Striped Legless Lizard habitat, Hairy Burrowing Crayfish and Little Galaxias**
c) **Amend the Environmental Management Plan condition to:**
    - **provide for surveys of Little Galaxias**
    - **include an Offset Management Plan for Striped Legless Lizard including offsets for up to 3.576 hectares of habitat loss**
d) **Amend the Bat and Avifauna Management Plan condition to:**

- **include mitigation measures for Common Sandpiper, Gang Gang Cockatoo and Wedge-tailed Eagle**
- **include a site plan showing areas of higher Southern Bent-wing Bat activity, habitat features, corridors and buffers to be avoided**
- **require the monitoring program to extend for the life of the project**

e) Review the final planning permit conditions to ensure they apporiately respond to the findings of the additional assessments and documents provided.

3.6 Matters of National Environmental Significance

(i) The issue

The issue is whether the impacts on MNES are acceptable.

(ii) Background

The EPBC Assessment Scope required a description of all the relevant predicted and foreseeable environmental impacts of the proposed project on all relevant MNES and specified impacts on:

- Southern Bent-wing Bat
- NGTVVP and SHW
- a range of other listed species and ecological communities.

The assessment of the impact on 21 MNES in the application documents is summarised in Table 6. Some information is also contained in Table 5. For the reasons set out in previous chapters, the Panel does not agree with the assessments in relation to SBWB (refer to Chapter 3.3).

Table 6 Matters of National Environmental Significance

MNES	Impact
Flora	
Spiny Rice-flower	Detected in two road reserves. Areas will be avoided. No significant impact
Basalt Rustyhood	Sole Victorian population present in road verges of the Woorndoo-Darlington Road but not detected on Project site. All habitat excluded. No significant impact
Adamson's Blown-grass	Not detected on Project site. All potential habitat excluded. No significant impact
Fragrant Leek-orchid	Not detected on Project site. All potential habitats including damp *Themeda* grasslands excluded. No significant impact
Small Golden Moths Orchid	Not detected on Project site. All potential habitat excluded. No significant impact
Hoary Sunray	Not detected on Project site. All potential habitat excluded. No significant impact
Spiny Pepper-cress	Closest important population of Spiny Pepper-cress located within private property in Mortlake. All potential habitat excluded. No significant impact
Swamp Fireweed	Not detected on Project site. All potential habitat excluded. No significant impact
Swamp Everlasting	Important populations are not located in vicinity of Project site. No significant impact
Clover Glycine	Not detected on Project site. All potential habitat excluded. No significant impact
Salt-lake Tussock-grass	Not detected on Project site. All potential habitat excluded. No significant impact
Ecological communities	

MNES	Impact
Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP)	Refer Chapter 3.2
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Unlikely to have significant impact. Refer Chapter 3.2
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Vegetation studies have determined that this community is not present within the project area. Unlikely to have significant impact
Fauna	
Southern Bent-wing Bat	Refer Chapter 3.3
Grey-headed Flying-fox	Refer Chapter 3.5 and Table 5 - significant impact unlikely. Apply BAM Plan
Curlew Sandpiper	Refer Chapter 3.5 and Table 5 - significant impact unlikely. Apply BAM Plan
White-throated Needletail	Refer Chapter 3.5 - significant impact unlikely. Apply BAM Plan
Corangamite Water Skink	Refer Table 5 - unlikely to result in significant impact
Striped Legless Lizard	Refer Table 5 - potential significant impact. Offsets are required for this impact
Golden Sun Moth	Considered absent from study area. Potential habitat exists. Not likely to result in a significant impact
Growling Grass Frog	Considered absent from study area. Potential to occur in wetlands. Not likely to result in a significant impact
Yarra Pygmy Perch	Recorded downstream of study area. Suitable habitat identified within Salt Creek and Blind Creek has been avoided. Likely occurrence is low to medium. Unlikely to compromise downstream water quality and not likely to result in a significant impact
Little Galaxias	Detected in Salt Creek. Not recorded at Blind Creek, though potential suitable habitat exists and may be temporary due to ephemeral waterways. No impact to Salt Creek anticipated. Not likely to result in a significant impact
Migratory species	
Nineteen migratory species recorded or predicted to occur in the project area. Sharp- tailed Sandpiper, Latham's Snipe, Red-necked Stint and Common Sandpiper were recorded. No sites within the study area or its vicinity can be considered important habitat. Direct impacts on suitable wetland habitat avoided and not likely to have a significant impact	
Ramsar sites	
No direct hydrological connection with majority of wetlands that comprise the Ramsar site. Project site appears to lack direct hydrological connection with Lake Bookar, or Lake Colongaluc. Closest wetlands occur in neighbouring river basin. is Unlikely to result in a significant impact	

(iii) Evidence and submissions

Evidence and submissions relating to MNES are also included in Chapters 3.2, 3.3 and 3.5 which contain a more detailed description of the assessment outcome for EPBC Act listed matters.

(iv) Discussion

Flora species

The Panel is satisfied that there will be no impact on the SHW community, the Grassy Eucalypt Woodland of the Victorian Volcanic Plain community or to listed flora species under the EPBC Act, for the reasons discussed in Chapter 3.2. The proposed reduction of several small patches of NTGVVP beneath the 0.05 hectare threshold for listing is of concern as outlined earlier. These patches should be retained in the design of proposed works as recommended in Chapter 3.2.

Fauna species

Significant impacts are expected to occur to several species including the SBWB, Striped Legless Lizard. The Panel is satisfied that some level of impact to the Striped Legless Lizard is unavoidable due to the proposed road and bridge upgrades and can be appropriately managed through permit condition and offsets.

As the primary management mechanism for birds and avifauna, the BAM Plan has a central role in managing threatened species impacts and should apply to all relevant MNES including those recorded on site or with a medium or greater likelihood of occurring on site.

The Panel agrees with DEECA's concern that ahead of a BAM Plan being developed, it is not possible to assess whether the adaptative management measures for GHFF are effective. This constraint applies to all MNES species proposed for inclusion within the BAM Plan and the Panel is unable to determine the extent of impacts to MNES without a clear view of the proposed mitigation measures. Chapter 3.5 sets out the Panel's recommendations relating to the BAM Plan it its provision prior to the further consideration of the permit.

The Panel is satisfied that no significant impacts are likely to occur to Little Galaxias and the Yarra Pygmy Perch. It notes, however, that potential impacts to Little Galaxias arising from road upgrades and cabling on Blind Creek are not addressed in the assessment. Little Galaxias are present in Salt Creek and there is potential suitable habitat disturbance at Blind Creek and its associated wetlands. Mitigation required through the EMP for Hairy Burrowing Crayfish are likely to address potential impacts on the species. The proposed surveys for Hairy Burrowing Crayfish should be extended to include Little Galaxias.

Issues associated with impacts on SBWB are discussed in Chapter 3.3. Potential impacts on GHFF are discussed in Chapter 3.5 including through the submission of a BAM Plan.

(v) Conclusions

The Panel concludes:

- There will be no significant impact on SHW community, the Grassy Eucalypt Woodland of the Victorian Volcanic Plain community or to listed flora species.
- There will be no significant impact on the Yarra Pygmy Perch and Growling Grass Frog.
- There will be no significant impact on Little Galaxias subject to appropriate survey and mitigation methods.

- The proposed impacts to the Striped Legless Lizard and NTGVVP are unavoidable and can be appropriately managed through permit conditions and offsets.
- Impacts on SBWB should be the subject of further assessment as recommend in Chapters 3.3 and 3.5.

4 Landscape and visual impact

4.1 Background

(i) Relevant information

Relevant information includes (refer to Appendix D for more detail):

- Policy:
  - Clause 12.05-2S (Landscapes)
  - Clause 19.01-2S (Renewable energy)
  - Clauses 21.04 (Municipal vision), 21.06 (Environment) and 21.09-4 (Mortlake)
- Particular provisions:
  - Clause 35.07 (Farming Zone) which includes decision guidelines relating to measures to minimise adverse impacts on the vistas in addition to the character and appearance of the area or features of natural scenic beauty or importance
  - Clause 52.32 (Wind Energy Facilities) which identifies:
    - a context analysis consider the landscape of the site and views to and from the site
    - a design response consider accurate visual simulations and describe how the proposal responds to any significant landscape features and assesses the visual impact of the proposal on the surrounding landscape
    - decision guidelines requiring consideration of the impact:
      - of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts
      - on the character and appearance of the area or natural features of architectural, historic or scientific significance or of natural scenic beauty or importance
- Application material:
  - Landscape and Visual Impact Assessment, Urbis, August 2022[54] (LVIA)
  - Before and After Photosimulations, Urbis, September 2022[55] (Photosimulations)
  - EMP Framework which identifies that the EMP will include construction and operational plans including plans for landscape management
- draft Permit conditions including for off-site and on-site landscaping
- WEF Guidelines (see below)
- *South West Victoria Landscape Assessment Study*, June 2013.

(ii) WEF Guidelines

The WEF Guidelines deal with landscape and visual impacts in the following sections:

- Section 2.1.2 Significant landscape values
- Section 4.3.2 Application requirements for a wind energy facility
- Section 5.1.3 Landscape and visual impact
- model conditions for landscaping including for an off-site landscaping program.

The WEF Guidelines support consideration of:

[54] Document 11
[55] Document 26

- the visibility of the development
- the locations and distances from which the development can be viewed
- the impact on significant views, including visual corridors and sightlines
- the significance of the landscape as described in the planning scheme
- landscape values such as areas of landscape and environmental significance
- the sensitivity of the landscape features to change.

Visual impact is defined as including the number, scale and spacing of the turbines, avoidance of visual clutter caused by turbine layout and ability to view through an array of turbines, and proximity to sensitive areas. Measures to reduce visual impacts include landscape vegetation screening.

(iii) Landscape and Visual Impact Assessment

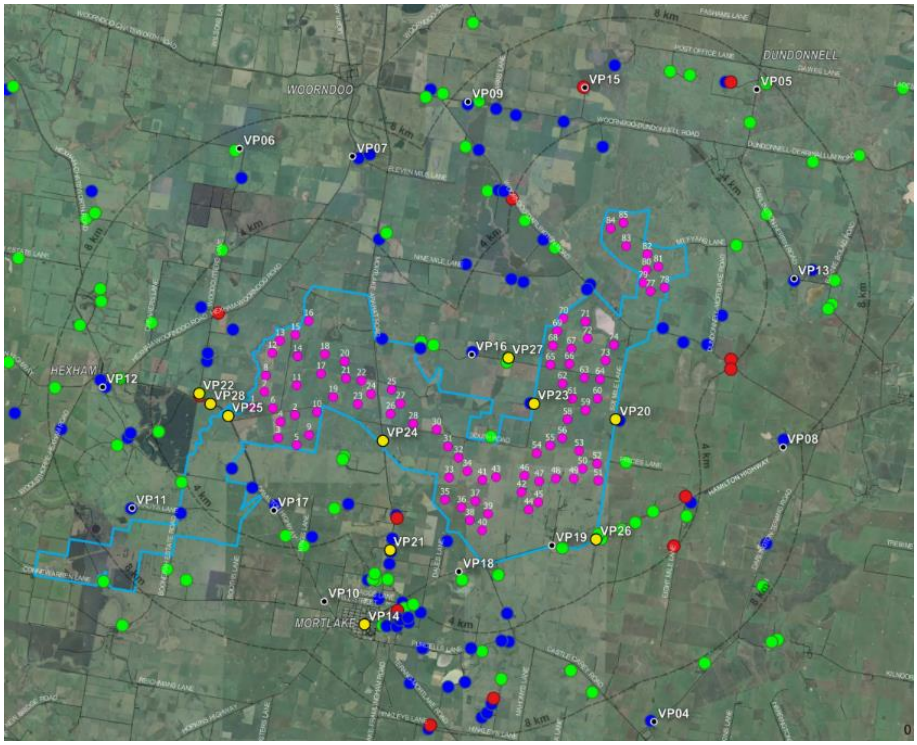
The LVIA included a quantitative and qualitative assessment which considered:

- prominence of the Project within the landscape setting from particular viewpoints based on distance and Project extent (the horizontal and vertical field of view occupied)
- screening effects of vegetation, topography and built form (landscape absorption)
- the scenic quality of the landscape setting
- visual and viewer sensitivity
- community values and perceptions
- cumulative impact.

The LVIA identified the visual catchment and dwellings assessed (except dwellings with agreements in place). A View Location Map (Figure 6) identifies:

- viewpoints within the local (4 kilometre) and sub-regional (4-8 kilometre) visual setting
- the extent to which existing dwelling vegetation screens views from the proposed turbines (pink dots) to a high (green dots), partial (blue dots) or minimal (red dot) level.

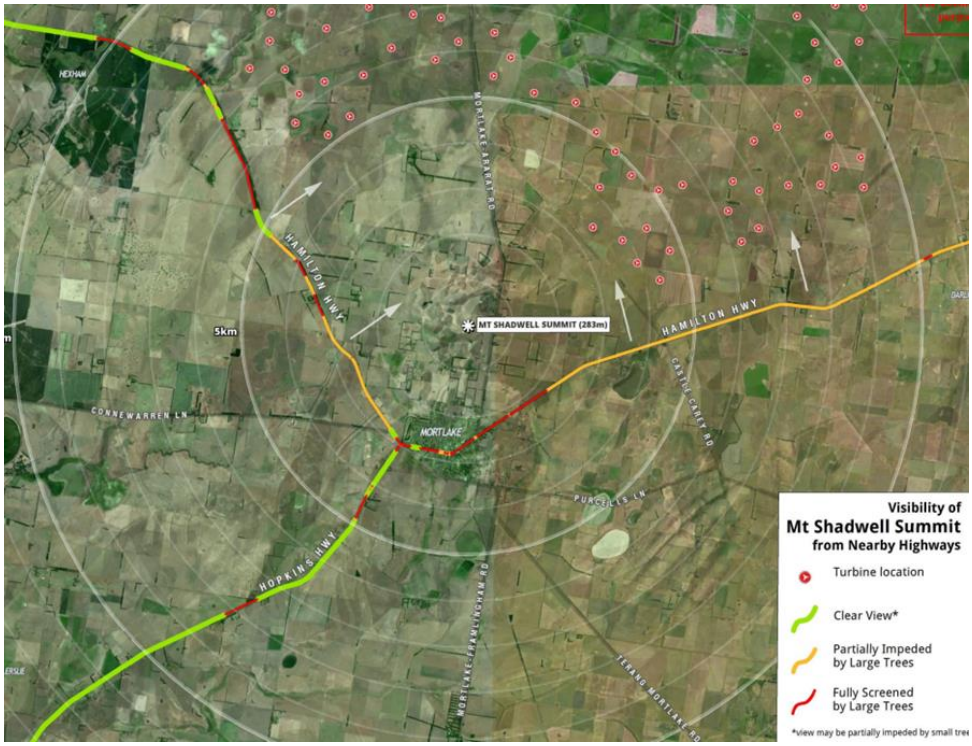
Figure 6 Viewpoints and screening impact of existing vegetation



A more detailed viewpoint analysis was undertaken of 21 residences in Mortlake and along Mortlake - Ararat Road and Hamilton Highway identified as having a high or moderate level of sensitivity. This included photosimulations of proposed turbines and transmission lines.

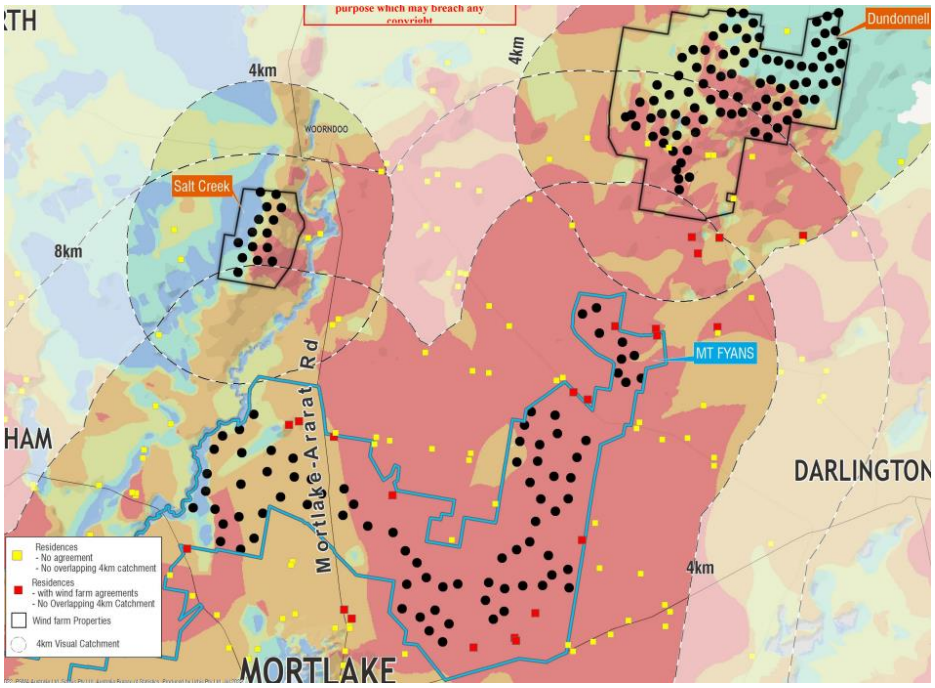
The LVIA also examined impacts on views to Mount Shadwell along the Hamilton and Hopkins Highways (Figure 7).

Figure 7 Views to Mount Shadwell



The LVIA included a cumulative impacts assessment for rural residences which included the Project, Dundonnell and Salt Creek wind farms (Figure 8).

Figure 8 Cumulative impact for rural residences



The LVIA includes design guidelines for amelioration of visual impacts through building and turbine design, colouring, placement and pattern.

(iv) South West Landscape Assessment Study

The South West Victoria Landscape Assessment Study:

- defines and describes the landscape character of the South West region
- identifies eight Landscape Character Types and within each Landscape Character Areas
- locates Mortlake and surrounds including the Project area within the Western Volcanic Plains Landscape Character
- identifies Mount Shadwell (within the Southern Cones landscape sub type) as a landscape of State significance with major viewing corridors identified as:
  - Hamilton Highway to the north and east of Mortlake, and west and south of the Project
  - Mortlake Ararat Road to the north of Mortlake and the west of the Project
  - Terang Mortlake Road to the south of Mortlake
- proposes a Significant Landscape Overlay (SLO).

An SLO has not been applied to date despite the South West Victoria Landscape Assessment Study being completed in 2013. The Study is not referenced in the Moyne Planning Scheme.

4.2 Landscape and visual impact

(i) The issues

The issues are:

- the adequacy of and methodology applied in the LVIA
- whether the Project will have an unacceptable visual impact on the landscape including cumulative landscape impacts
- the value of landscape mitigation measures in managing landscape and view impacts.

(ii) Evidence and submissions

Many submissions raised concerns about the impact of the Project on the landscape including that it would:

- degrade the rural landscape which in some submissions was described as pristine and having visual beauty
- impact on views and rural outlooks
- result in industrialisation of the landscape
- impact on Mortlake's aesthetic character, liveability and attractiveness as a place to live
- add to cumulative impacts on Mortlake (creating an island in a sea of turbines) and the region.

By contrast one submission identified that turbines were graceful and do not detract from the landscape and a number of supportive submissions cited the clean energy benefits of the Project.

Landscape and visual impacts

The landscape evidence of Peter Haack for the Applicant provided an overview of the LVIA findings (which he did not author), including:

- the Project will change the landscape of the setting at the local, sub regional and, to a lesser extent, the regional level (greater than 8 kilometres)
- the landscape character of the broader setting exhibits a range of scenic qualities from low to high, with the project area occurring predominately within a low scenic quality landscape characterised by broad, mostly cleared and often highly modified agricultural plains, with minimal topographic variation, and with infrastructure such as powerlines, as well as existing wind energy facilities
- Mount Shadwell is recognised as a significant feature within the landscape. The Project design ensures that views from the Hamilton Highway to Mount Shadwell are not interrupted, with wind turbines offset from the central field of view.

Mr Haack's evidence was that the LVIA identified that in terms of visual impact that:

- the rural properties surrounding the Project area are mostly working farms, not lifestyle properties
- many of these rural residences have a dense band of vegetation surrounding an intimate and secluded garden or living area which generally acted to contain the viewshed from the house and surrounding living area itself and block more distant views
- from the majority of residential and road viewpoints, views to the entire Project will either not be possible or will be heavily filtered by existing vegetation. Therefore, the impacts will generally be low
- the co-located powerline will be viewed in the context of the existing powerline and is generally located in a setting that has been subject to modification, including land clearing and the Dundonnell wind energy facility power infrastructure
- planting near the view point of the properties identified as having a high visual impact (six properties within 4 kilometres) and the moderate to high visual impact (7 properties within 4 to 8 kilometres) would ameliorate the impacts
- roadside vegetation along the Hamilton Highway reduces the level of Project visibility to travellers whose viewpoints are typically forward in the direction of travel and not perpendicular towards offset turbines.

Council and the Thomas Family considered the visual assessment had disregarded community views and the rural landscape impacts. They said the Project represented the industrialisation of a reliable and productive pastoral area.

Peter Williamson (Submission 41 and co-presenter with MCA) resided on the northern edge of Mortlake and enjoyed the views to the foothills and elevated views to the east. He said the visual impact of views to 34 turbines would destroy his landscape views. It would add to existing views to the Dundonnell and Mortlake South wind farms from his property and be highly disruptive to the amenity and enjoyment of his family's home.

Mr Williamson considered the landscape assessment focused on the impacts on arterial roads and that most views would be static ones from residents and visitors rather than from passing motorists. He said the photosimulations were not true reflections of what would be seen. For example, the transmission lines were not included.

Lauchlan Cumming (Submission 94) likened the proposal to a 'wind factory' and that his property would be jammed between the existing Mortlake South site, the current proposal and proposed Darlington project. He was critical of the landscape evidence and inferences that the landscape

was of no intrinsic value or not significant. He considered the landscape was significant to locals and comprised remarkable features with Mount Shadwell the centrepiece.

Anne Blacker (Submission 109 and member of the MCA with which she co-presented) considered the proposal would ruin (and make ugly) views from properties on the west side of Prentices Lane towards Hamilton Highway and on occasions to the Grampians. These views already included high voltage powerlines and existing windfarms.

For Ms Parker the visual impact would interfere with her enjoyment of the landscape.

The MCA considered the turbines would "*stick out like proverbial sore thumbs*" and be a "*blot on the landscape*" for travellers and nearby residents, in a generally flat and cleared landscape. It was critical of the LVIA, and observed the turbines could not be likened to sculptural landscape elements as they were not static. Unlike the driver experience, a local resident or farmer would look at the turbines for hours at a time and the impact will not be transitory.

The MCA was critical Mr Haack had not undertaken or attributed any weight to surveys of the local community including those closest to the proposed turbines such as the Thomas Family. He had not assessed views from their house or the value of existing vegetation in screening views. Rather he had relied on satellite photography, a 'drive-by' and desktop analysis. Further Mr Haack had not enquired of the Berrybank Wind Farm to analyse the predicted landscape assessment and the mitigation value of proposed amelioration measures. It considered this approach did not constitute a proper visual assessment of impacts.

David Allen (a member of the MCA with whom he co-presented) considered wind farms had turned "*the majestic western plains into an industrial landscape*." The Project would add to the natural landscape degradation from the Dundonnell and Salt Creek turbines. He would have close to 360-degree views of turbines from his house as a result of the Project and referred to what other submitters identified as aerial spaghetti of transmission lines criss-crossing the landscape.

It was Ms Hicks' experience that turbines 10 kilometres away (Dundonnell) had significantly altered the skyline and distant views and Mortlake would be significantly visually impacted. She noted that the turbines would be taller than Mount Shadwell.

The Applicant submitted that it was self-evident that wind energy facilities, by virtue of their scale will have a visual impact from individual dwellings and when considered from public vantage points. This was an unavoidable consequence of the need to locate a wind energy facility in places where the best wind resource is available. It acknowledged that the Project will result in a change in the landscape and that there will be visual impacts associated with it, some of which could be ameliorated by landscaping. The issue was whether the impacts are acceptable.

It submitted there was no countervailing landscape value recognition or protection in the Planning Scheme afforded to the Project area or its surrounds that would suggest that the Project area is not an 'appropriate location'. For example:

- there is no SLO, Environmental Significance Overlay (ESO), or any other planning control in place that identifies or seeks to protect any part of the Project area as a significant or important landscape for the purpose of Clause 12.05-2S
- no part of the Project area is part of a distinctive area or landscape
- the only attribute of landscape significance recognised within Clause 21.09-4 in the vicinity is Mount Shadwell which seeks to protect views to it

- Clause 21.02 (Municipal overview) does not identify any significant landscapes or character considerations for Moyne's broad acre farming areas in the vicinity
- there are no statutory or strategic directions that would support the contention that seeks to protect or preserve farm paddocks and local roads from visual intrusion.

In terms of visual impacts, the Applicant identified that:

- the Project area possess no unique or noteworthy environmental, aesthetic, or geological/geomorphological characteristic that has warranted planning protection
- the South West Victorian Landscape Assessment Study identified Mount Shadwell as the only landscape element of State or regional significance. The important views to it had been given appropriate regard in design to ensures that views from Hexham and the Hamilton Highway on the western approach to Mount Shadwell were not interrupted
- views from Mortlake to the Project are not possible due to intervening topography, vegetation and buildings and key views to Mount Shadwell from Mortlake are unaffected
- the Farming Zone is not a zone where there can be a reasonable expectation of protection of views from within a working agricultural landscape to other parts of the working agricultural landscape
- the consideration of visual impact cannot be based just on visibility or change to a setting. The proper approach is to consider whether the level of visual intrusion is acceptable.

In regard to the LVIA and Mr Haack's assessment, the Applicant submitted:

- it used objective techniques to determine where turbines will be visible from, and to characterise levels of dominance based on human fields of view
- was a comprehensive, robust, well-ordered framework for evaluating the landscape and visual impacts and was consistent with the approach set out in the WEF Guidelines
- it supports the position that turbines will be visible in the broader landscape but due to separation, topography and screening will mostly not be dominant or overwhelming
- views experienced from local roads and when working agricultural land, were not considered by Mr Haack to be sensitive land uses or viewpoints, when assessed using the methodology outlined in the LVIA
- Mr Haack's assessment adopted a conservative approach and methodology. He had accorded the highest level of visual sensitivity (to change) to residences, townships and major roads within 5.9 kilometres of the Project, noting that as distance increases between the receptor and turbines the visual impact of the development decreases (the 'distance decay' effect)
- individual assessments of residences were not undertaken if assessed as highly screened.

The Applicant submitted the Project:

- has managed and minimised potential adverse effects and that the visual impacts were acceptable when judged in accordance with the provisions in the Planning Scheme
- is consistent with the achievement of State, regional and land local landscape policies, and the proposed landscaping mitigation of visual effects was consistent with established practices for wind energy facilities and the WEF Guidelines.

Cumulative impacts

In relation to cumulative impact, it was Mr Haack's evidence that:

- simultaneous cumulative impacts will primarily relate to the viewshed of the Project, Salt Creek, Dundonnell and Mortlake South wind farms

- for the majority of residential and road viewpoints, views to large proportion of all wind turbines will typically not be possible as they will be screened or filtered by existing vegetation
- simultaneous cumulative impacts will be low to moderate due to the low number of dwellings (four without agreements) within 4 kilometres of multiple projects, the distance between projects and the Project from Mortlake, and wider and regular spacing than the Dundonell wind energy facility which would reduce visual clutter
- high visual impacts on residential viewpoints could be effectively ameliorated though off-site landscape plans.

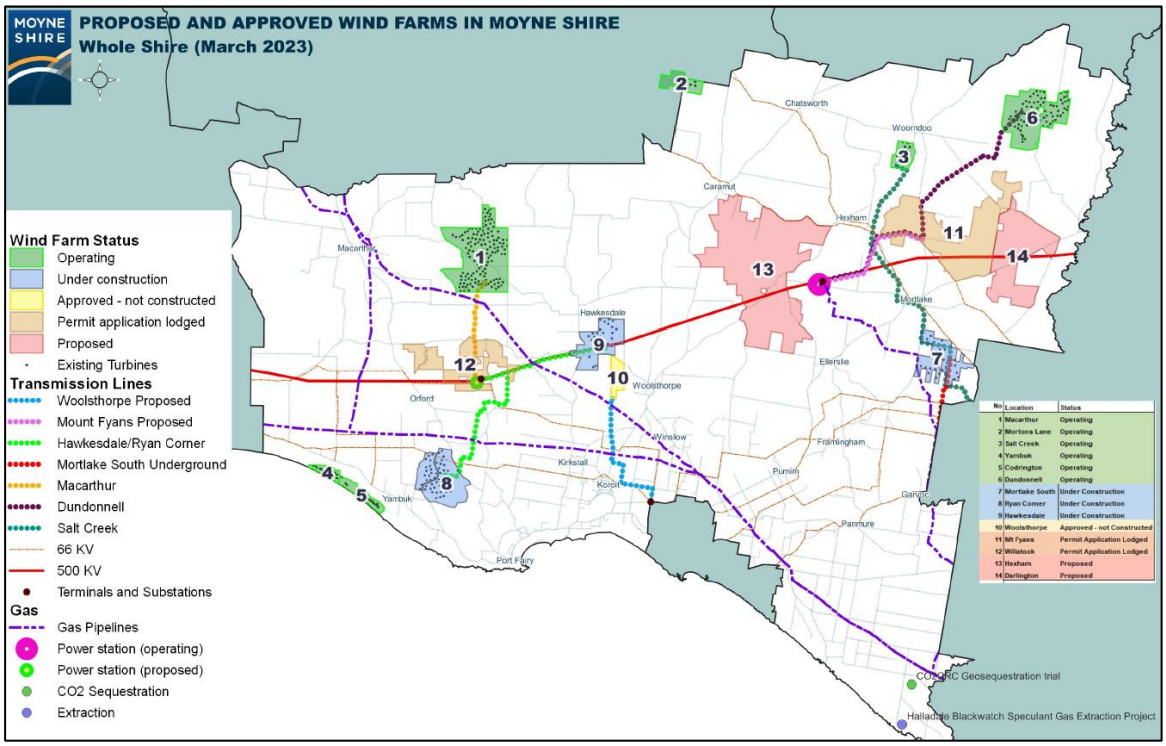
Mr Haack's additional assessment of sequential visual impact for users of the Hamilton Highway found that for 72 kilometres of roadway, extending from the east of Berrybank wind farm to the west of the Project, 30 kilometres would be within the potentially dominant zone of the Project and existing wind farms. This conservative assessment did not factor in screening effects of roadside and other vegetation throughout the landscape. Once vegetation, viewing direction and travel speed are factored in the sequential cumulative impacts would be acceptable.

The MCA and Thomas Family submitted Mr Haack had down played cumulative impact. It considered the cumulative impact of the Project and other wind farms (including those proposed) *"would alter the landscape permanently, transforming its rural character to industrial character dominated by wind farms*".

Gaye Haworth (Submission 79 and who co-presented with the MCA) submitted she already had views to two wind farms from her property and was concerned that Mortlake would be completely surrounded, and the rural landscape setting impacted.

Council's submission identified the Project in the context of other operating, approved or proposed wind farms (Figure 9).

Figure 9 Proposed and approved Wind Farms in Moyne Shire



Source: Document 239b Note: 1 – Macarthur, 2 – Mortons Lane, 3 - Salt Creek, 4 - Yambuck, 5 – Codrington, 6 - Dundonnell, 7 – Mortlake South, 8 – Ryan Corner, 9 – Hawksdale, 10 – Woolsthorpe, 11 – Mt Fyans, 12 – Willatook, 3 – Hexham, 14 - Darlington

Council considered the Project would result in a significant cluster of wind farms in the north-east of the Shire, and an increasing visual dominance of the landscape and, with the proposed Hexham and Darlington projects, would effectively surround Mortlake. It was critical that the LVIA and Mr Haack did not consider proposed projects or the views of the landscape by residents as they go about their lives.

The Applicant was critical of Council's mapping because it included applications which have not been publicly exhibited or approved and included entire sites not just turbine locations. It was not suggestive of saturation or overwhelming.

The Applicant relied on the LVIA and Mr Haack's evidence which it considered provided an appropriate analysis and understanding of the cumulative visual effects. The cumulative impact of the Project together with other existing wind farms is, for static views, not dissimilar from views of a single wind farm, where a limited number of turbines are visible at any one location.

It accepted that the presence of multiple wind farms in the area will mean that, when travelling through the area, more turbines will be viewed. However, the cumulative visual analysis shows that at no location does this result in a visual setting which is overbearing or incongruous. While there will be views of wind turbines across the region this is not inherently negative or unacceptable. It is to be expected and is unavoidable when considered within a policy context which seeks to facilitate wind energy facilities.

Landscape planting

Mr Haack's evidence set out his opinions in relation to the effectiveness of off-site planting measures and included an example offsite landscape plan. He considered the off-site amelioration proposed would be highly effective, with a high visual impact able to be reduced progressively to low over five to seven years as vegetation establishes. He considered it improbable entire screening belts of vegetation would all die at the same time leaving views towards the Project fully exposed.

Council said the reliance on landscaping responses was symptomatic of inappropriate siting and that wind row vegetation had not been assessed to determine its health. There was no certainty existing vegetation would survive the life of the Project and noted landowners were being relied on to maintain it. It considered a permit requirement should be included to replace lost vegetation periodically, proposed the cash-in lieu option for off-site landscaping be removed to ensure landscaping was undertaken, and that landscaping be completed within three years.

Mr L Cumming said the use of tree planting to block out views to turbines would be ineffective. The planting of vegetation on individual properties was a matter for the land owner to determine (in terms of species and location) and should not be dictated by the wind farm operator. He said there was a risk that planting on individual properties would be made conditional on not making future complaints. He considered such plantings could interfere with future noise compliance testing. If plantings were required, they should take place on the Project land.

The MCA and Thomas Family submission considered plantings would have limited benefit for those that worked outside for most of the time and that they would take years to provide any screening value. It noted that screening vegetation could be lost in drought or bushfire, add risk (bushfire) and add work (watering and maintenance) and would "*hem in*" rural residents so that they were unable to otherwise appreciate their sense of space.

The Applicant advised that it has offered all residences within 4 kilometres landscaping on a without prejudice basis. The proposed landscaping conditions were appropriate and accepted approaches to mitigating visual impact. It would also be a reasonable expectation that any loss of vegetation would be replaced by the landowner. It suggested minor variations to the landscaping conditions but did not accept most of Council's proposed changes.

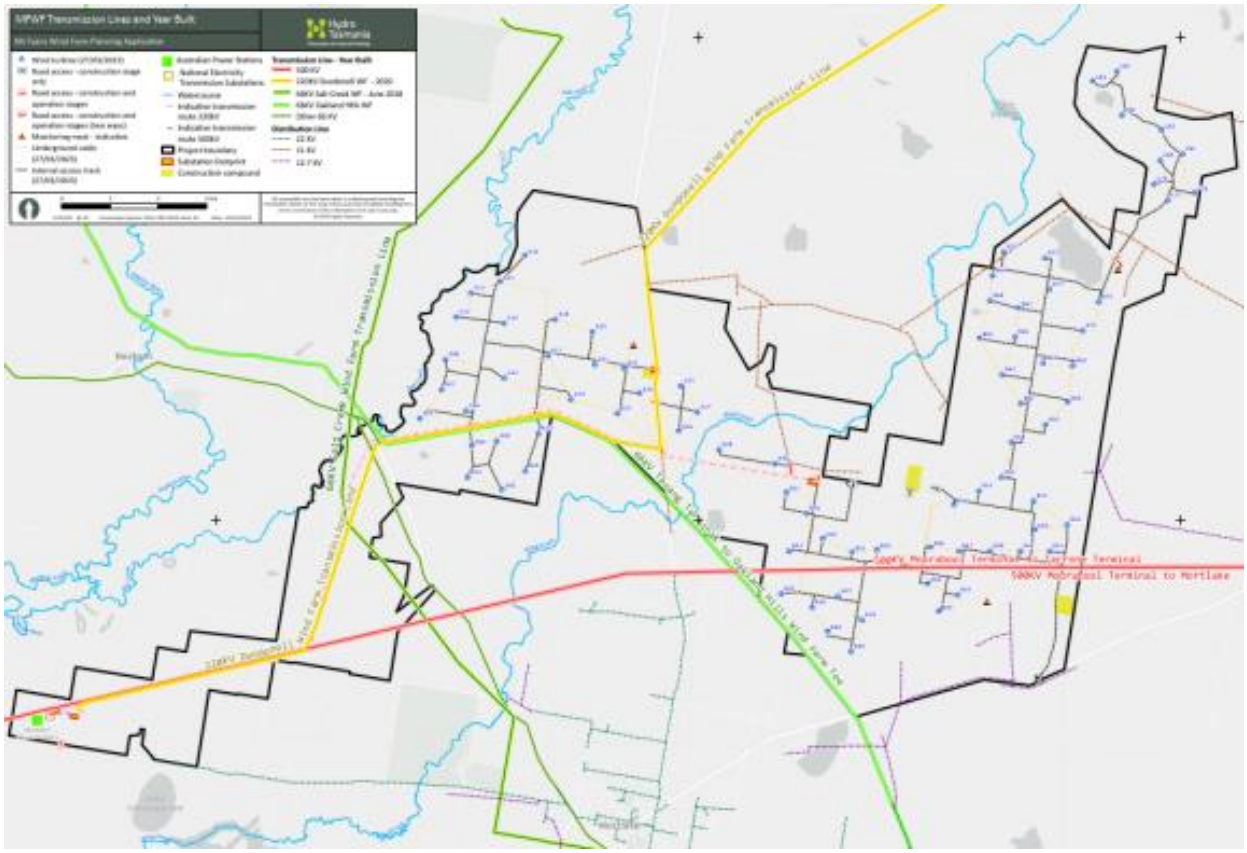
DTP commented that the proposed permit conditions were appropriate and consistent with other approvals to allow payment in lieu of landscaping options.

Shared use of infrastructure

Leanne Mifsud (co-presenting with the MCA) considered the Dundonnell transmission lines should be used. This was consistent with the Applicant's communication in community newsletters that it would share existing poles with another provider or work with the Dundonnell operator on an in-principle agreement to make use of its 15.5 kilometres of existing transmission lines.[56]

The Applicant provided a plan (Figure 10) showing existing transmission lines in the vicinity of the Project area at the request of the Panel.

Figure 10 Transmission Lines Map



Source: Document 150. Note: Lime green – 66kV Oaklands Hill Wind Farm, Dark green – 66kV Salt Creek, Yellow: 220kV Dundonnell, Pink dash – indicative proposed Mt Fyans, Red – 500kV Moorabool Terminal to Mortlake line

The Panel asked the Applicant to explain whether it was possible to use the existing Dundonnell 220kV line which had apparent capacity (spare tower arms). The Applicant advised it would seek to use the line's spare arms because this would save it some cost in constructing a new line. However, this outcome was beyond its control as the poles were privately owned and controlled

[56] Document 267

by AusNet Services. It would need to enter into a commercial arrangement with AusNet and had no certainty this could be achieved.

The Applicant submitted a shared use permit condition was not necessary as the proposed lines were visually acceptable, and:

- the Panel should consider the application before it
- the Panel should focus on acceptable rather than ideal outcomes (relying on the decision guidelines of Clause 65, and citing *The University of Melbourne v Minister for Planning* [2011] VCAT 469[57])
- such a requirement would not apply the correct tests (nexus, equity and fairness).

Council supported a condition requiring line sharing through a section 173 Agreement to minimise landscape impact and fire risk. It considered it made no sense for successive facilities to have their own transmission lines and this was not the approach being adopted for future off-shore facilities.

The Applicant responded:

- the proposed 220kV transmission line is in close proximity and along the same alignment as the existing Dundonnell 220kV transmission line to the Mortlake Terminal Station and partly collocated with the Oaklands Hill 66kV line
- colocation in the vicinity of the existing transmission lines (rather than sharing) provided a reduced visual impact as compared with an altogether new corridor, and that viewed on aesthetic grounds, the visual impact of the Project's proposed transmission line was acceptable.

(iii) Discussion

There is no doubt that the proposed Project will have a significant impact on the landscape given the number and size of turbines and extent of transmission lines, its spatial spread and the nature of its open rural landscape setting. The very nature of wind energy facilities is that they will have a visual impact on the landscape that cannot be avoided or completely mitigated as the observer moves through the landscape.

The key consideration for the Panel is whether this impact is unacceptable in the context of policy which seeks to facilitate wind energy projects, in an area identified as possessing an appropriate wind resource and having significant transmission infrastructure, and in the context of the treatment of the Project area's landscape in the Planning Scheme.

Planning context

The visual and landscape impact must be assessed having regard to the parts of the Project (and other projects) that are observable from particular vantage points in that view, the degree of dominance in particular views, and the capacity of the landscape to absorb change. This assessment must be considered within the framework of the zoning controls and policies under the Planning Scheme.

The Project land is not within a prohibited wind energy location or within an area identified within the Planning Scheme as a significant landscape consistent with Clause 12.05-2S. In the absence of an SLO within or adjoining the Project area, and where ESO1 does not include landscape or visual

[57] Document 293c

objectives, guidance on landscape impact is limited to the Farming Zone provisions, Clause 52.32 and the policy framework (particularly Clauses 19.01-2S, 21.06 and 21.09-4).

The Farming Zone does not include a purpose that pertains to the rural landscape. Its decision guidelines in relation to design and siting considerations focus on:

> The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance. [Panel's emphasis]

Clause 52.32 requires consideration of:

> The impact of the development on significant views, including visual corridors and sightlines. [Panel's emphasis]

Clauses 19.01-2S and 19.01-2R provides little guidance other than ensuring appropriate siting and design considerations are met (referring to the WEF Guidelines) and to manage cumulative impacts.

In relation to the provisions above there are no significant landscapes or views identified for protection or that direct a more sensitive approach to managing landscape impacts.

Within the local policy framework only Clause 21.09-4 provides any guidance in relation to landscape values in the Project area, with strategies including:

- The siting and design of new development should protect the key views to Mount Shadwell.
- Key views to Mount Shadwell and surrounding rural areas should be protected in the design and siting of future development.

The significance of Mount Shadwell is consistent with its identification in the South West Victoria Landscape Assessment Study, although this document has no status in the Planning Scheme and an SLO has not been applied. In terms of Clause 21.09-4 the Panel considers the policy focus is on views to Mount Shadwell from within Mortlake (the mapped extent in the Mortlake Framework Plan) and not views from other locations or from Mount Shadwell. There is, however, evidence to suggest that the Project will impact the ability to obtain rural views to Mount Shadwell from within Mortlake.

Assessment of impact

Submitters were critical of the LVIA and Mr Haack's assessment of:

- the landscape values of the rural landscape and the community's appreciation of it
- the reference to perception studies of the landscape impact of turbines
- the methodology used, including the level of engagement with the community and affected landowners, accuracy of photosimulations and the consideration of cumulative impact.

Guidance around landscape and visual assessments are included in Clause 52.32 and the WEF Guidelines. Clause 52.32 requires:

- a site and context analysis identifying the site landscape and notable features and views to and from the site including from dwellings and vantage points including major roads
- a design response which includes an assessment of visual landscape impact.

While the clause provides no further guidance on what is required in a visual assessment, the WEF Guidelines guide applicants to relevant overlays, policies or strategic studies to identify landscape values and consider identified landscape mitigation measures. It repeats the context analysis and design response content of Clause 52.32 but identifies additional factors to consider:

- the number, height and spacing and colour of turbines and any lighting
- avoidance of clutter through layout and ability to view through a cluster or array of turbines
- removal or planting of vegetation
- proximity to sensitive areas
- proximity to existing or proposed facilities having regard to cumulative effects
- landscape features including topography, vegetation, natural features and the skyline
- measures to reduce visual impact including through siting, use of turbines of consistent height and appearance and blade rotation direction, use of colour, limiting night lighting, minimising vegetation removal, avoiding additional clutter such as telecommunications.

The Panel accepts that further engagement with neighbouring landowners to assess existing landscape views and the role played by existing vegetation or potential planting to curtail outward residential views would have been beneficial. It understands for some properties access was sought but not provided.

The LVIA relied largely on aerial imagery analysis or views from the roadside. In the main the Panel considers that the LVIA and Mr Haack's analysis of it has included the information set out in Clause 52.32 and responded to several factors in the WEF Guidelines including landscaping and design measures to minimise landscape and visual impacts. The methodology included view point identification, establishing horizontal and vertical fields of view and use of photographic imagery, consistent with established practice.

The Panel considers the LVIA and Mr Haack's assessment of it to be sufficiently robust to enable consideration of the Project's landscape and visual impacts. The issue of cumulative impact is discussed below.

There was considerable cross-examination of Mr Haack in relation to the use or reliance on community perception studies and surveys. The Panel places little to no weight on them as they were not derived in relation to this application and the host community.

Landscape and visual impact

Wind energy facilities will have a high degree of impact on the landscape. This is acknowledged in the planning policy framework and planning provisions which support renewable energy subject to appropriate siting and design and minimising or reducing impacts to acceptable levels. Planning policy however does not seek to make them invisible to the majority of views.

Broader landscape impact

While the broader landscape setting is not strategically identified as significant this does not diminish the fact that it is highly valued by the rural community who live in it, view it regularly or work in it. In a rural setting the impact on landscape views extends beyond views from a dwelling or the transient views from a vehicle.

The Project's primary impacts on the wider landscape relate to the height and scale of the turbines and transmission poles, towers and lines. The impacts of the substations and access tracks are more localised and readily absorbed through topography and vegetation, or through site planting requirements.

The turbines and transmission poles and towers will be highly visible from a multitude of viewpoints across the surrounding landscape, in part because of the open and generally flat terrain which enables long views, and the spatial extent of the Project.

The landscape of the Project area and surrounds is not pristine. It comprises non-agricultural elements including more distant views to the Dundonnell and Salt Creek turbines and a multitude of transmission poles and lines. The level to which the Project dominates the landscape depends on the view point, distance to the turbines, the number and spacing of turbines, poles and transmission towers in the field of view and the screening effects of vegetation.

In the main the Project, while being highly visible at the broad landscape level, will not have an unacceptable impact on the landscape given the planning policy context. This is due to the larger spacing between turbines, running transmissions lines in parallel with existing transmission lines where possible and factoring in the role of existing vegetation. The use of lighter colour turbines and lack of lighting will assist their absorption into the landscape. The relocation of transmission lines to accommodate the existing six River Red Gums as discussed in Chapter 3.2 is considered a reasonable and balanced outcome which will not significantly alter the visual impact beyond that proposed.

It was disappointing to note that an agreement has not been secured to co-locate part of the 220kv transmission line on the Dundonnell infrastructure, which appears to have been designed to accommodate this capability. It is apparent that Council and the community had anticipated this outcome. While running the 220kV infrastructure in parallel helps to diminish some of the impact of additional infrastructure, the reduction of many kilometres of additional transmission pylons would markedly reduce visual impact on the landscape. While the Panel accepts that its job is not to find the best planning outcome and that there are limitations in requiring such an outcome as a condition of permit, this situation is very unfortunate. The Panel notes it is in the Applicant's best interests to pursue a shared usage outcome in terms of reducing costs. It is urged to work diligently to achieve this outcome.

Near neighbour impacts

While non-host neighbours are at least a kilometre from the closest turbine, distance alone will not diminish the visual prominence. Some neighbours like the Thomas Family will have views to the north from their dwelling and property towards a multitude of turbines within 2 kilometres over a 180-degree arc. While existing vegetation will reduce the impact from the residence itself, it is less effective from other parts of the property and provides little relief from views to turbines. The Panel observes however that the view is not a pristine one, with existing wind energy facility transmission lines likely visible in addition to more distant horizon views to other facilities. Other properties will have similar impacts on their rural views. Dwellings north of the Project's northern edge will have rural views impacted to the south but less so to the north.

The Planning Scheme does not provide protection or articulate what is significant about the rural landscape. In the context of a policy framework that supports renewable energy it is difficult to conclude that the visibility of multiple turbines or other infrastructure is an unacceptable impact. The WEF Guidelines point to a range of design and layout considerations to minimise visual impacts which in the main the Project has sought to apply.

Mortlake

The Project area extends in an arc across the rural landscape north of Mortlake. From within the Mortlake township the Panel is satisfied that the turbines and transmission infrastructure will not have an appreciable impact on the landscape character given the role played by dwellings, vegetation and Mount Shadwell in limiting extensive northern views. The rural living area to the north will have a greater uninterrupted view towards the Project although the predominantly 3 to 5 kilometre intervening distance and Mount Shadwell will lessen the impact, noting these views also include existing wind energy facility infrastructure.

Mount Shadwell

Mount Shadwell is identified at Clause 21.09-4 as having landscape significance and policy seeks to protect views to it. While the Panel considers that this relates to the protections of views from within Mortlake, cognisant of the South West Victoria Landscape Assessment Study, the Applicant has sought to design the Project to provide turbine free viewing corridors along Hamilton Highway. This is an appropriate response.

Views from roads

There will be a number of view points along the Mortlake – Ararat Road where the turbines and transmission lines are located close to the road and will be strong visual features within the road view corridor. Neither DTP nor the Head of Transport Victoria identified concerns about this impact from a traffic safety perspective. Given the relatively short sections of road involved, this impact is considered acceptable.

Views to the north of Hamilton Highway will include views to proposed turbine clusters (at least one kilometre distant to the closets turbine). The Panel does not consider this impact unacceptable as it is not a static view or a constant long term one for the passing motorist.

Views to turbines will be far more pronounced along local roads including Castle Carey Road, South and North Roads although these roads carry substantially fewer vehicles, and the impact is not considered unacceptable.

Cumulative impact

The need to consider cumulative landscape impacts is identified at Clause 19.01-2R (although it is not specific to landscape) and is referred to in the WEF Guidelines. There was some debate in submissions about whether this should include just existing and approved facilities or should also include proposed wind energy facilities (of which there a number in the vicinity). The Panel considers it impractical to anticipate the outcome (including turbine layout) of any proposed facility unless it has been approved.

Wind energy facilities in the area are proximate, but in the main, visually separated by distance, intervening landscape and topography. There are only four dwellings (other than host properties) within 4 kilometres of turbines from multiple facilities. Where turbines from other wind energy facilities can be seen, only a limited number of turbines are visible at any one location.

Council's cumulative impact mapping acknowledges the pressure the region is under from wind energy proposals which is a reflection of where the wind resource is and the location of key energy infrastructure. Such a cluster could be anticipated in this policy and infrastructure setting. The spatial spread of a project site, however, does not reflect where turbines are actually sited or their density. The Project is spatially larger than Dundonnell but has a similar number of turbines.

Those at Dundonnell are clustered at a higher density and closer together than proposed. No turbines are proposed in the Project area's western extent.

The Panel does not accept the subjective characterisation that the Project or its cumulative impact represents an industrialisation of the rural landscape. It does however acknowledge that such projects by their nature entail significant landscape impact and that their scale and number are occurring at a rapid rate which is escalating their prominence and the sense of a dramatically changing landscape. While many residents will have views to multiple wind energy facilities, and for some, views to other facilities will form part of the backdrop to this Project, their distance away, landform, and existing vegetation means they will not be unduly dominant in the landscape. This in part is due to expansive view lines and the slender forms and colouring of the turbines and poles.

The Panel is satisfied the Project will not result in an unacceptable cumulative impact on the landscape.

Landscape planting

While submissions were critical of off-site landscaping measures, they are recognised as one tool to assist in ameliorating visual impact on residential views over time. The Panel is satisfied that the model conditions for on and off-site landscaping are appropriate to address landscape and visual impacts of the Project subject to the minor changes proposed by the Applicant. As discussed in Chapter 3.2 landscaping plantings can enhance habitat values and assist in addressing the removal of publicly funded plantings.

4.3 Conclusions and recommendation

The Panel concludes:

- The LVIA provides an appropriate comprehensive analysis of the landscape and visual impact, including its cumulative impact with existing and approved wind energy facilities.
- The Project, because of its scale, will be a visually dominant element within the landscape and for some land owners the impacts will be significant. The visual impacts cannot be eliminated but can in part be ameliorated through off-site landscaping permit conditions.
- There will be cumulative impacts through the siting of the Project when viewed in conjunction with existing and approved wind energy facilities.
- There is, however, limited recognition of the landscape values of the area in the Moyne Planning Scheme. Assessed against this policy context, the landscape and visual impacts are acceptable.
- Overall, the landscape and visual impacts are considered acceptable.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **amend the on and off-site landscaping plan conditions to require consideration of species selection and planting treatments that enhance existing Ecological Vegetation Classes and habitat values where possible.**

5 Noise and amenity

5.1 Noise

(i) The issues

The issues are:

- applicable Standards and high amenity noise limit
- background noise data collection
- the suitability of the noise model and input assumptions
- transformer noise and construction noise
- the cumulative noise impact from multiple windfarms.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy: Clause 13.05-1S (Noise management)
- Particular provisions: Clause 52.32 (Wind Energy Facilities) which identifies a design response must include:[58]
  - a pre-construction (predictive) noise assessment report in accordance with the NZ Noise Standard includes whether a high amenity noise limit is applicable, and which includes assessment of compliance with the noise limit for the facility under Division 5 Part 5.3 of the EP Regulations
  - an environmental audit that verifies the wind energy facility will comply with the noise limit under Division 5 Part 5.3 of the EP Regulations
- Application materials:
  - *Background Noise Report*, Marshall Day, July 2018[59]
  - *Environmental Noise Assessment*, Marshall Day, August 2022[60]
  - *Noise Audit*, Envirorisk, November 2022[61]
  - EMP Framework, which includes construction and operational plans for noise management
- draft Permit conditions relating to noise, which replicate the model noise conditions
- EP Act and EP Regulations
- Guidelines and Standards:
  - WEF Guidelines (see below)
  - NZ Noise Standard
  - Environmental Reference Standards (ERS)
  - EPA Noise Guidelines
  - Noise Protocol
  - *Noise from Industry in Regional Victoria*, EPA 2011 (NIRV).

[58] Note: The requirement for a pre-construction noise assessment and audit were amended by Amendment VC234 following the Hearing to those that applied at the lodgement of the application. The provision of them can be waived or reduced by the responsible authority. Refer to Appendix D6

[59] Document 12

[60] Document 13

[61] Document 14

Background Noise Report

Marshall Day Acoustics completed a survey of background noise levels in 2018 at four locations (u17, u31, u47 and u51) in accordance with monitoring procedures in the NZ Noise Standard. The results indicated background noise levels were within the range expected in a rural setting. However, data at u51 was impacted by a range of domestic sources, including a generator, and considered not representative of other properties. Noise limits were defined at each wind speed in accordance with the NZ Noise Standard by an LA90 value of 40 dB or the background plus 5 dB, whichever is higher.

For reference purposes only the Background Noise Report also included the results of earlier noise monitoring in 2012 and 2013.

Environmental Noise Assessment

Operational noise associated with the proposed wind turbines was assessed in accordance with the NZ Noise Standard and modelled three representative candidate wind turbine models. It assessed the predicted noise levels of approved and operational wind farms in the surrounding area, including the Dundonnell, Mortlake South Wind Farm and Salt Creek. It also considered operational noise associated with the proposed substations.

Background noise data was considered suitable only for reference due to its age and changes in measurement practices over time. The Assessment recommended that new background noise monitoring be undertaken prior to the construction of the wind energy facility for use in future compliance assessments.

The Assessment concluded:

- there was no overlap of the predicted 30 dB_{LA90} areas of wind farms therefore cumulative noise considerations were not applicable to the Project
- a high amenity noise limit was not applicable on the basis of the affected land being in a Farming Zone
- the proposed wind turbines are predicted to achieve compliance with the NZ Noise Standard for all selected candidate wind turbine models
- adjustments were not applied for special audible characteristics and these would be considered for the selected turbine at later stages of the assessment process and again following construction
- the substations are expected to result in noise levels below the noise limits determined in accordance the Noise Protocol and to meet the General Environmental Duty (GED)
- the Project can be designed and developed to meet applicable policy for construction noise including through a CEMP
- noise levels are unlikely to pose a harm to the environment or human health, but should be reassessed once equipment selections are finalised.

Noise Audit

EnviroRisk conducted an independent assessment and verification of the Environmental Noise Assessment with key findings including:

- the Noise Assessment was conducted in accordance with the NZ Noise Standard
- predicted noise levels were compliant with specified noise limits for all non-stakeholder noise sensitive locations

- the high amenity limit does not apply to noise sensitive land uses in the Farming Zone and compliance with the 40 dB_{LA90} limit for wind farm sound levels at noise sensitive locations within this zone will ensure noise levels do not exceed 35 dB_{LA90} in the surrounding General Residential and Rural Living Zones (which are high amenity areas).

WEF Guidelines

The WEF Guidelines address noise in:

- section 4.3.2 Application requirements for a wind energy facility including a mandatory noise assessment
- section 5.1.2 Amenity of the surrounding area, which sets out guidance relating to noise
- model conditions for a noise assessment including for a pre-construction noise assessment).

The WEF Guidelines state:

> From 1 July 2021, the *Environment Protection Act 2017* introduced a general environmental duty and unreasonable noise provisions, which apply to all industries in Victoria, including wind energy facilities. The Environment Protection Authority (EPA) will be the primary regulator of wind turbine noise in Victoria.
>
> Amendment VC206 to the VPP and all planning schemes supported these changes by removing planning requirements for the regulation of operational wind turbine noise for a wind energy facility.
>
> Permits issued after 1 July 2021 will not have mandatory conditions in relation to operational wind turbine noise, as this will be covered under the Environment Protection Regulations (regulated by the EPA).
>
> Permit application requirements for wind energy facilities will remain, including the requirement to conduct a pre-construction (predictive) noise assessment to demonstrate that the facility can comply with the New Zealand Standard.
>
> The Standard specifies a general 40 decibel limit (40 $dB_{LA90(10min)}$) for wind energy facility sound levels outdoors at noise sensitive locations, or that the sound level should not exceed the background level by more than five decibels … whichever is the greater.
>
> A 45-decibel limit is recommended for stakeholder dwellings. A stakeholder dwelling is a dwelling located on the same land as the wind energy facility, or one that has an agreement with the wind energy facility to exceed the noise limit.

(iii) Evidence

Acoustic evidence was provided by Christophe Delaire (for the Applicant), Les Huson (for the Thomas Family) and Matthew Dever (for Mr L Cumming).

High amenity limit

Mr Delaire gave evidence:

- the EP regulations clearly specify the NZ Noise Standard as the standard for setting noise limits for wind farm noise
- a total of 149 noise sensitive locations (generally referred to as 'receivers') are located within 5 kilometres of the proposed wind turbines and the Project will be audible
- the NZ Noise Standard sets what is determined as a reasonable noise level to avoid sleep disturbance
- the NZ Noise Standard only requires consideration of a high amenity limit where a plan promotes a higher degree of protection of sound amenity for the particular area
- no such plan exists in the Planning Scheme for the Project area and surrounds

- the *Cherry Tree* wind farm VCAT decision[62] found that a Farming Zone is not a high amenity area, and this decision is referenced in the EPA Noise Guideline
- the EPA Noise Guideline also states that the high amenity limit does not apply to a Farming Zone
- noise limits are set by the NZ Noise Standard in accordance with the EP Regulations
- the ERS is not relevant for the high amenity limit as it does not contain prescriptive noise limits for the area
- the ERS also uses $_{LAeq(8hr)}$ and this is not comparable with the $_{LA90}$ (10min) measure specified in the NZ Noise Standard
- the nearest Category 5 natural area (as per the ERS) is Cobra Kiluc Wildlife Reserve (3.2 kilometres from the Project and 500 metres from Salt Creek) which has a predicted noise level below 30 dB from the Project.

Mr Dever agreed the NZ Noise Standard is the applicable standard for assessing wind farm noise but considered that the conclusion that a high amenity limit should not apply because the noise sensitive locations are in a Farming Zone is not in accordance with the Standard's objective method. Adopting a higher base noise limit was consistent with the area's extremely low background noise levels and sensitivity of residents to noise.

Mr Huson agreed the NZ Noise Standard is the required standard for assessing wind farm noise but considered that:

- while the WEF Guidelines reference the *Cherry Tree* decision, subsequent VCAT determinations (such as *Naroghid*) have provided an alternative opinion regarding noise in a Farming Zone
- the ERS should be given greater weight than guideline documents
- determining the Farming Zone is a zone warranting high acoustic amenity is compatible with the objectives of the ERS.

Mr Huson's evidence was:

- the Environmental Noise Assessment predicts increases in noise of over 20 dB
- residents in the area have historically enjoyed very low background noise levels, below 30 dB_{LA90} even in high wind conditions
- a high amenity limit of 35 dB_{LA90} will not ensure protection of amenity, noting the ERS objective of 30 dB_{LAeq}, but it is preferable to a 40 dB_{LA90} limit
- a high amenity limit should apply to lessen the loss of amenity.

Prediction model and model inputs

Mr Delaire's evidence was that:

- modelling had been done using the ISO 9613-2 standard model, which is the only model specifically listed in the NZ Noise Standard and is a reliable model
- hub heights are not determinative, however the pre-construction noise assessment will be updated with the actual hub heights
- the turbine models in the Assessment are indicative of power ranges and the actual turbine selected at construction stage may be different
- the final design however will need to comply with the noise limits in the NZ Noise Standard.

[62] Cherry Tree Farm Pty Ltd v Mitchell SC (Red Dot) [2013] VCAT 1939

In relation to special audibility characteristics, Mr Delaire's evidence was:

- the NZ Noise Standard requires that all turbines be designed to not have special audibility characteristics
- applying an uncertainty penalty when modelling is in accordance with the Standard
- transformers typically have tonality but turbines should not, unless due to a manufacturing error
- tonality can only be tested for in operation and there is a positive obligation in the EP Regulations to do something about it if it occurs
- amplitude modulation and impulsiveness are unable to be predicted, however the evidence of operational wind farms in Australia indicates that their occurrence is limited and atypical.

Mr Delaire's evidence was that the modelling was conservative. Uncertainty has been accounted for by the adoption of conservative modelling inputs:

- a ground factor of G = 0.5 is selected in lieu of G = 1, in strict accordance with ISO 9613-2 for farming land
- all turbines simultaneously emitting sound power levels higher than the manufacturer's specification values
- each receiver being simultaneously downwind from every turbine

The model also assumed that all turbines where operating in a downwind condition.

Mr Huson's evidence was:

- the noise assessment predicted noise levels from the Project will meet the 40 dB limit by between 1.4 dB and 3.3 dB
- this confidence level is insufficient given:
  - with accurate input parameters the model accuracy is +/- 3 dB
  - a change in the ground model factor could add 4 dB
  - if the sound power level was incorrect by 3 dB (low) then the predictions will be too low (by 3 dB)
  - turbulence from surrounding turbines could add 2 to 3 dB
  - as a precaution, a penalty of 4 dB be added to allow for any special audible characteristics
- compliance testing at Salt Creek had demonstrated the requirement for tonal penalties
- a permit condition should define a noise model to use, set a high amenity noise level and reduce the ambiguity of the standard
- any turbine chosen should be independently tested to ensure that there are no tonal noise emissions.

Mr Dever's evidence was:

- he had experienced special audible characteristics of other wind farms while staying overnight at nearby dwellings
- sources of model uncertainty include:
  - sound power levels (+2 dB)
  - noise criteria (+5 dB)
  - noise model (+4 dB)
  - façade noise reduction (+5 dB)
  - special audible characteristics (+6 dB)
  - cumulative impacts (+3 dB)

- a ground factor of 0 should be used given very high hub heights and relatively short source to receiver distances, increasing the noise estimate by 3 to 4 dB
- turbine sound outputs can be 4 to 5 dB higher in up and down wind conditions
- if the sound power is based on the average of all directions the predictions could be underestimated by 2 to 3 dB.

Use of alternative monitoring points

Mr Delaire considered:

- alternative monitoring points to monitor compliance should be determined on a site-by-site basis where necessary based on the noise management plan
- this is controlled by the EP Regulations and the NZ Noise Standard
- alternative monitoring points were not allowed in a post-construction noise assessment.

Transformer noise and construction noise

It was Mr Delaire's evidence that:

- transformer equipment should be specified and selected to achieve noise emissions not exceeding the empirical values specified in AS 60076-10:2009
- a CEMP can suitably control noise impacts during construction.

Cumulative noise

Mr Delaire's evidence was:

- the cumulative impact of approved wind farms will not exceed the noise limits
- the modelling shows that the 30 dB contours from nearby wind farms do not intersect with the Project's 30 dB contour. These contours would need to overlap to exceed the 40 dB limit
- cumulative impact can only be predicted using modelled rather than real data.

Mr Huson considered the cumulative assessment inaccurate and overly optimistic as:

- it used the modelled turbine for Mortlake South and not the actual adopted turbine which has a high sound power level
- Dundonnell was modelled using a low noise mode sound power level in contravention of the NZ Noise Standard which requires use of an unconstrained sound power level that is higher
- it used the modelled noise assessment for Salt Creek rather than the actual data that has a tonal penalty of 5 db.

(iv) Submissions

The EPA did not participate in the Hearing, advising that it was not a statutory referral authority in relation to this application. It submitted that:

- impacts on sensitive receptors due to noise is the biggest risk presented by wind farms
- it undertook a high-level review of the Environmental Noise Assessment and found that noise generated by the Project will meet appropriate noise limits at all times
- its expectations were clear in relation to noise and in the EPA Noise Guidelines and GED.

In correspondence to Ms Lenehan, the EPA advised:

- the EP Act and the PE Act are separate statutory instruments, and both can apply in parallel

- the ERS is a reference tool and it does not set compliance limits
- the EP Regulations do not allow the use of alternative monitoring points when collecting data for a post-construction noise assessment.[63]

The Applicant submitted:

- the EPA is now the regulator in relation to noise, unlike for the Bald Hills wind farm case
- the EP Regulations require the use of the NZ Noise Standard for the assessment of noise and setting of noise limits, and any concerns regarding its applicability is a matter for the government
- there are no noise agreements in place with any landowner
- the noise assessments have been undertaken in accordance with the standard and verified by an independent auditor
- information on tonality is not known at this stage and a test for tonality can only be undertaken during operation
- the EP regulations contain a positive obligation to address tonality if it is detected
- the noise limits are not designed for inaudibility
- some residents will notice a change in the noise environment and this is not unreasonable, with the Standard setting what is a reasonable noise limit

In relation to whether the area should be considered a high amenity area (and a lower noise limit applied), the Applicant submitted:

- both the WEF Guidelines and the EPA Noise Guidelines reference the *Cherry Tree* decision in relation to the application of a high amenity limit, which found that it was not applicable in the Farming Zone
- the EPA Noise Guidelines expressly state that the high amenity limit is not applicable in the Farming Zone
- modelling indicates that the LA90 will be below the high amenity limit for non-host receivers, making the high amenity limit debate academic
- there is no technical or policy reason why validly measured background noise levels collected after a permit is issued cannot be used.

Council submitted:

- noise impacts remain unresolved:

  > the Applicant has failed to demonstrate that the Project will minimise and manage adverse effects on noise and vibration amenity to surrounding areas, having regard to applicable limits, targets or standards.

- the background noise assessment relies on data from 2012, 2013 and 2017 and was undertaken at only four dwellings
- such a narrow assessment does not represent the scale of the Project and proximity to numerous dwellings
- the 2017 Stock Yard Hill Wind Farm Panel concluded "*establishing the background noise levels is critical*", and a similar finding was made by the Woolsthorpe Wind Farm Panel in 2008
- leaving background testing to just prior to construction is at odds with the Tribunal's finding in *Naroghid* that:

[63] Document 282

> We consider the recommendation for further pre-construction noise monitoring as a point to overcome this deficiency to be not in keeping with an orderly planning outcome. We consider that to provide the necessary level of certainty required for planning permission, a more definitive assessment of background noise is warranted. [Council's emphasis]

Council further submitted that cumulative noise impacts resulting from the Project due to the surrounding wind farms may be underestimated. It questioned where the NZ Noise Standard anticipated the impost of dwellings affected by multiple wind farms from multiple directions. The consequence of the clustering of wind farms is that some residences will be surrounded by turbines and may not get any reprieve from changes in wind direction.

MCA and the Thomas Family made extensive submissions in relation to noise. They submitted:

> For the very quiet, rural setting in and around the township of Mortlake where the ambient noise levels at night inside homes are typically very low in the absence of any household activity .. the concept of a 40 dB LA90 base noise limit is an inappropriate threshold for residents of Mortlake, and the 149 noise sensitive "receivers" who live near the Wind Farm.

They further submitted:

- an increase in noise from 20 dB to 30 dB was a doubling of the noise perceived by residents
- in the *Uren* case[64] the Supreme Court accepted that sleep disturbance was being created up to 3.67 kilometres from the nearest turbine despite being technically compliant
- residents surrounded by wind farms would have no respite particularly during the predominant summer and winter wind patterns
- resident who work on the land would have no respite at night or during the day from the noise
- lack of sleep and fatigue due to noise nuisance can impact on productivity and safety
- other Australian states had adopted lower limits than the NZ Noise Standard base limit.

In relation to whether a high amenity limit should be applied, the MCA and the Thomas Family submitted:

- the NZ Noise Standard does not have a 'fixed rule' on when a high amenity limit must be applied rather it uses the terms '*special circumstances*' and '*may be justified*'
- the EPA's view is that a high amenity limit is justified in a residential zone
- the ERS has a quieter ambient noise objective in the Farming Zone including for the protection of sleep
- the NIRV groups land in the Farming Zone within the same 'receiving zone' as most residential zones
- a high amenity noise assessment was not done for all properties within the 35 dB contour to determine if a high amenity limit might be justified, in accordance with the procedure set out in the NZ Noise Standard and Clause 52.34 of the Planning Scheme.

MCA and the Thomas Family submitted the background noise levels were questionable and providing minimal or no background data was an attempt to 'game' the planning system. They submitted:

- a lot of background data points at low noise levels for the four receiver locations surveyed in 2017 had been deleted, which may artificially inflate the background noise levels

[64] *Uren v Bald Hills Wind Farm Pty Ltd* [2022] VSC 145 (Document 154)

- local weather during part of the data collection period was not monitored to assist with filtering
- after the permit is issued, proxy paddock loggers (alternative monitoring points) may be used to 'update' and upwardly revise the background noise levels, resulting in the noise limit being raised beyond what has been assessed by the Panel.

In relation to compliance with the noise limits, they submitted:

- noise levels are predicted to be on the fringe of the 40 dB limit, and the margin of compliance at 1.2 to 3.3 dB is "*miniscule*"
- there is a real risk of the turbines having special audible characteristics
- an alternative turbine to those assumed in the noise modelling could be selected, resulting in different sound characteristics and potential for higher sound power levels.

MCA and the Thomas Family urged the Panel to take a precautionary approach and find that the Project is located in a high amenity area, deserving more noise protection than other places. They submitted the Panel should not support the issue of a permit based on the current turbine layout. If a permit was to issue, they asked the Panel to indicate that a satisfactory layout might be one which ensured (conditioned) that:

- the addition of noise at residences is less than 29dB (being 35dB less a 6dB penalty for special audible characteristics, which it should be assumed will occur)
- for dwellings located between the Project area and Mortlake South, additional noise from the Project would not take total night-time sound levels beyond 35dB (in combination with background noise including noise from other wind farms).

Further, the permit should specify the operator to perform on/off testing at the request of a complainant, or the responsible authority. Conditions were also proposed to include a post construction noise assessment and that the pre-construction assessment include a cumulative impact assessment.

MCA and the Thomas Family submitted that if the permit specifies a limit on added noise (rather than following the NZ Noise Standard in setting a combined limit on background plus wind farm noise) then residents will be protected from even short intermittent bursts of excessive noise, and no further protection would be needed. Conversely, if the permit were to set limits on average noise emissions (or average background plus wind farm levels), there would be a need to protect against intermittent noise nuisance, such as by prohibiting excess noise for more than 10 per cent of an individual night.

Ms Lenehan submitted:

- Clause 35.07-6 acknowledges that there may be an impact on the human health of people limiting within one kilometre of a wind farm due to noise and shadow flicker
- the NZ Noise Standard was written for a different context in terms of separation, turbine heights and size – by contrast turbines are now larger and higher and closer to homes presenting a more dominant, annoying, unnatural and rhythmical noise with special audible characteristics
- farming is a high-risk activity and sleep disturbance is a major risk factor
- the Noise Assessment had not calculated the average differences between background and predicted noise in compliance with the NZ Noise Standard method of determining whether a high amenity level may be justified

- certain atmospheric, meteorological and house designs can impact wind farm noise at a sensitive receiver
- alternative monitoring points (paddock loggers) can underestimate wind speeds due to wind shear impacts.

Mr L Cumming submitted:

- in summer and autumn, the ground is very hard and compact with vegetation dying off
- a ground factor of zero would best represent this condition and provide for a conservative assessment
- non-host residents will bear the ongoing noise and risk of disturbance from the development and that was not just.

A submitter near the Macarthur windfarm submitted:

> I live five kilometres from a windfarm and the noise on a cool low wind night can be very loud, like the continual sound of a truck arriving. It is intermittent when the wind is in the right direction and you never get used to it.

(v) Discussion

Clause 52.32-4 of the Planning Scheme requires a pre-construction (predictive) noise assessment report to be submitted as a part of the application that demonstrates that the proposal can comply with the NZ Noise Standard and includes an assessment of whether a high amenity noise limit is applicable, as assessed under Section 5.3 of the NZ Standard.

In determining the application consideration must be given to:

- the effect of the Project in terms of noise
- the WEF Guidelines
- the NZ Noise Standard.

The EP Act requires that an operational wind energy facility comply with the EP Regulations which reference compliance with the NZ Noise Standard. The EPA is the compliance authority for an operating wind energy facility.

Between the time of lodging a planning permit application and submitting final plans for endorsement under a permit, detailed investigations and design are undertaken. These can result in changes to the plans or respond to other permit conditions effecting siting.

A noise assessment is considered during the assessment of the planning application. A further pre-construction noise assessment is required, based on the model permit guidelines, following the issue of a permit to provide further assurance that changes post application do not compromise the ability to comply with the NZ Noise Standard.

This final assessment provides reasonable assurance when the facility passes from the control of the PE Act to the control of the EPA Act that compliance should be achievable. A post-construction audit is then required to demonstrate that the wind energy facility, once operating, is complying with the noise limits.

The WEF Guidelines are a reference document in the Planning Scheme. The EPA Noise Guidelines are not a reference document in the Planning Scheme and therefore have less weight at the planning stage.

While local residents may be concerned that the noise limits in the NZ Noise Standard are too high, they are given effect through legislation and regulation, referred to in the WEF Guidelines and in

Clause 52.32 of the Planning Scheme. The Panel must assess the application against the requirements of the Planning Scheme as they stand.

What is relevant is whether the Standard has been appropriately applied and the overall impact of noise on the surrounding area. This includes:

- whether a high amenity limit is justified
- whether the noise model is reasonable, including its assumptions.

High amenity limit

The NZ Noise Standard states:

> In special circumstances at some noise sensitive locations a more stringent noise limit may be justified to afford a greater degree of protection of amenity during evening and night-time. A high amenity noise limit should be considered where a plan promotes a higher degree of protection of amenity related to the sound environment of a particular area.

Noise sensitive location has a broad definition:

> The location of a noise sensitive activity, associated with a habitable space or education space in a building not on the wind farm site.

The definition does not exclude habitable spaces on land zoned for rural use.

The NZ Noise Standard provides empirical guidance on where a high amenity limit may be justified, noting firstly it is not relevant to properties outside the 35 dB limit (some properties may sit within this contour) and only applies at wind speeds at or below 6 m/s.

The guidance methodology determines the difference in predicted wind energy facility sound levels to background level based in 10-minute intervals, and calculates an average difference for the evening or night-time periods. An average difference of 8 dB indicates that a high amenity limit may be justified. Mr Delaire provide additional material following his evidence in chief to show that the average difference between the Project noise levels and background noise levels is less than 8 dB, suggesting a high amenity limit is not justified.[65]

The Applicant submitted the debate about whether a high amenity limit should apply is academic, as the modelling shows the noise will be below the high amenity limit (35 dB) in any event.

The modelling has been done with three different turbines each having a different maximum sound power level, with the higher level resulting in a higher noise impact. However, a different (as yet unknown) turbine could be used, so long as compliance with the NZ Noise Standard is maintained. A different turbine may result in a noise level above the high amenity limit, while staying below the standard limit.

The Background Noise Report advises that in wind speeds up to 6 m/s (at 125 metre hub height), background noise levels at the three representative monitoring locations were in the order of 24.4 to 28.9 $dB_{LA90.}$ Without a high amenity limit this could increase to 40 dB, a change of 11 to 15.6dB.

The Panel notes that the EPA Noise Guidelines clearly state that a High Amenity Limit should not apply to a Farming Zone. These guidelines represent the position of the EPA (and its auditors) and was used by Mr Delaire and the noise report auditor to find that a high amenity limit should not apply.

Such a clear statement is not provided in the WEF Guidelines, which (unlike the EPA Noise Guideline) is a reference document in Clause 52.32 of the Planning Scheme. That said, the WEF

[65] Document 173.

Guidelines, like the EPA Noise Guidelines, reference the *Cherry Tree* decision which found that a high amenity limit should not apply in a Farming Zone.

The *Cherry Tree* decision appears to be limited to an assumption that the NZ Noise Standard limits the application of the high amenity limit to an area where a plan promotes *"a higher degree of protection of amenity related to the sound environment of a particular area"* and that farming use "*is not an inherently quiet land use*". The Tribunal in that case ultimately found that the debate was a sterile one in any event as the modelling showed that compliance with a high amenity limit would be achieved. The Applicant has argued the same circumstances apply in this case.

The *Cherry Tree* decision predates the current EP Act and Regulations and the ERS, which came into operation on 1 July 2021. It also predates the *Naroghid* decision which stated:

> While the NIRV and SEPP N-1[66] do not set noise limits for wind farms, in our view they provide an objective guide to the noise amenity expectation under a scheme for a particular area. In our view, it is these policies that set the acoustic amenity expectations for an area within a planning scheme and therefore 'a plan' under NZS 6808:2010.

The Tribunal in that case went on to state that, while its decision was not to grant a permit and it did not need to make a decision on whether a high amenity limit should apply:

> We consider it appropriate, however, to make these comments in the context of the issues raised by the EES Panel that considered the Golden Plains wind farm and, in the event that they are helpful to responsible authorities in considering the obita in Cherry Tree, as suggested in the Guidelines when considering the question of 'high amenity areas' when applying section 5.3 of the NZS 6808:2010 to the Victorian planning context.

The NIRV and SEPP have now been superseded by the new EP regime with guidance on noise objectives now contained in the ERS.

The ERS lists the Farming Zone in Category IV for ambient sound environment. This category is the second lowest of five categories in relation to ambient sound (with Category V relating to natural areas that provide a tranquil environment). The ERS advises the ambient night time noise objective in a rural area is 35 dB $LA_{eq,8h}$, while in a neighbourhood residential zone the objective is higher at 40 dB.[67] This is at odds to the *Cherry Tree* decision that farming land is inherently noisy. The ERS is consistent with the NIRV which states that rural areas are relatively quiet (except for intensive farming operations).

The ERS describes the environmental value to be protected as "*an ambient sound environment that supports sleep at night*" and the land use categories are defined by reference to the planning zones they comprise. The Panel considers that the ERS could potentially represent 'a plan' for the purposes of NZ Noise Standard although this would represent a departure from the current approach adopted by recent Panels and VCAT.

The Panel acknowledges Mr Delaire's advice that based on the modelled turbines, the average 10-minute noise difference between Project noise and background levels is less than 8 dB. However, it was not persuaded that this is sufficient to conclude a high amenity limit is not justified, given that a different turbine may be selected following the issuing of a planning permit, which could change the result.

The Project comprises a large windfarm spread across a wide area. There are also a number of wind energy facilities to the north/northeast, northwest and south that contribute noise. The

[66] State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No N-1

[67] Wind farm noise is reported as LA90 noise. The NZ Noise Standard notes that a predicted LAeq is taken as the LA90 level

spread of turbines increases the potential for properties to be downwind of turbines and experience noise. Some residents also work and sleep on the properties, reducing opportunities for respite and increasing their exposure to potential noise and other impacts including turbines and transmission lines across multiple view lines. However, the Planning Scheme does not set an expectation of a higher level of protection against noise or Clause 52.32 reference the ERS.

The evidence has shown that the high amenity limit can be complied with and therefore there should be no adverse impact on the Project by ensuring the high amenity limit is achieved. However, this is not what the Planning Scheme requires of the Project and what it establishes would be an acceptable outcome in planning terms. While the application of the High Amenity Level would provide assurance to the closest residents that the risk of harm to human health is being minimised so far as reasonably practicable as required under the GED, this is effectively what the NZ Noise Standard is intended to do. The Panel considers that on balance while the High Amenity Noise limits are not required to apply, given the Applicant's indication they can be equivalent levels should be strived for as far as practical.

Background Noise Report

As noted by Mr Deaver, the existing background noise assessment is limited, dated, and the data was collected on less accurate instruments than those currently available.

The Panel considers new background noise data should be collected at more locations prior to the commencement of construction, for reference in the post construction compliance assessments.

Cumulative noise

The evidence has shown that there should not be a cumulative effect from nearby wind energy facilities, subject to the accuracy of the modelling assumptions. However, there is a risk that existing wind energy facilities may raise the background noise and therefore raise the noise limit if the background noise is over 35 dB_{LA90}.

It would not be reasonable for there to be a continual upward shift in the background noise from other wind energy facilities that results in a raised compliance limit for new entrants and care will need to be taken to ensure that this is discounted.

The limits, particular at night, have been set to minimise disturbance and health impacts, particularly due to sleep disturbance.

Prediction model and model inputs

The prediction model used in the Environmental Noise Assessment is the only model that is directly referenced in the NZ Noise Standard for such purpose. While there may be other models, the Panel has not been presented with evidence that the model used is not fit for purpose.

In reference to the model inputs, there is a risk (and will always be a risk) the assumptions are incorrect. The risk is one that the developer must bear, as the EP Regulations demand compliance with the noise limits.

The objectors have raised concerns that the assessment has only demonstrated a 1 to 3 dB compliance tolerance. This assumes no special audible characteristics and no tonality. It will be a matter for the Applicant to choose turbines that match these assumptions, and with a sound power level that does not result in an exceedance.

The Panel notes that the EPA is now the regulatory authority for compliance in operation. The EPA (and draft Permit conditions) require a post construction assessment and regular continuing assessments, with each assessment audited. A complaints process is also required as discussed in Chapter 7.5.

Should compliance not be achieved, the Applicant has a number of options including curtailment of turbine operation by windspeed limit and power level. If the pre-construction assessment demonstrates that the Project may not achieve compliance with the noise limits, the Applicant may also need to remove or relocate turbines further from noise sensitive locations.

Use of alternative monitoring points

The use of alternative monitoring points to measure compliance is a tool to overcome specific location constraints with data collection. It is a matter for the EPA to control in accordance with its regulations and the Panel makes no further comments on their use.

It will be in the residents' best interests to allow access to their properties for noise monitoring to help avoid the need for alternative monitoring points. This will not guarantee that an alternative monitoring point will not be the best location for monitoring but will enable a proper and open assessment of location selection, which must be reported and accepted by the environmental auditor.

Transformer noise and construction noise

This was not a significant issue for any party. The Panel is satisfied noise from the substation and transformer will not cause a significant impact and noise can be managed by the proposed Permit conditions or other regulation.

(vi) Conclusions and recommendation

The Panel concludes:

- The development is capable of complying with the construction and operational noise limits set by the Planning Scheme and the EP Regulations.
- Based on the evidence that a High Amenity limit can be achieved by the Project, the Applicant (or Project operator) should aim to achieve compliance with the equivalent noise limit for all non-host properties where practicable.
- The prediction model and assumptions used are reasonable for the purposes of determining a planning permit, noting that the risk of post-construction non-compliance lies with the Applicant.
- New background noise measurements should be collected prior to the commencement of construction for use in the post-construction noise assessment and filtered to remove any noise impacts from nearby wind energy facilities.
- The use of alternative monitoring points is controlled by the EP regulations.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Amend the pre-construction (predictive) noise assessment report to demonstrate how the proposal can achieve an equivalent noise limit consistent with the high**

amenity noise limit where practicable to the satisfaction of the responsible authority.

5.2 Shadow flicker and blade glint

(i) Background

Relevant information includes (refer to Appendix D for more detail):

- Particular provisions − Clause 52.32-5 (Wind Energy Facility) including a decision guideline to consider the effect of the proposal on the surrounding area from blade glint and shadow flicker
- Application material − *Shadow Flicker Report*, Enyura, August 202268
- draft Permit conditions for shadow flicker (based on model condition) and development plans to identify colours, materials and finishes and use of non-reflective materials
- WEF Guidelines.

The WEF Guidelines address shadow flicker and blade glint in section 5.1.2 Amenity of the surrounding area. The model permit conditions include a condition on shadow flicker.

The Guidelines state:

- The shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year as a result of the operation of the wind energy facility.
- Blades should be finished with a surface treatment of low reflectivity to ensure that glint is minimised.

The Shadow Flicker Report considered the wind turbine layout on 316 dwelling receptors. It identified 13 receptors of shadow flicker with durations spanning 12 to 30 hours per year and four receptors between 30 and 58 hours (all involved landowners with agreements in place). It noted:

> … the annual shadow flicker duration experienced at receptors is usually significantly less than the modelled maximum due to factors including cloudy skies, rotor direction that is not perpendicular to the sun, stationary wind turbine rotors, and vegetation screening.
>
> At the proposed Mt Fyans wind farm, for locations without landowner agreements in place, the modelled shadow flicker duration results show:
>
> - No receptors with greater than 30 hours of modelled shadow flicker
> - Four (4) receptors (which includes a 50 m buffer) experienced greater than zero (0) but less than 30 hours of modelled shadow flicker
> - Thus, Mt Fyans wind farm is compliant with a 30-hour limit, considering the modelled maximum results. Actual shadow flicker experienced is likely to be significantly lower.

In relation to blade glint it identified that:

> …all major wind turbine blade manufacturers currently finish their blades with a low reflectivity treatment. This prevents a potentially annoying reflective glint from the surface of the blades and the possibility of a strobing reflection when the turbine blades are spinning. Therefore the risk of blade glint from a new development is considered to be very low.
>
> Hydro Tasmania ensures that blades supplied are coated with a low reflectivity treatment, and so no issue is foreseen.

It concluded:

> Blade glint is not expected to cause any issue, provided that the wind turbine to be selected ensures that blades supplied are coated with a low reflectivity treatment.

[68] Document 17

(ii) The issue

The issue is whether shadow flicker and blade glint impacts are acceptable and meet the standards of the WEF Guidelines.

(iii) Submissions

Submissions raised concerns that shadow flicker from rotating turbine blades and glint from the sun reflecting on blades would impact health and wellbeing for extended periods of exposure.

Mr Williamson considered year-round shadow flicker would impact the liveability and enjoyment of his home and that a higher level of amenity should be expected in the Rural Living Zone. He submitted shadow flicker would also impact on domestic animals, livestock and native fauna.

The Thomas Family submitted that the nine months of shadow flicker they would be exposed to would be detrimental to their health and wellbeing.

Mr Allen already experienced shadow flicker in parts of the house as did his son's residence.

Council proposed two additional shadow flicker conditions:

> Before development starts, a pre-construction assessment of the potential effects of shadow flicker from turbines at any dwellings is to be undertaken for the final turbine layout in accordance with the DELWP (2021) Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria. The assessment must be submitted to, approved and endorsed by the Minister for Planning.

and:

> A shadow flicker audit must be carried out 12 months after the commencement of the use (or, if relevant, 12 months after commencement of the final stage of the use) to confirm compliance with condition 12), to the satisfaction of the responsible authority. This report must be submitted within 18 months of the use (or final stage of the use) commencing and any non-compliance actioned within 24 months of the use (or final stage of the use) commencing.

The Applicant relied on the findings of the Shadow Flicker Report and submitted:

- the Project is compliant with the 30-hour limit specified in the WEF Guidelines
- the wind turbines chosen for Project will be coated with a low reflectivity treatment to reduce the potential for blade glint
- there was no credible basis to find that wind farms that are compliant with relevant standards have an unacceptable impact on health
- the draft permit condition was appropriate to address shadow flicker and glint impacts.

The Applicant did not oppose Council's additional pre-construction shadow flicker condition subject to changes to refer to existing dwellings as of the date the application was made. It did not support the suggested a post-commencement audit.

(iv) Discussion

There can be short term and regular shadows over the ground and over residences caused by the movement of the blades between the sun and the ground or residences. This effect can have amenity and potential health impacts over extended periods. The WEF Guidelines provide a standard approach to considering the impacts of shadow flicker, setting a 30-hour annual limit for dwelling receptors.

The Panel considers that this issue has been appropriately examined in the Shadow Flicker Report which observes that the impacts are likely to be significantly less than the modelled report because of environmental factors. The Panel is satisfied that the Shadow Flicker Report demonstrates that the Project will not exceed the 30 hours per year standard for any of the non-host dwelling receptors that do not have agreements in place. There was no evidence or conclusive submissions provided that supported the position that this level of exposure would be exceeded or that it would impact on the health of humans, domestic animals, livestock or native fauna.

Sun glint from the turbines and blades has the potential to cause distraction, particularly near higher speed roads. The WEF Guidelines provide an approach to assessing these impacts which is predominantly achieved by applying low reflectivity blade treatments as proposed in this instance.

The draft permit conditions appropriately include:

- an amended plans condition which requires details of the colours and finishes of buildings (which includes structures and extends beyond just the blades) and which must be non-reflective
- the WEF Guidelines standard shadow flicker condition.

The Panel supports the inclusion of pre-construction shadow flicker condition (as amended by the Applicant). It is considered appropriate to reflect the as-built dwellings at the time the application was lodged rather than a different date as proposed by Council.

It is unclear why Council has suggested the assessment be specifically approved by the Minister for Planning although the change was accepted by the Applicant. Consistent with other conditions it should instead refer to the responsible authority.

A post construction shadow flicker assessment as proposed by Council is considered unnecessary given the proposed condition that does not permit shadow flicker to extend beyond 30 hours for any pre-existing dwelling.

Potential impacts can also be mitigated through additional off-site landscaping as proposed in the draft 'Landscaping' condition as discussed in Chapter 4.

(v) Conclusions

The Panel concludes:

- The Project will meet the standards in the WEF Guidelines for shadow flicker and blade glint.
- Potential shadow flicker and blade glint impacts can be acceptably mitigated through the WEF Guidelines model permit conditions.
- A requirement for a pre-construction shadow flicker assessment is appropriate and should be included on any permit issued.

5.3 Electromagnetic interference

(i) The issues

The issues are:

- disruption to telecommunications including television, internet and mobile phone reception from electromagnetic interference (EMI)
- appropriate mitigation measures.

(ii) Background

Relevant information includes:

- Application materials – *Electromagnetic Interference Report*, DNV GL, August 2022[69]
- draft Permit conditions based on model conditions in the WEF Guidelines
- WEF Guidelines.

The WEF Guidelines deal with EMI in section 5.1.2 Amenity of the surrounding area and identify two example permit conditions for EMI. The Guidelines identify:

> The effects of wind turbines on electromagnetic waves will usually be relatively limited. Potential electromagnetic interference effects can be calculated from information about affected telecommunications transmitting or receiving stations, local conditions, turbine design and location.
>
> The potential for electromagnetic interference from the generation of electricity from a wind energy facility should be minimised, if not eliminated, through appropriate turbine design and siting.
>
> The siting of wind turbines in the 'line of site' between transmitters and receivers should be avoided.

The Electromagnetic Interference Report found that the Project has the potential to interfere with NBN fixed wireless internet service at up to six connected residences, 22 digital television broadcast signals and one fixed point to multi-point link (operated by Wannon Water). Potential impacts to other services, including emergency services, radio, mobile phone, satellite television and internet were considered either unlikely, or able to be mitigated through consultation with service operators. The report outlines technical measures available to restore service if impacts occur including antennae upgrades or provision of alternative connection types.

(iii) Submissions

Several submissions raised concerns about the impact of the Project on the receipt of free-to-air television signals and mobile phones from EMI and the practicality of any management measures to address emerging impacts post operation.

The Applicant relied on the Electromagnetic Interference Report which it submitted contained a comprehensive assessment of communication transmitting and receiving stations in the local and regional context of the Project area. The Electromagnetic Interference Report had considered the potential impacts of the Project including the cumulative impact associated with multiple wind farms in the area and outlined mitigation measures to restore services if impacts occur.

The Applicant supported the model conditions (amended to refer to internet services) to address any potential NBN fixed wireless internet and TV reception issues.

(iv) Discussion

EMI has been considered at proposed wind energy facilities previously in Victoria and the techniques used to minimise the impacts of EMI are well-established. EMI can potentially interfere with mobile phone networks, telecommunication towers, fixed point-to-point microwave links as well as fixed point to multi point communications, television and radio broadcasting, satellite, and other telecommunication services.

[69] Document 16

The Panel is satisfied that EMI impacts were appropriately considered in the Electromagnetic Interference Report which identified the potential impacts on mobile phones and other significant communication transmitters and receivers was unlikely, low or able to be mitigated. The Report also appropriately considered the cumulative effect of other wind energy facilities.

The main potential EMI impacts in this instance are on NBN services and television reception. These impacts can be reasonably mitigated through the measures identified in the Electromagnetic Interference Report and through the application of the model conditions proposed, as amended to include references to internet services.

(v) Conclusions

The Panel concludes:

- The Electromagnetic Interference Report establishes an appropriate basis for establishing the Project will have no or low EMI impacts on telecommunications services.
- EMI impacts on television, internet, phone and radio reception can be minimised or mitigated to an acceptable level through the application of permit conditions (as amended to refer to internet access).

5.4 Health impacts

(i) The issue

The issue is

- The impact of the Project on health.

(ii) Submissions

Many submissions raised concerns about the cumulative health impacts from wind turbines particularly from noise and associated sleep disturbance, and from shadow flicker in addition to permanent views of turbines.

The EPA's submission identified that:

> … when assessing operational noise impacts to human health, the proponent should consider EPA's Technical Information on Wind Farms, Sound and Health, 2013. The operational impacts of noise and vibration from wind turbines to residences within and on the outskirts of the project area will need to be appropriately considered by the proponent as these have the potential to impact on health.

The technical information referred to outlines key concepts in relation to the sounds produced by wind energy facilities including their potential impact on health:

- the predominant sounds are in the mid to high frequencies
- may be audible (including low levels of low frequency sound to nearby residents)
- audible noise (from any source) can cause annoyance, resulting in prolonged stress and other health effects. The potential for health impacts depends on acoustic factors (including sound pressure levels and other characteristics of the noise) and non-acoustic factors (including individual noise sensitivity and attitude to the source)
- infrasound is audible when the sound levels are high enough. The hearing threshold for infrasound is much higher than other frequencies and for wind farms is at levels well below the hearing threshold and is therefore inaudible to neighbouring residents

- there is no evidence that sound, which is at inaudible levels, can have a physiological effect on the human body. This is the case for sound at any frequency, including infrasound.

(iii) Discussion

The potential for health impacts from wind farms has been considered by panels and VCAT on many occasions over recent years. The consistent conclusion reached has been that there is no evidence of direct physical or mental health effects caused by exposure to wind farms. In reaching this conclusion, panels including and EES inquires (such as Delburn, Golden Plains, Stockyard Hill and Dundonnell wind farms)[70] and VCAT (*Cherry Tree* decision) have relied upon, and placed weight on the relevant research reports and position of statements published by Commonwealth and State government health authorities.

The Panel was not provided with any evidence to support a position that wind energy facilities that are compliant with relevant standards will have an unacceptable impact on health.

The area around the Project site is actively farmed and there will be related background noise from production activities during the day as well as some related noise at night although not to the same extent as more intensive agricultural production activities. It is not an environment where the same noise levels would be expected in residential areas. While there has been a clear practice to not apply the High Amenity level to the Farming Zone for these reasons, the Applicant has indicated it can be met in any regard. Given the broader cumulative amenity impacts associated with the application every endeavour should be made to ensure affected landowners that operational wind farm noise will confidently meet the NZ Noise Standards and where practicable attempt.

(iv) Conclusion

The Panel concludes:

- There is no clear evidence to support the position that the Project will have unacceptable health impacts.

[70] Delburn Wind Farm (PCI) [2022] PPV 7, Golden Plains Wind Farm (EES) [2018], Stockyard Hill Permits (4) Call-in (PCI) [2017] PPV, Dundonnell Wind Farm (EES) [2016] PPV (Document 276a)

6 Cultural heritage, bushfire and hydrology

6.1 Cultural heritage

(i) The issues

The issues are:

- whether the permit application has appropriately considered the impacts on Aboriginal cultural heritage and cultural landscape
- whether the Project is likely to negatively impact Aboriginal cultural heritage.

(ii) Background

Relevant information includes (refer Appendix D for more detail):

- Policy:
  - Clause 15.03-2S (Aboriginal cultural heritage)
  - Clause 22.01-1 (Aboriginal heritage)
- Particular provisions: Clause 52.32-4 (Wind Energy Facility) which requires an assessment of the impacts on Aboriginal cultural heritage
- Application materials:
  - *Preliminary Cultural Heritage Report*, Biosis, March 2017[71]
  - EMP Framework which will include CHMP strategies
- *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2007*
- Guidelines:
  - WEF Guidelines (sections 2.1.3 and 4.3.2)
  - *Planning Practice Note 45: Aboriginal Heritage Act 2006 and the Planning Permit Process*, June 2015 (PPN45).

Preliminary Cultural Heritage Report

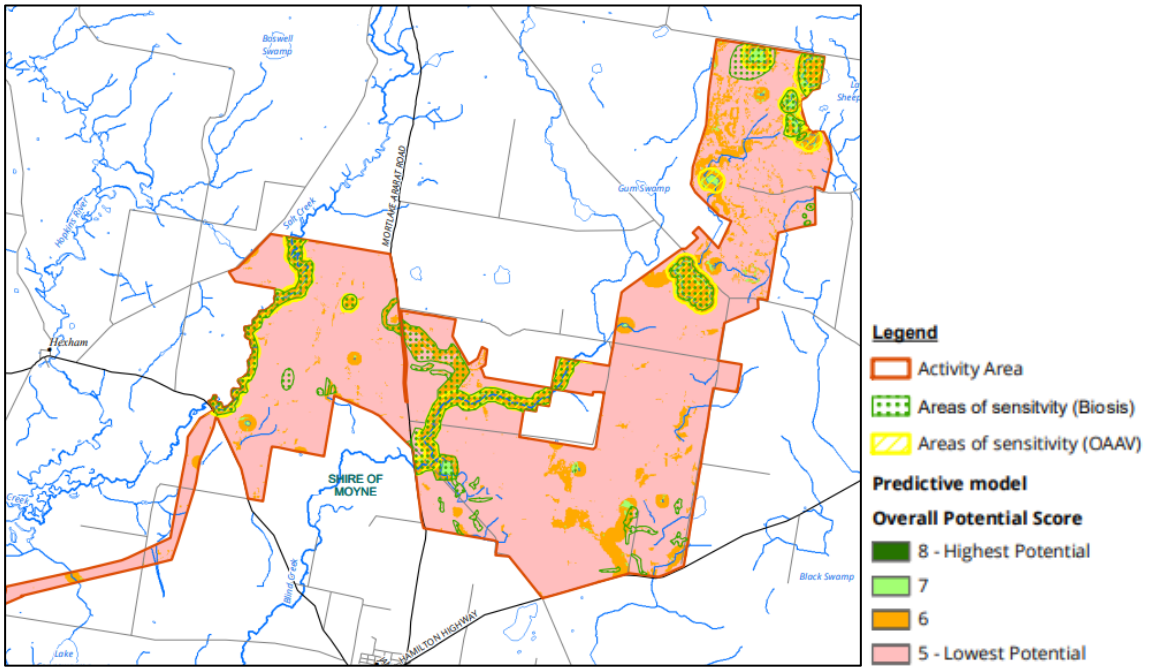
The Preliminary Cultural Heritage Report shows that Blind Creek, Salt Creek, and the stony rises in the north of the Project area are the most likely areas for the presence of Aboriginal archaeological places or artefacts (Figure 11).

Most of the Project area was identified as having a lower likelihood for the presence of cultural material, particularly in the southern section of the study area, south of the Warndoo – Darlington Road. No Aboriginal Places were located during the preliminary assessment.

Previous regional studies and CHMPs in the general area have detected evidence for past Aboriginal land use, through the identification of artefact scatters, scarred trees, burial/human remains and mounds that occur adjacent to lakes and swamps or stony rises in the geographic region and throughout the study area. The preliminary assessment identified that a CHMP was required for each of the two parts of the Project area, reflecting the status of Registered Aboriginal Parties and boundaries of the respective Traditional Owner groups.

[71] Document 21

Figure 11 Areas of potential Aboriginal archaeological sensitivity



Source: Preliminary Cultural Heritage Report Figure 8 Aboriginal sensitivity overview

Cultural Heritage Management Plans

Two CHMPs have been prepared for the project:

- CHMP 12658 (Western Extension Area), approved 11 January 2023, deals with land referred to as the 'western extension area' and includes management conditions which must be complied with under s67 of the Aboriginal Heritage Act relating to:
  - Condition 1 – a copy of the approved CHMP to be available on the project site for the duration of the activity
  - Condition 2 – a cultural heritage awareness induction program to be implemented and undertaken by all site workers/contractors undertaking ground disturbing works
  - Conditions 3 to 9 – exclusion and/or limitation of works within mapped areas ('no go zones') which correspond with several registered aboriginal places (including places registered as a result of cultural heritage investigations undertaken for the Project)
  - Condition 10 – requirements relating to the reburial of cultural heritage material discovered during the Project
- CHMP 12657 covering the balance of the Project area was approved 7 June 2023 and includes management conditions relating to:
  - Conditions 1 and 2 as per CHMP12658
  - Conditions 3 to 12 – exclusion and/or limitation of works within mapped areas ('no go zones') which correspond with several identified aboriginal places
  - Condition 13 – requirements relating to the reburial of cultural heritage material discovered during the Project.

(iii) Submissions

Submissions raised concerns about:

- the impact of the Project on cultural heritage values including the level of engagement with Traditional Owners

- impacts on the cultural landscape
- impact on the old red gums which may have cultural heritage significance.

MCA considered the Applicant had adopted a tick-box exercise, had not considered Traditional Owners and neighbouring indigenous people or reflected the Eastern Maar native title settlement. Ms Mifsud submitted the cultural heritage analysis had just been a desk top exercise.

The Applicant relied on the CHMPs to support a position that the proposal sought to avoid areas of cultural heritage sensitivity and that the application of permit conditions requiring compliance with them was an appropriate response to mitigating any impacts on Aboriginal cultural heritage.

(iv) Discussion

While CHMPs were not completed before the application was lodged, the Preliminary Cultural Heritage Report provided an appropriate level of analysis to understand the location of areas of potential cultural heritage sensitivity, adjust the Project design and Project area to avoid areas of high potential and to avoid disturbance within other areas.

The provision of CHMPs is a critical component of the assessment process and the approved CHMPs will ensure a thorough understanding of potential development impacts can be factored into the decision-making process for the Permit application.

CHMP (12658) was provided prior to the commencement of the Hearing and CHMP (12657) shortly before the Hearing completion. This enabled the Panel to review their content and related conditions in the event any Project issues arose requiring the Applicant's response. None did.

Western Extension Area CHMP (12658) identified:

- no mature, suitable species of indigenous trees that might show cultural modification by Aboriginal people were recorded
- two new Aboriginal archaeological places that were recorded during surveys
- areas of potential significance including the Salt Creek escarpment and intact stoney rises
- two work exclusion or no go zones not to be impacted by the Project (identified in management requirement conditions maps) for intact stoney rises and Salt Creek escarpment
- design or protective measures including exclusion fencing and track management to mitigate any impacts on four Victorian Aboriginal Heritage Register sites (and which are identified in management requirement conditions maps).

The Project area balance CHMP (12657) identified:

- five Aboriginal places recorded including a Scared tree, artefact scatters and sensitive areas adjacent to a saline lake (Terminal Lake), Salt and Blind Creeks and stoney rises. Two previous identified sites are now outside the Activity Area
- areas of potential significance including a section of Blind Creek and associated depressions and landform features, Salt Creek and the saline lake south of Woorndoo-Darlington Road and northern area stoney rises
- four work exclusion or no-go zones (identified in management requirement conditions maps) – Blind Creek and Salt Creek, northern stoney rises area and Terminal Lake
- design or protective measures including exclusion fencing and track management to mitigate any impacts on the identified Victorian Aboriginal Heritage Register sites.

The buildings and works associated with the Proposal have been designed in the first instance to avoid impacts on the areas identified in the Preliminary Cultural Heritage Report and Works Exclusion Areas, which generally correlate with the sensitive areas identified in the CHMP. The CHMPs identify the buildings and works associated with the proposal and set out appropriate measures to exclude or manage impacts before, during and after the disruption activity. The conditions and associated mapping reflect the Project layout (including turbine and access track locations) and do not appear to require Project changes.

The Panel is generally comfortable that areas of potential sensitivity can be properly managed during the construction and operational phases without changes to the Project. While compliance with the CHMPs is a legislative requirement, the Panel considers there would be some benefit in ensuring the CHMP conditions are reflected in the Permit conditions relating to Development plans, Micro-siting and Environment Management Plan. The EMP Framework identifies that CHMP strategies will be included in the EMP and "*other associated plans*", but does not clearly articulate how this should be done or emphasise significance of compliance.

(v) Conclusions and recommendation

The Panel concludes:

- The permit application has appropriately considered Aboriginal cultural heritage and applied a design approach that has sought to avoid areas of sensitivity.
- The approved CHMPs provide an appropriate mechanism to mitigate any impacts of the Project on Aboriginal cultural heritage.
- Any permit issued should include references to the approved CHMPs in any development plans, micro-siting and EMP conditions. Suitable amendments have been made in Appendix F.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Reference the two approved Cultural Heritage Management Plans in the 'Amended plans', 'Micro-siting' and 'Environment Management Plan' conditions.**

6.2 Bushfire

(i) The issues

The issues are whether:

- the Project will increase risk of fire ignition from the turbines and other sources
- the Project will result in an acceptable local bushfire risk
- the permit application has appropriately considered external bushfire risk to the Project
- the wind turbines will negatively affect the ability to fight fires by both ground and aerial appliances and crews.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy:
  - Clause 13.02-1S (Bushfire planning) which includes a requirement for a bushfire risk assessment
  - Clause 22.03-8 (Fire protection)
- Particular provisions:
  - Clause 44.06 (Bushfire Management Overlay) – the Project land is in a Bushfire Prone Area with the south west portion in the BMO (refer mapping extent in Figure 13, Appendix D3)
  - Clause 53.02 (Bushfire planning)
- Application materials:
  - *Bushfire Assessment*, GHD, August 2022[72]
  - EMP Framework including plans for fire and emergency management
- draft Permit conditions which include the CFA's submission conditions
- Guidelines:
  - WEF Guidelines (section 4.3.2) which require a context analysis and design response consider bushfire risk and management measures for facilities and grid connections
  - *Planning Practice Note 64: Local planning for bushfire protection*
  - CFA Guidelines

Bushfire Assessment

The Bushfire Assessment identifies:

> With the exception of the sub-station connecting the wind farm transmission lines to the electricity grid (at the far south-western extent of the project), the project site does not fall within the Bushfire Management Overlay (BMO) of the Moyne Planning Scheme (Clause 44.06 Bushfire Management Overlay).

The Bushfire Assessment identifies a number of reasons why a Bushfire Hazard Site Assessment, Bushfire Hazard Landscape Assessment, and Bushfire Management Statement (as would normally be required under Clause 44.06-3 due to the proposed subdivision of land) are not relevant to the assessment of this application.

These reasons included clearance of the pine plantation area for the substation and subdivision being the only remaining trigger.

The Bushfire Assessment notes the proposed sub-station and associated transmission lines will be subject to statutory vegetation clearance requirements and compliance with the *Electricity Safety (Electric Line Clearance) Regulations 2015.*

The Bushfire Assessment:

- classified the Project site as having a vegetation class of 'Grassland (unmanaged)' and vegetation type of 'Sown pasture', Open Herbfield', 'Tussock Grassland' and 'Open Woodland – Low Open Woodland,
- reviewed bushfire history
- considered potential bushfire scenarios including from fast-moving grassland fire, from ignition sources including lightning strikes or from vehicles and machinery

[72] Document 19

- included an analysis of how the project complies with the CFA Guidelines in relation to buildings, turbine firebreaks, access and water supply, siting and design including for aerial firefighting
- identified potential ignition sources and prevention and mitigation measures during construction and operation and associated low risk rating
- was informed by discussions with the CFA
- concluded:
  - the bushfire protection objectives of Clause 53.02-4 were achieved
  - suitable defendable spaces could be provided around structures
  - suitable static water supply could be provided
  - safe access and egress could be provided for emergency services
  - a Bushfire Emergency Plan covering construction and operation should be developed as a condition of permit.

(iii) Evidence and submissions

Submissions expressed concern that the Project:

- was a potential source of fire and would increase the risk of community harm from fire, particularly through the concentration of wind farms
- would impair firefighting capacity and access during fire events including aerial firefighting and put fire personnel at risk
- created a need for additional resources, training and equipment for the Mortlake CFA.

The Applicant relied on the bushfire evidence of Mr Potter and Mr Taylor who reviewed the Bushfire Assessment and prepared a Risk Management Plan and Fire Safety Study (Fire RMP) modelled on the CFA Guidelines and informed by the *Wind Farms and Bushfire Operations*, Australian Fire and Emergency Services Authorities Council 2018, the WEF Guidelines and Clauses 13.02--1S, 44.06 and 52.32 of the Planning Scheme.

The evidence of Mr Potter and Mr Taylor was:

- the Project area is a low risk landscape for bushfires
- presence of maintenance operators and facility staff will provide early identification of fires or activities that may cause fires
- the design of the Project meets, or will meet through detailed design, all the model requirements including:
  - provision of access roads suitable for firefighting vehicles to access all areas of the facility and onsite water supply for fire fighting
  - the inclusion of automatic fire detection, alarm and fire suppression systems within turbine nacelles which will significantly reduce the low likelihood of fire occurring
  - fire breaks around the base of turbines, construction compound, substation and static water supply points (noting that the project's access tracks will serve as fire breaks)
  - the spacing of turbines 500 metres apart (rather than the standard 300 metres) will not impede fire suppression operations including aircraft operations
  - automatic shut-down of turbines and power disconnection in the event of a fire
  - fire risk can be mitigated through a Fire RMP including processes for engagement with local CFA brigades prior to and during fire emergencies.

Council submitted that the bushfire experts accepted that the Project in itself may create a bushfire hazard and that Clause 13.02-1S made bushfire safety an issue of highest order. It

considered while the use of the CFA Guidelines by the experts was appropriate, their Fire RMP was inconsistent with the guidelines in that:

- it was not prepared in consultation with the CFA
- it has not been used to inform design of the facility
- it had not considered lessons from previous fires and emergencies in Australia and globally.

Council was critical that the bushfire evidence had not considered the presence of surrounding wind energy facilities including existing and proposed transmission poles and towers or the challenges of aerial fire-fighting. It noted that its experience with the Dundonnell operation was:

- turbines could be quickly and remotely turned off
- on site water resources and upgraded tracks were a positive
- there was a lack of on-site staff to assist (particularly if the policy was to have employees/contractors leave the site)
- Council and CFA contacts are not necessarily up to date
- helicopter appliances were used
- the need for a post fire debriefing.

Council nominated two additional bushfire conditions:

- a site and safety briefing and induction on fire risk management strategies, water supply and emergency contacts with local CFA brigade and Council representatives before the commencement of development
- prior to each declared bushfire season, the local CFA brigade and Council representatives are updated on construction and operation activities and risks.

The MCA was critical of the Bushfire Assessment and the bushfire evidence relating to:

- bushfire history
- consideration of cumulative impact
- lack of consultation with the local CFA (including about their capability) and landowners
- the experts' experience in the management of fires in high risk environments
- the Fire Risk Assessment which it considered superficial and deferred the necessary risk assessment until after the approval of a permit.

Lorraine Vandeligt (Submitter 74 and who co-presented with the MCA) was concerned about the cumulative impact of turbines around Mortlake and the associated fire risk. She identified pilot avoidance of flying near turbines during fire activity on wind farm sites because of the impact of smoke on visibility and effective fire targeting, and CFA guidelines that fire not be attended until they were clear of all turbines put the Mortlake community at risk from fast travelling grass fires. She advised that her contact with the Applicant had confirmed that turbines would not be turned off in the event of a fire on the site.

Similar concerns about bushfire impacts were identified in the submissions of Mr Allen, Mr Williamson, Ms Parker, MCA and the Thomas Family and submissions 110 and 112. The Thomas Family queried who would be in attendance at the wind farm during fire events or bushfire conditions or to assist neighbouring farms. The Thomas Family was concerned that there were insufficient local appliances to manage the risk of such fires.

The Applicant submitted that through the preparation of the Bushfire Assessment, the bushfire expert statement and Fire RMP:

- it was clearly articulated that there is a bushfire risk within the landscape which is why the CFA Guidelines require significant mitigation treatments including fuel breaks and fire detection and suppression equipment
- it had sourced and referred to bushfire event information available from fire agencies and government authorities
- with the exception of some planted vegetation all other low-risk location attributes of the CFA Guidelines were achieved, with the guidelines identifying mitigation measures to offset residual risk (for which the CFA had provided in-principle support)
- the identified Fire RMP mitigation measures when implemented "*should result in an equivalent level of bushfire risk*"
- the CFA had been consulted and raised no issues in relation to the substation location
- the provision of defendable space and water supply for firefighting would ensure any risk is reduced to an acceptable level.

The Applicant submitted that fire ignition risks from the Project could be managed in accordance with bushfire policy objectives in the Planning Scheme and that appropriate fire management responses are proposed in the Fire RMP. The Project would support fire-fighting resilience through provision of access tracks, static water supplies and implementation of the Fire RMP.

The Applicant concluded that fire risk has been appropriately assessed and responded to and there was no fire related reasons why a permit should not be granted, subject to the proposed conditions. These related to Aviation and the Applicant's versions of the CFA permit conditions (refer to conditions 59 to 61 in Appendix F).

The Applicant advised it had discussed the changes with the CFA, and the CFA had confirmed it was comfortable with the revised conditions in correspondence dated 6 June 2023.[73] The Applicant did not support Council's proposed condition changes.

(iv) Discussion

The key issue for the Panel is whether the Project will increase the risks of bushfire. It must assess bushfire hazard and consider whether the Project's bushfire protection measures will result in no net increase in bushfire risk.

The Panel must consider whether the objective of the bushfire planning policy has been met:

> To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.

Managing fire risk is a paramount consideration under the Planning Scheme, with Clause 13.02-1S prioritising the protection of human life over all other policy considerations. Planning policy seeks to reduce the vulnerability of communities to bushfire by considering bushfire risk in decision making at all stages of the planning process. In considering this risk it is appropriate to identify bushfire hazards and undertake appropriate risk assessment. This approach is also encouraged through the WEF Guidelines.

In this instance only a small portion of the site is within the BMO and it is only the subdivision of the grid substation site that triggers a permit under the overlay. The Panel is satisfied the substation site can provide sufficient defendable space and that the Bushfire Assessment is adequate based on the requirements of the BMO and its primary focus on at risk uses.

[73] Document 300

The Panel accepts the findings of the Bushfire Assessment and bushfire evidence that the Project land is generally within a lower-risk environment given the generally flat topography, a vegetation predominance of modified grass land and pasture grass, lack of contiguous dense vegetation and farming land use.

There remain a range of potential risks associated with potential grass fires or ignition from the turbines, substations or machinery during construction and operational conditions. Decision makers are reliant on the provision of an appropriate bushfire assessment and the views of the CFA to understand if the risks are low and can be mitigated.

In this case the CFA did not object to the application and identified a series of permit conditions included on the DTP version of permit conditions, subject to minor variations to reflect the bushfire evidence. The bushfire evidence supported the Bushfire Assessment and included a Fire RMP.

The Panel is satisfied on the basis of the expert evidence that the Bushfire Assessment is sufficiently robust and applied an appropriate methodology in assessing fire risk, consistent with that set out in Clauses 13.02-1S and 53.02 of the Planning Scheme, the WEF Guidelines, and was informed by discussions with the CFA. This included examining the proposal against the CFA Guidelines and identification of a series of construction and operation prevention and mitigation measures explored in more detail in the Fire RMP.

The Panel is satisfied that the Fire RMP provides a sufficiently rigorous assessment of risk and mitigation measures consistent with the CFA Guidelines and provide an appropriate basis for the condition seeking the preparation of a risk management plan. The Fire RMP builds in the utilisation of best practice automatic fire detection, alarm and fire suppression systems within the turbine nacelles and provides for emergency shut off. This is considered an appropriate prevention/mitigation strategy.

The Panel is satisfied that the bushfire evidence supports the greater than 500 metre spacing between turbines to ensure unimpeded access by fire suppression aircraft. The proposed access tracks will enable fire-fighting appliances to readily access the Project area (or adjoining land) and turbines. While there was speculation that aerial fire-fighting could not be undertaken or that fires on wind farm sites would not be attended until a fire has passed, there was no evidence provided for this position or that there would be a cumulative increase in bushfire risk. Critically, the CFA have provided support for the Project, provided suitable conditions are included in any permit.

The CFA condition (as amended) for the preparation of a fire management plan and emergency management plan is an important requirement which will address many of the concerns raised in community submissions about potential bushfire impacts. The preparation of such plans should factor in any risks associated with existing facilities.

The inclusion of the CFA's conditions on any permit issued is an appropriate mechanism to mitigate and manage bushfire risks posed by the turbines and wind energy facility operation or through grass fires moving through the Project area from adjoining land. The Panel generally supports the changes to these conditions identified by the Applicant which identify that much of the detail in the CFA conditions will be confirmed through the risk management plan, fire management plan and emergency management plan preparation.

The Panel does not consider the additional bushfire conditions suggested by Council are necessary. They are overly detailed and would be included in the measures and arrangements implemented into the fire management plan and emergency management plan. However, there is some value

in ensuring that the EMP reflects the measures identified in these plans given the EMP Framework uses different terminology. The Panel has included suitable changes in Appendix F.

(v) Conclusions and recommendation

The Panel concludes:

- The Project area is in a low-risk landscape for bushfires.
- The application has appropriately considered external bushfire risk to the proposed wind energy facility and fire risks from its operation.
- The Bushfire Assessment and Fire RMP provide an appropriate level of confidence that fire risk can be appropriately mitigated or managed to an acceptable level so as not to increase bushfire risk.
- Bushfire risk can be minimised and appropriately managed through the application of permit conditions including the CFA conditions as amended and the EMP condition subject to minor changes.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Amend the Environmental Management Plan condition to integrate with the fire risk management plan, fire management plan and emergency management plan and identified fire management measures required by the CFA conditions**

6.3 Hydrology

(i) The issues

The issues are the impact of the Project on:

- surface water
- groundwater.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy:
  - Clause 12.03-1S (River and riparian corridors, waterways, lakes, wetlands, and billabongs)
  - Clauses 13.01-1S (Natural hazards and climate change) and 13.04-2S (Erosion and landslip)
- Application materials:
  - *Surface Water Assessment*, Entura, August 2022[74]
  - *Hydrogeological Assessment*, Entura, August 2022[75]
  - draft EMP Framework requirements for water quality management

[74] Document 23
[75] Document 24

- draft Permit conditions including requirement for an EMP and GHCMA referral conditions.

Surface Water Assessment

The Surface Water Assessment included modelling to calculate pre and post development flood depths and velocities across the Project area and concluded:

- all turbines have been located a minimum of 200 metres from natural waterways that intersect the site, Salt Creek and Blind Creek, and at least 30 metres from all smaller intermittent streams
- the presence of the proposed wind turbines is unlikely to significantly change water depth and velocity across the development area compared with current conditions
- the development area will typically encounter flood depths (in a 1 percent AEP event) of less than 0.4 metres including at the base of some turbine locations
- due to the low modelled flow velocities, no significant damage or erosion risk is expected
- careful design of infrastructure that intersects a waterway is required including an appropriate drainage and filter system to manage the risks associated with runoff carrying increased sediment load during the construction phase
- prior to construction the final layout plan be reviewed by GHCMA
- the Project is a low risk from a surface water management perspective with the implementation of surface water management conditions and necessary works on waterway licences (including for intersecting cable trenches and access tracks).

Hydrogeological Assessment

The Hydrogeological Assessment identifies:

- depth to groundwater across the site is generally less than 5 metres below natural surface
- based on an indicative maximum turbine foundation depth of 4 metres there is potential for groundwater to be encountered at 72 of the proposed turbines
- temporary local dewatering may be required during construction
- drawdown associated with such dewatering is expected to be local to turbine locations and minor, with no impact on groundwater dependent ecosystems
- a field investigation is recommended to confirm the local hydrogeological conditions (and the presence of groundwater) and inform detailed design.

(iii) Submissions

Ms Blacker submitted that the construction of turbine footings would impact on local groundwater water resources including an aquifer and associated springs which were an important resource for agriculture. She was concerned that the Project would potentially impede underground flows or impact water quality. Similar concerns were identified in submissions 50, 56 and 59.

MCA and the Thomas Family considered the potential impact on groundwater flows represented a "*huge risk*" to agricultural productivity and the impacts had not been properly modelled including downstream mitigation. This included impacts on the short-finned eel that depend on Blind Creek, town water supplies and food security.

The EPA's submission identified potential impacts on waterways (including to surface and groundwater and ephemeral wetlands) that would require management.

The submission of GHCMA supported the granting of a permit subject to conditions relating to waterway buffers (to wetlands and major waterways and ephemeral waterways) and sediment control measures. It also noted it had not been given the opportunity to review the modelling work through the permit process.

The Applicant submitted the Project is low risk from a surface water management perspective. The implementation of standard surface water management measures through proposed permit conditions and a Works on Waterway licence would ensure no unacceptable surface water impacts. Relying on the Hydrogeological Assessment it submitted any groundwater impacts could be appropriately managed.

(iv) Discussion

The Panel is satisfied that the issues of hydrology including the impacts on waterways, wetlands (including ephemeral wetlands) and ground water have been adequately assessed in the Surface Water and Hydrogeological Assessments.

The impacts on surface and ground water including from sediment or other discharges can be adequately managed through the application of a EMP (including CEMP) and the proposed GHCMA conditions.

The Panel considers that local flash flooding around substation compound sites will need consideration during detailed design once the site civil works are designed, as the Surface Water Assessment did not cover this. This can be addressed through an additional requirement of a CEMP, as can a requirement for a field investigation to confirm the local hydrogeological conditions (and the presence of groundwater) and inform detailed design as recommended in Hydrogeological Assessment. The Panel has identified changes to the permit conditions in Appendix F.

The Project has generally exceeded GHCMA proposed buffers for surface and groundwater assets. However, it is not clear that a buffer has been applied to all wetlands or a buffer applied to all ephemeral waterways. The Applicant's final version of conditions amends the GHCMA suggested wording for waterway buffers. While it generally aligns with what was sought, the final location of identified waterways and minimum buffers should be confirmed with GHCMA including the modelling work used.

The construction of foundations for 75 turbines will have potential impacts on groundwater which will require a particular management response as identified in the Hydrogeological Assessment. Given the relatively small scale of the footprints, it was considered highly unlikely that the Project would have any regional scale impact on groundwater levels or flow directions.

The Panel considers any dewatering process should be managed to minimise environmental impacts and is an appropriate matter to be included in a CEMP. The Panel discusses the need for a CEMP in Chapter 7.5. Any micro-siting of turbines should also account for potential ground water impacts.

(v) Conclusions and recommendation

The Panel concludes that:

- The Project will not have any significant impacts on waterways and surface and ground water subject to the application of permit appropriate conditions.
- Any micro-siting of turbines should consider the impacts on groundwater.

- Any permit issued should require a CEMP which includes:
  - a field investigation to confirm the local hydrogeological conditions (and the presence of groundwater) to inform detailed design
  - the appropriate management of any dewatering required during turbine footing construction
  - consideration of localised flooding events.
- Any permit issued should ensure that the amended waterway buffers condition aligns with data and minimum buffers required by the GHCMA.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **amend the 'Micro-siting' condition to include the consideration of impacts on groundwater**
- **amend the Environment Management Plan condition to consider localised flooding events and provide for a field investigation to confirm the local hydrogeological conditions (and the presence of groundwater) and inform detailed design as part of a Construction Environmental Management Plan.**
- **amend the Glenelg Hopkins Catchment Management Authority conditions to require its confirmation of waterway buffers.**

7 Other issues

7.1 Traffic

(i) The issues

The issues are whether:

- the construction traffic volumes have been underestimated resulting in an underestimate of impacts
- South Road and its bridge should be upgraded and the road sealed
- construction traffic could cause damage on the arterial network, other than at site access points, that would need ameliorating.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy: Clauses 18.01-1S (Land use and transport integration), 18.01-2S (Transport system), 18.01-2R (Transport links – Great South Coast), 18.02-4S (Roads), 18.02-6S (Ports)
- Particular provisions: Clause 52.29 (Land adjacent to principal road network)
- Application materials:
  - *Traffic Impact Assessment*, GHD, August 2018[76]
  - EMP Framework which identifies that the EMP will include construction and operational plans including plans for traffic management
- draft Permit conditions including:
  - vehicle access points
  - pre-construction public safety road survey
  - Traffic Management Plan
  - traffic upgrade works.

The Traffic and Transport assessment identified:

- construction traffic estimate of 112,000 two-way vehicle trips (an average of 246 trips per weekday) with approximately 61,805 truck trips (60 per cent) and 865 over dimension vehicle trips (1 per cent), with the remainder construction workforce light vehicles
- operational estimate of 40-50 light vehicle movements per day, with access from South Road
- main traffic volume increases are along the Hamilton Highway and Mortlake-Ararat Road
- local roads such as Six Mile Lane, North Road, South Road and Castle Carey Road will experience a proportionally larger increase in traffic as they currently carry low traffic volumes
- the increase in traffic during construction is not expected to have a negative impact on the local community
- a Construction Traffic Management Plan should be prepared in consultation with DTP and Council prior to construction, which would finalise traffic numbers and transport routes including all upgrades and road strengthening works required.

[76] Document 15

(iii) Evidence and submissions

Mr Walley gave evidence for the Applicant that traffic volumes were determined by GHD from first principles based on advice from the Applicant. The estimate of approximately 110,000 trips over the 21-month construction period was conservative as it assumes all material will be sourced off-site.

He advised South Road traffic will increase significantly from around 15 vehicles per day to up to 125 vehicles per day in the first 5 months (phase 1), increasing to 152 vehicles per day in the following 4 months (phases 1 and 2) before settling to around 25-50 vehicles per day for the remainder of the construction period. Should alternative access options be pursued this could limit South Road to 102 vehicles per day in Option 1 or in Option 2 increase it to 208 vehicles per day in the phase 1 and 2 overlap.

Mr Walley indicated the traffic volumes assumed that 50 per cent of the workforce would travel to the site by shuttle bus. He provided a sensitivity assessment assuming 90 per cent drive to the site. This would result in up to an additional 29 vehicles per day on South Road. In access Option 2 the traffic volume on South Road could peak at 255 vehicles per day.

Mr Walley advised that the Infrastructure Design Manual recommends for rural roads carrying over 150 vehicles per day, the pavement be sealed and be 6.2 metres wide. Sealing should consider capital costs versus on-going maintenance costs and safety considerations. He considered that as there was no long term need to seal the road following the construction stage. It should be up to the Applicant to balance the need to seal the road versus maintaining an unsealed road during the construction period.

In respect to other roads, Mr Walley advised that local and arterial access points and road crossings would be upgraded prior to the commencement of their use. While supporting a condition for a geotechnical assessment of local roads prior to commencement, he did not support a requirement to assess the fitness of arterial roads for the Project's construction traffic. Rather the arterial roads should be considered fit for purpose.

Council submitted that its experience with other wind farms has shown that damage to local and arterial roads is common and inadequately rectified by the operators.

It considered that the traffic estimates were low. The estimate for Dundonnell Wind Farm (with 80 turbines) was around 10,000 vehicles per day higher, while the estimate for Mortlake South Wind Farm (37 turbines) was approximately 15,000 vehicles per day higher. It also noted that in the absence of a geotechnical study of the site it was not possible to accurately determine the amount of material needed to be brought to the site.

Council called for the sealing of South Road with a 6.2m wide pavement plus table drains and shoulders designed to balance environmental features within the road reserve. It advised that sealing the road reduced maintenance. Other wind farms had sealed local roads and this created a lasting benefit. Council argued that the use of the road for 18 months justified its sealing. In 2016 Council identified that the single lane pavement in South Road was failing and in 2021 removed the old seal and upgraded the road to a six metre unsealed formed width to improve safety.

Council said Six Mile Lane also needed to be upgraded to a two-lane sealed road between Hamilton Highway and the site entry.

The Applicant advised that the construction compound abutting Six Mile Lane would be accessed from the main entry on Hamilton Highway and that Six Mile Lane was only anticipated to carry up

to 19 vehicles per day in any phase of the Project and is not a proposed heavy vehicle route. It argued that Council had provided no evidence to justify the sealing of either road.

DTP submitted the increase in daily truck traffic on aging and fragile pavements can result in immediate and significant damage to arterial roads. DTP noted that the Road Management Act allows it to seek compensation for extraordinary damage to roads as a result of extraordinary events. It also called for a geotechnical assessment of arterial roads to determine a baseline. The transport of turbine components would require over dimensional load permits and through these permits some infrastructure upgrades may be required.

Other submitters raised concern with the potential delays and detours on the road network that may occur during construction and transport of the large turbine components, noting particularly impacts on school buses and detour lengths.

Concern was also expressed about the control of livestock and biosecurity with construction vehicles entering and existing active farms.

(iv) Discussion

In its final version of conditions, the Applicant accepted DTP's conditions and proposed further conditions that address most of the traffic concerns raised in submissions and many of Council's proposed permit conditions. These are primarily addressed in the Traffic Management Plan condition which requires among other things:

- assessment of the traffic generation and the quantity of materials to be brought to the site
- specific measures to manage construction traffic including avoiding impacts on school bus routes and providing truck wash bays
- assessment of the suitability and condition of both local and arterial roads to carry the extra traffic loads.

The condition could be enhanced with a requirement to 'minimise' traffic impacts and the inclusion of a stock control plan to minimise the potential for any stock to exit onto the road network through open gates as construction traffic enters and exits. The Panel has included suitable wording in Appendix F.

The proposed traffic upgrade works condition specifically addresses the upgrade of South Road and its bridge, but it does not specify sealing of either this road or Six Mile Lane, stating it must be designed and constructed to the satisfaction of the responsible authority. This condition must also be read in conjunction with the Traffic Management Plan condition which requires engineering plans demonstrating whether, and if so how, truck movements to and from the site can be accommodated on sealed roadways and turned without encroaching the wrong side of the road.

The level of traffic currently anticipated to use Six Mile Lane does not justify upgrading it. However, this can be reviewed as a part of the preparation of the Traffic Management Plan.

South Road will contain five site access points, providing access to between 37 turbines in the preferred access scenario and 54 turbines if there is no access from Hamilton Highway. The existing unsealed pavement will not have been designed for the volume of heavy vehicles turning into and out of the site access points over the life of the Project, requiring work to consolidate or maintain the pavement. This level of traffic is beyond the consideration of the Infrastructure Design Manual. How the road should be constructed and maintained is a matter for the road

authority to determine. The design of South Road should give consideration to how to minimise the impact on the native flora and fauna as discussed in Chapters 5.2, 5.4 and 5.5.

(v) Conclusions

The Panel concludes:

- The traffic impacts of the Project are acceptable and can be managed subject to permit conditions generally consistent with those proposed.
- The proposed Traffic Management Plan condition requires the assessment of traffic volumes following detailed design and can adequately mitigate construction traffic impacts but should seek to 'minimise' traffic impacts and include a stock control plan.
- A condition requiring the sealing of Six Mile Lane is not justified based on the current traffic access strategy.
- South Road should be sealed between Mortlake-Ararat Road and the eastern most site access point. However, its final design (including bridge design) should minimise the environmental disturbance to listed native grasslands and Striped Legless Lizard habitat, Hairy Burrowing Crayfish and Little Galaxias as recommended in Chapter 3.5.

7.2 Agriculture

(i) The issue

The issue is whether the Project will have an adverse effect on agriculture.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy:
  - Clause 13.07-1S (Land use compatibility)
  - Clauses 14.01.1S (Protection of agricultural land), 14.01-2S (sustainable agricultural land use)
  - Clauses 17.01-1S (Diversified economy) and 17.01-1R (Diversified economy – Great South Coast)
  - Clauses 21.04 (Municipal vision), 21.09 (Mortlake) and 22.03-4 (Agricultural production)
- Particular provisions: Clause 35.07 (Farming Zone) including zone purpose and decision guidelines. A wind energy facility is a Section 2 use conditional on meeting the requirements of Clause 52.32
- Application materials:
  - *Mt Fyans Wind Farm Planning Application*, Hydro Tasmania, December 2022[77] (Planning Report)
  - EMP Framework which identifies that the EMP will include construction and operational plans relating to biosecurity, pest and weed management.

The Planning Report describes existing site land uses as broad acre cropping in the southern and western areas and grazing in the northern stony rises. It concludes the Project would not prohibit or diminish the existing agricultural practices within the Project area or on surrounding properties,

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or adversely affect livestock. Once decommissioned, the land is proposed to be rehabilitated. The Planning Report considered the Project would complement and be compatible with existing agricultural uses and provide an additional source of income for participating landowners, improve farm viability and facilitate investment in agricultural production.

(iii) Submissions

Submissions raised concerns that the proposal would result in:

- the loss of productive agricultural land
- difficulty to farm through impacts on biosecurity and from pest and weeds
- an increase in the number of absentee rural land owners
- the impacts of farmer sleep disturbance (safety and health).

Council identified concerns about biosecurity impacts during construction and operations given the Project extended over multiple farms and the need to better manage on-site outcomes relating to access and weed control. This included appropriate monitoring and compliance and improved EMPs.

Mr L Cumming submitted that valuable agricultural land would be lost due to the physical footprint of the Project (including from internal access roads, turbine pads, substations and other infrastructure) and that there was no provision for these losses to be offset. He was concerned about farm biosecurity and limiting the movement of vehicles (including during construction) between farms to prevent the spread of livestock diseases. He identified concern about gates being left open and stock wandering. Similar concerns were raised in Submissions 103 and 110.

Ms Parker submitted that the Project would restrict the capacity for farms to adapt to emerging agricultural practices including creating barriers to the efficient use of large machinery and creating a shift to grazing rather than cropping. It would also create biosecurity risks from contractors travelling from one farm to another.

Mr Allen expressed concern the Project would adversely affect farming practices in the region, stating that "*producers don't need their farming lifestyles or production areas compromised.*"

Ms Blacker submitted the proposal would impact the area's natural springs and the aquifer which were important to agricultural activities. MCA expressed similar concerns about the potential impacts on agricultural production and food security. Ms Haworth was concerned that the extent of concrete footings would destroy good agricultural land.

Ms Lenehan said the impact on farmers within one kilometre of the Project boundary would be compounded by the recent Planning Scheme changes introduced by Amendment VC212 which limited what could be constructed without a permit. Mr L Cumming and Ms Parker raised concerns about the need for consent from the windfarm operators for certain applications. Ms Mifsud was concerned that a permit would now be required for a dwelling where it was not before. The Thomas Family said the restriction on building or repairing structures required for agriculture would hamper the ability to farm.

The Applicant submitted wind turbines and transmission lines have small development footprints and that the Project will operate concurrently with the current agricultural land uses. The area of land proposed to be removed from agricultural use is less than one percent of the site. Further, there are many wind farms currently operating simultaneously with productive agriculture.

(iv) Discussion

The Farming Zone purpose includes to encourage the use of land for agriculture, the retention of productive agricultural land and ensuring that non-agricultural uses do not adversely affect agricultural use. The Farming Zones allows a range of non-agricultural uses (including wind energy facilities subject to a permit and satisfying certain conditions). The wind resource and existing supporting infrastructure are located in areas under the Farming Zone.

In terms of non-agricultural uses, applications must be considered on their merit and in addition to consistency with the planning policy framework, consider as appropriate:

- Whether the use or development will support and enhance agricultural production.
- Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.
- The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.
- The capacity of the site to sustain the agricultural use.
- The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.

Agriculture is a significant employer and contributor to the economy within the Shire of Moyne and in towns like Mortlake. The planning policy framework (including clauses 14.01.1S, 14.01-2S 17.01-1S, 17.01-1R, and LPPF (clauses 21.04 and 22.03-4) acknowledge the importance of agriculture and preserving productive farmland while also providing for a diversified economy.

The Great South Coast Regional Growth Plan acknowledges the role of agriculture in the region's growth and also the opportunity that renewable energy projects have to diversity the rural economy. It does not map or distinguish the quality or significance of agricultural land resources.

There is no rural or agricultural land strategy referenced in the Planning Scheme (at a State, regional or local level) that identifies rural land that is of high agricultural significance. None the less the Panel is satisfied that in terms of the Farming Zone decision guidelines:

- the extent of land required for the wind energy facility (including for footings and access tracks etc) is not significant in terms of land lost for agricultural production
- agricultural production can continue during construction and through operation
- the land unable to be used during operations can be returned to agricultural use following rehabilitation
- the impacts on adjoining farms will be minimised through the application of the EMP including plans for managing access, soils, runoff, biosecurity and pest animals and weeds
- aerial spraying and seeding will not be significantly compromised (refer Chapter 7.3)
- the impact of the subdivision for the creation of lots for the two substations will be insignificant in terms of removing available for agricultural production in the region
- the Project is broadly consistent with the objectives and strategies in the planning policy framework and the Local Planning Policy Framework.

The Panel acknowledges the local farming families and landowner concerns relating to how they perceive the Project may affect their rural lifestyle and livelihood through potential impacts on existing agricultural land uses. However, the Panel is satisfied that any impacts would be relatively minimal and are likely to be less impactful during operation as opposed to the construction phase. The Panel is confident that agricultural production can successfully operate concurrently with the Project.

Many of the concerns relating to biosecurity can be addressed through the EMP as proposed in the EMP Framework and the proposed Complaints conditions (as amended in the Applicant's Final version) and the GHCMA conditions, however the Panel considers that biosecurity management measures should be more clearly set out in the EMP condition. Many submitters were concerned that contractors would avoid such measures by avoiding wheel washes or using alternative access points. While the Panel understands permit compliance remains a major concern for many parties, this is a separate matter. The Panel has focused on ensuring any conditions proposed are clear and enforceable.

The Panel is also cognisant of the fact that neighbouring landowners within one kilometre of the title boundary would be affected by the planning provisions introduced by Amendment VC212 if the Project were approved. The Applicant identified that there are 17 non-host dwellings within one kilometre of the project title boundaries.

The provisions apply to all properties adjoining wind energy facilities in the Farming Zone. While they provide permit triggers for accommodation uses and associated development, these uses (and development) are not prohibited and they do not apply to the construction of agricultural related structures. Rather, the controls seek to achieve a balance between amenity protection (from noise and shadow flicker) and supporting wind energy facilities. It is not anticipated that these controls will significantly impact agricultural enterprises or existing rural land uses.

(v) Conclusions and recommendations

The Panel concludes:

- The Project will not have an unreasonable impact on agriculture and is consistent with the planning policy framework and Local Planning Policy Framework and the decision guidelines of the Farming Zone.
- Potential impacts on biosecurity can be appropriately managed through permit conditions including through an EMP.

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Amend the Environmental Management Plan condition to include a reference to measures for managing biosecurity during construction and operational phases**

7.3 Aviation

(i) The issues

The issues are:

- impact on aviation safety
- impact on aerial seed or crop spraying.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Policy: Clause 18.02-7S (Airports and airfields)

- Particular provisions: Clause 52.32-6 (Wind Energy Facility) decision guidelines require the consideration of impacts on aircraft safety, including firefighting aircraft
- Application materials:
  - *Aviation Safety Assessment*, Aviation Projects, August 2022[78]
  - *Mt Fyans Wind Farm Planning Application*, Hydro Tasmania, December 2022 (Planning Report)[79]
- draft Permit conditions based on CASA proposed conditions
- WEF Guidelines (sections 4.3.5 and 5.1.5).

WEF Guidelines

The WEF Guidelines advise:

- that proponents consult or notify:
  - CASA on proposals within 30 kilometres of a declared aerodrome or airfield, that infringe aerodrome obstacle limitation surfaces or exceed 110 metres
  - the Aeronautical Information Services of the Royal Australian Air Force for tall structures over 30 metres within 30 kilometres of an airport or 45 metres elsewhere
- a responsible authority:
  - ensure CASA has been consulted in relation to aircraft safety and navigation issues
  - consider reducing the number of obstacle lights or mitigating their intensity and glare.

Aviation Safety Assessment

The Aviation Safety Assessment was prepared following engagement with CASA, Aerial Application Association of Australia, AirServices Australia, Department of Defence, air service operators at Warrnambool and Western Aerial (Derrinallum) and operators of non-regulated aerodromes within the vicinity of the Project, including Mortlake aircraft landing area.

The Assessment considered *Guideline D: Managing the Risk to Aviation safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers*, National Airports Safeguarding Advisory Group E and concluded the Project will:

- not impact the Obstacle Limitation Surfaces of Warrnambool Airport
- not impact any protected aviation services or nearby aircraft landing areas
- not impact operational airspace, nearby designated air routes or the grid lowest safe altitude
- be outside clearance zones associated with civil aviation navigation aids and communication facilities
- not result in a significant cumulative impact arising from nearby existing or approved wind farms
- not require any obstacle lighting.

It makes recommendations to mitigate aviation safety risks including:

- giving notice and details (heights and locations) of constructed infrastructure to CASA, Airservices Australia and local and regional aircraft operators so that the wind farm can be recorded on relevant aeronautical charts and notices
- painting turbines white to provide contrast
- marking meteorological masts and transmission lines

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- consulting with local aerial application operators and aerial firefighting operators to assist those operators in developing procedures for flights in the area.

(iii) Submissions

Submissions identified concerns with the impact of the turbine height and number on aviation including for fire-fighting and for chemical spraying. One submission considered that aerial services costs would increase as a result. Ms Parker submitted that the proposal would limit the use of drones for crop and soil monitoring, and aerial seeding and spraying.

A number of submissions raised concerns about aerial appliances being able to attend fires in and around the Proposal.

CASA did not oppose the grant of a permit for the Project or require any particular conditions to be imposed. It recommended application referral to the Department of Defence for its consideration.

The Applicant advised that the application was sent to the Department of Defence on 2 March 2023 but that to date there has been no response.

(iv) Discussion

The height of turbines can have an impact on the operations of airports and airfields and air safety navigation as well as aerial fire-fighting. Clause 18.02-7S of the Planning Scheme recognises the significance of airports and their protection from incursion.

The Panel considers the Aviation Safety Assessment provides an appropriate assessment of the impact of the Project on aviation safety and the operation of airports and airfields. Its preparation has had reference to relevant standards and guidance and engagement with key aviation safety stakeholders. While a final response has not been received from the Department of Defence the Assessment clearly identifies the views of CASA and Department of Defence and the mitigation measures sought by them.

The Panel is satisfied that the Project will not impact aviation safety or the operation of airports and airfields subject to the implementation of the mitigation measures identified in the Aviation Safety Assessment. These measures have been appropriately addressed in the four Aviation draft permit conditions with the minor edits proposed by the Applicant. The Panel has included these conditions in Appendix F which include additional minor changes to assist in understanding abbreviations used in the DTP version.

While the Panel is satisfied the Project won't have an impact on aviation safety (including through cumulative impact), it acknowledges that it may have an impact on aerial spraying activities near the turbines in certain wind and turbulence conditions. In most instances this should not impact the ability to operate drones or aerial seed or spray crops on adjacent farms although different flight paths might need to be used to avoid turbines during these activities. The Panel notes the Planning Report identifies that the Project sought to respond to the Aviation Safety Assessment by:

- covering the blades and masts and nacelle with a light colour to provide contrast
- lighting wind monitoring towers above 150 metres
- consulting with local aerial agriculture operators on any overhead transmission lines or supporting poles that could adversely affect aerial agricultural operations and marking them using three-dimensional coloured objects spaced 30 metres apart.

Proposed permit conditions specify that the turbines or wind monitoring towers do not contain aviation lighting and materials and finishes be identified. Not requiring lighting on the turbines will also assist in minimising visual impact.

However, there is no condition which seeks to address the marking of transmission lines that may present a hazard for aerial agricultural operations. While the CASA conditions do provide for the provision of data to support such operations, an additional aviation condition to require appropriate line marking following consultation with local operators and referring to the Aviation Safety Assessment to determine a specific treatment is necessary. This would also enable consideration of any line marking required for bird avoidance and to consider visual and landscape impacts.

The Panel recommends the following or similar condition be applied if a permit is issued (included in Appendix F):

> Prior to the installation of transmission lines, any overhead transmission lines and/or supporting towers that could adversely affect aerial agricultural operations should be identified including through consultation with local aerial agriculture operators and appropriately marked consistent with the Aviation Safety Assessment included at Appendix Q of the Mt Fyans Wind Farm Planning Application (December 2022) or other agreed treatment, all to the satisfaction of the responsible authority.

(v) Conclusions and recommendation

The Panel concludes:

- The Project will not impact on aviation safety.
- The Project will not unreasonably impact aerial seeding or crop spraying and can be adequately addressed through permit conditions including the proposed CASA permit conditions.

The Panel recommends:

> **Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:**
>
> - **Include an additional aviation condition that requires prior to the installation of transmission lines, any overhead transmission lines and/or supporting poles and towers that could adversely affect aerial agricultural operations be identified through consultation with local aerial agriculture operators and appropriately marked consistent with the Aviation Safety Assessment.**

7.4 Social and economic impacts

(i) The issue

The issue is whether the Project will have unreasonable social or economic impacts

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Section 60(1)(f) of the PE Act requiring the consideration of significant economic and social impacts

- Policy:
  - Clauses 11.01-1S (Settlement), 11.01-1R (Settlement – Great South Coast) and 11.03-6S (Regional and local places)
  - Clause 13.07-1S (Land use compatibility)
  - Clauses 17.01-1S (Diversified economy) and 17.01-1R (Diversified economy – Great South Coast)
  - Clause 19.01-2S (Renewable energy)
  - Clauses 21.04 (Municipal vision) and 21.09-4 (Mortlake)
- Application materials:
  - Planning Report
  - *Community Consultation Report*, Woolnorth Renewables/Nation Partners, August 2022[80]
- WEF Guidelines (section 2.1.5 'Exclusion of wind energy facilities in locations that are likely to be required for future growth').

Planning Report

The Planning Report identified the Project would contribute to the local and regional economy through job creation and flow-on economic benefits. It would support regional economic performance by providing additional income to landowners who host turbines and other infrastructure.

Community Consultation Report

The Community Consultation Report outlines the aims and objectives of community consultation and stakeholder engagement for the Project. This includes making lasting positive contributions to Mortlake and surrounding communities through early engagement with key stakeholders and establishing trusting relationships with clear lines of communication. It identifies the extent of engagement with immediate dwelling owner neighbours (within 3 kilometres of a turbine), the broader Mortlake township and surrounding communities, Council, the Eastern Marr Aboriginal Corporation and DELWP (now DEECA).

The report outlines socio-economic engagement plans and benefit schemes that were developed to promote community support of the Project. These include:

- a Community and Stakeholder Engagement Plan (updated in 2021)
- a Near Neighbour Benefit Scheme
- a Benefit Sharing Program which includes a community fund, construction payments and near neighbour benefits.

(iii) Submissions

Submitters defined the issue in the following ways:

- Social impacts:
  - potential to divide the community
  - the lack of social license to impact the community
- Economic impacts:
  - limiting the growth of Mortlake
  - reducing investment and tourism

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  - impacts on agricultural production
  - impacts on property values
- lack of engagement with the community to understand impacts.

Several submissions provided a counterview, suggesting the Project would provide:

- host landowners with income to invest in farming activity or spend locally
- employment opportunity associated with construction and operation
- local economic diversity and benefit for local businesses including additional employment and supporting additional services and population growth
- an opportunity to establish a renewable energy hub around Mortlake
- support for manufacturing in the region
- grants to support community projects
- utilisation of existing power infrastructure
- support for a shift to renewable energy.

Social impacts

The Applicant submitted that the proposed Benefit Sharing Program would provide annual payments of between $2,500 and $25,000 to neighbours in dwellings within 4 kilometres of a wind turbine. The payments would commence once 70 per cent of the turbines were operating and continue for up to eight years and then be reviewed. The program would make contributions to the broader community through an annual fund of up to $85,000. A donation of $50,000 had already been made for an emergency helicopter landing pad at the Mortlake Recreation Reserve.

Council was critical that the Applicant did not produce a social and economic impact assessment as part of the application and the Project placed a burden on the local community that was not offset by the local benefits. Council supported a benefit sharing initiative but outlined concerns around its practical application for community funds including:

- the discretion to cease payments following the eight-year reassessment period
- whether payments would be indexed to CPI
- the actual amount of funds to be paid which were expressed as 'up to $85,000'.

Council proposed that the community benefits scheme be committed to through a permit condition requiring a section 173 agreement under the PE Act. This condition would require the fund to operate for the life of the Project, provide for CPI indexed payments and input from a community management group.

Many submitters were concerned that the Project had created division within the community and among landowners who had agreed to host turbines and those who had not. Mr Hicks said the Project had set neighbour against neighbour. Jennifer Lewis (Submission 16) considered the community benefit fund would divide the community. Ms Haworth made a similar submission.

Ms L Thomas submitted the Project was not supported by the local community as evident in opposing submissions provided to Council and through the application process and community meetings, and had *"no social license"*. Mr Allen was concerned the community fund would impact traditional fundraising activities (with it easier to go the wind farm operator direct) and was an attempt to "*buy social licence*".

Ms Mifsud considered the Project would result in a quick decline of the community, exacerbate limited housing supply, observing the Dundonnell wind farm had bought no apparent benefit.

Economic impacts

The Applicant submitted the Project would create more than 100 jobs during construction and 10 full-time local jobs over the Project's 25-year lifespan with flow-on economic benefits. It would support the local community by retaining services and enhancing community confidence while providing host landowners with additional income.

Some submitters were concerned the Project would only provide short-term economic benefit that the long-term impacts would not be sufficiently offset for its 25-year lifespan.

Mr Hicks considered the short-term benefits did not offset the likely community disruption, potential financial losses and impact on land and property values. He submitted the Project would result in population decrease and loss of businesses and services. Mr Allen made similar observations noting existing empty shops in Mortlake, a concern he considered would be exacerbated with the Project a disincentive to live in the area.

Submissions 48 and 102 considered the proposal would impact on growth or the ability for Mortlake to grow. Ms Parker submitted the Project would impact on land available for growth of residential and commercial areas. Submission 12 was concerned about business viability in Mortlake from existing wind energy facilities and impacts on rental accommodation which had displaced residents and potential employees.

Submission 4 considered the town would "*die off*" as it became an unattractive place to live. Two other submitters indicated they would sell up if the Project went ahead.

The MCA submitted the Project along with other existing and proposed wind energy projects would spoil the tourist experience.

Council observed that the closest turbine would be within 2.25 kilometres from the Rural Living Zone edge of Mortlake and the Project would effectively wrap around the town from the north-west to the north-east. A 5-kilometre buffer to the Rural Living Zone edge was required to allow for potential development and growth of Mortlake as the only service centre town servicing the northern part of the Shire. It submitted:

> Key worker housing and associated and ancillary industrial development should flow to Mortlake as a result of being surrounded by major renewable energy developments, but to date this has been sporadic and generally limited to during the construction phase. Providing cumulative benefits, particularly in housing and economic/business opportunities may assist in rebuilding social license.

Council proposed that any permit issued should require a Workforce Accommodation Strategy to address short term housing shortages, reduce extended car travel by workers and support local businesses.

A number of submitters were concerned about the impacts on their property values. Ms Blacker was concerned that impacts on springs and aquifers would devalue her agricultural property. The Thomas Family considered the cumulative impacts of noise, shadow flicker and on the landscape would make their home unliveable and diminish the value of the property.

The Applicant in closing submitted Council had not articulated how the Project would impact on the growth of Mortlake. It had not articulated what growth was anticipated and where it would locate (based on land capability or housing studies for example). It was therefore not possible to establish if the Proposal would curtail Mortlake's growth.

In relation to impacts on property values the Applicant submitted that VCAT had considered many planning reviews on whether the negative impacts on property value was a relevant planning consideration. It cited *Bookaar Renewables Pty Ltd v Corangamite SC* [2019] VCAT 1244:[81]

> The relevance of economic impacts in planning matters relates to the contended effects on the community, not individuals and their private financial interests. The effects must be demonstrable, and the effects must be 'significant', consistent with the wording in the *Planning and Environment Act 1987*.

The Applicant concluded "*the Project will have positive economic impacts on the community. There is no evidence provided by submitters to the contrary*."

Community engagement

The Applicant advised its consultation commenced in 2010, but more detailed consultation including interviews and feedback from stakeholders was conducted in early and late 2020. A third party was engaged on two occasions to support community engagement and to advise the Applicant on community concerns about the Project.

The Applicant submitted that a broad range of actions have been taken to engage with the community and affected landowners about the Project including meetings, workshops, distribution of written information such as newsletters, a Project website, attendance at public events and the setup of a 'drop in' shopfront in Mortlake since 2020 until the present day.

The Applicant submitted the Project design had been modified in response to feedback received including:

- a new transport route from Portland Port to the Project site to reduce oversize transport travelling through Mortlake
- improvements to South Road and strengthening of Blind Creek Bridge to ameliorate concerns around heavy transport loads carrying materials
- relocation of the substation on South Road and overhead transmission line
- addition of a temporary construction compound on South Road to improve traffic flows
- relocation of two wind turbines that were less than one kilometre from a dwelling
- removal of four wind turbines that were less than one kilometre from a property.

A number of parties were highly critical of the community and land owner consultation undertaken. This included dissatisfaction from the closest land owners about the flow of Project information, the explanation of Project impacts or the extent to which information had been sought from them when conducting background noise monitoring, landscape impact assessments or collecting or verifying brolga and other species data. These concerns were expressed in no uncertain terms by Mr L Cumming, Mr H Cumming, Mr Williamson and the Thomas Family.

(iv) Discussion

Section 60(1)(f) of the PE Act requires the consideration of significant economic and social impacts while Clause 19.01-2S includes a strategy to:

> consider the economic, social and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.

Clause 52.32 does not introduce any additional social or economic considerations.

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Social impacts

Opposing submissions referred to the many submissions made to Council (the 608 submissions) and community opposition expressed at local community meetings, and that this meant the Applicant did not have 'social license' for the Project. While the Panel does not doubt there is significant local opposition to the Proposal on many fronts, the level of opposition or lack of social licence is not particularly relevant to deciding whether a permit should be issued or establishing the level of social impact. Submissions were divided on whether the Project would have positive or negative impacts on the community.

The Panel does not have the benefit of a social impact assessment or evidence. Such analysis would have enabled a more rigorous consideration of social impacts. However, it acknowledges the Applicant did engage with the local community in an endeavour to understand community impacts and concerns. The absence of this assessment or evidence does not create a sufficient level of uncertainty for the Panel to conclude the Project would have a negative social impact or at least an unacceptable social impact.

The proposed Benefit Sharing scheme is recognised as one way for the 'host' community to share in the benefits of a major energy project. Its application is provided for in Clause 19.01-1S which identifies as a relevant consideration the *Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria* (Department of Environment, Land, Water and Planning, July 2021). The Applicant's proposed scheme has been developed in a way that would provide social and economic benefit to Mortlake and surrounds through community infrastructure investment and direct financial benefit to eligible landowners. This does not mean it offsets all potential social or other impacts.

A number of submitters were concerned about how the scheme would work and that it would divide the community amongst those that directly financially benefited and those that did not, or that it should be extended (in value and duration). While the Panel considers the Benefit Scheme will assist to minimise social (and economic) impacts, the application of such a scheme is largely a voluntary one and not one that it is appropriate for the Panel to make commentary on in terms of its application, terms or content.

The Panel agrees with the submissions of the Applicant and DTP that a Benefit Scheme should not be a requirement of any permit issued. No examples of community benefit funds included as permit conditions were provided the Panel – their provision is not identified in the WEF Guideline model conditions or as a permit requirement in the *Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria: A guide for renewable energy developers.* The Panel observes that in any event the EMP Framework identifies its preparation.

On balance, the Panel considers that the Project is likely to deliver social benefits to Mortlake and the wider community and will not have unacceptable social impacts on Mortlake and surrounds. Consistent with the planning policy framework there will be broader social benefits for Victorians associated with renewable energy generation.

Economic impacts

Economic impacts on individuals such as property value impacts are not relevant matters for consideration in the context of the PE Act and the Planning Scheme. Rather the planning framework is focused on considering broader economic impacts.

In the absence of an economic impact assessment or evidence one way or another, and with submissions again split on potential impacts (both positive and negative), it is difficult for the Panel to establish what the economic impacts on Mortlake or the wider community will be.

That said, there is no dispute that the Project will create jobs in the construction phase and through its operation (including maintenance and site management). This level of investment and employment is likely to have flow on multiplier effects for the town (in terms of accommodation, use of local businesses and services). It also has the potential to support regional economic activity including transport or manufacturing that have already established or grown to support the energy industry.

It is largely speculative as to whether the Project along with other wind energy operations will have a positive or negative impact on tourism or result in population increase or decline.

In terms of the potential to impact on the growth of Mortlake, Council did not establish what the impact would be other than the strategic desire to establish a 5 kilometre exclusion buffer from the edge of the Rural Living Zone to allow for growth. While this distance reflects the WEF Guidelines and Clause 52.32-2 buffers, these are identified to protect major regional cities and centres identified for future population growth while growth area planning is completed. They are not permanent buffers as such.

Mortlake is not one of these identified centres. This is not to dispute the important service centre and district town role played by Mortlake within the Shire of Moyne, but it is unclear to the Panel why this Project will curtail the town's growth or its ability to fulfill its role. Council did not identify that a structure plan or township strategy was in place or to be developed or what the town's capacity is for growth (available lot supply or capacity within the existing General Residential Zone). It did not identify anywhere in the Planning Scheme that indicates a strategic intent to expand growth northwards (if conditions were suitable) into the Rural Living Zone, which is not a zone designed to support substantial residential growth.

The Panel is limited to policy guidance in Clause 21.09-4 which supports contained growth, a defined settlement boundary and promoting development growth and economic investment. The Clause 21.09-4 Mortlake Framework Plan (Figure 12 in Appendix D1) identifies a Rural Living Zone area for residential growth to the east of the town between Boundary Road, south of Hamilton Highway and Old Deport Lane. This area would be at least 3 kilometres from the nearest proposed turbine.

On balance the Panel considers the Project aligns with the objectives and strategies of Clause 21.09-4 and the planning policy framework supporting economic diversity and growth.

The Panel does not support the application of Council's proposed condition to require a Workforce Housing Strategy. While the Panel understands such a condition was applied to the Golden Plains wind farm approval that context was different, and it is unclear whether its application has had the desired outcome. The Panel considers it is not a reasonable permit requirement and lacks statutory or strategic justification.

Community engagement

The Panel acknowledges the concerns from some submitters about the level of engagement with local land owners, particularly those most affected by the Project. The landowner engagement approach appears to have created a level of uncertainty and speculation about impacts in the local community, as well as uncertainty about opportunities for amelioration through design or other

mitigation measures. There were limitations in the extent to which the community engagement was able to illicit useful information relating to landscape and noise or regarding fauna observations. The engagement process has led to a lack of trust in the application process and about the veracity of the material provided in support of the application. It was not, however, so significantly deficient as to warrant the refusal of a permit for the Project.

(v) Conclusion

The Panel concludes:

- No evidence or submissions were provided to persuade the Panel that the Project will have unreasonable social or economic impacts.

7.5 Construction impacts, complaints and decommissioning

(i) The issues

The issues are whether:

- the impacts of construction can be appropriately managed
- complaints can be made and appropriately addressed
- decommissioning of the facility is adequately covered in the planning permit conditions
- decommissioning considers the end life of turbines, blades and transmission tower materials including disposal, recycling and management of any contamination
- a monetary bond should be provided to ensure decommissioning takes place.

(ii) Background

Relevant information includes (refer to Appendix D for more detail):

- Particular provisions: Clause 52.32-4 (Wind Energy Facility) - provision of a rehabilitation plan and an environmental management plan (including rehabilitation and monitoring)
- WEF Guidelines (sections 5.1.6 'Construction impacts and decommissioning' and 4.3.4 'Environment Management Plan' and example permit conditions for:
  - decommissioning including requirements when a turbine(s) ceases for:
    - notification
    - a Decommissioning Traffic Management Plan
    - removal of plant, infrastructure and access tracks no longer required for ongoing use or facility decommissioning
    - reinstatement of the site to its original condition before construction
  - an EMP which:
    - describes measures to minimise construction and decommissioning impacts
    - a CEMP which includes detailing procedures to manage dust and noise emissions, erosion, stormwater run-off
  - complaints, including preparing an investigation and response plan and establishing complaints register
- an EMP Framework which identifies that the EMP will include construction and operational plans relating to decommissioning, hydrocarbon and hazardous substances, construction noise, vibration and dust management
- draft Permit conditions for an EMP, Complaints and decommissioning (generally based on model conditions).

The WEF Guidelines identify that an EMP should detail how a site will be managed during construction and set out future operational and maintenance requirements and may include:

- measures to minimise amenity and environmental impacts of construction and decommissioning
- a construction component that includes measures to manage dust and noise emissions, stormwater runoff and erosion
- a complaints management process.

(iii) Submissions

Submissions identified:

- that the construction of the Project could have amenity and environmental impacts including dust and other off site emissions
- concerns that complaints would not be acted on
- there was no certainty of enforcement to ensure decommissioning took place at the end of the Project or if an operator became insolvent
- there was potential for the community to be exposed long term to the costs or ongoing visual impacts of unused infrastructure
- there was no identification as to how turbine blades and structures would be managed once removed.

Submission 87 was concerned about the long term effects of turbine disposal, while Submission 59 questioned how they would be recycled. Other submissions raised concerns about the contamination impacts of turbine blades as the fibres deteriorated.

Submission 36 submitted that wind farm operators should provide a security payment to cover the costs of decommissioning so that ratepayers would not be left with the expense of removing turbines.

The EPA submission supported the application of a CEMP to manage issues associated with construction including sediment control contamination from fuel spills and machine washdown and dust, citing State Environment Protection Policy.

Council's original submission considered that:

- construction vehicle access and movements would impact on local road infrastructure
- the EMP should include improved outcomes for stack and stockpile sites and rehabilitation
- any permit issued should include appropriate reporting frameworks and compliance pathways.

Council's Hearing submission identified changes to the proposed permit conditions to:

- amend the development plans condition to include the location of the concrete batching plant (accepted by the Applicant)
- amend the EMP condition to include incident response protocols and monitoring (not accepted by Applicant)
- require a CEMP that includes procedures for managing dust and noise and other off site impacts, sediment control, temporary works, stockpiling, waste management, monitoring and matters relating to post-contact heritage (not accepted by the Applicant)

- require compliance and reporting on all endorsed and approved management plans including quarterly audit reporting to the responsible authority for 5 years (not accepted by the Applicant)
- amend the Complaints Register condition to require its regular provision to Council (accepted by the Applicant with minor changes)
- provide a further decommissioning requirement for notification to the responsible authority, a Traffic Management Plan, a resource recovery plan and other matters (not accepted by the Applicant)
- require a copy of the permit and all endorsed documents and monitoring reports to be displayed on a project website (accepted by Applicant).

The Applicant proposed changes to the decommissioning condition to improve interpretation and the EMP condition to include a hydrocarbon and hazardous substances management plan as part of the decommissioning plan required as part of its EMP Framework.

(iv) Discussion

Issues arising from construction have the potential to cause amenity impacts including dust and noise as well as environmental impacts associated with erosion and stormwater runoff. The EMP Framework identifies that the EMP will include a CEMP which addresses such issues. DEECA's conditions also include a CEMP condition which consider specific matters.

The WEF Guidelines include a standard CEMP condition which has not been applied:

> 24. The Environmental Management Plan must include a Construction Environment ManagementPlan, which must include:
>
> a) procedures to manage dust and noise emissions, erosion, mud and stormwater run-off
>
> b) procedures to remove temporary works, plant, equipment, buildings and staging areas, and reinstate the affected parts of the land, when construction is complete
>
> c) [specify any other requirements or recommendations arising from consideration of theapplication].

It is unclear why this condition was not applied. Given the uncertainties of whether a concrete batching plant might be required on site during construction, the potential for blasting and whether DEECA's proposed CEMP condition covers a sufficiently broader suite of matters, the Panel considers there is value in such a condition. It can be incorporated into the EMP condition as shown in Appendix F:

- generally based on the model condition to manage potential amenity impacts relating to construction noise and dust
- cross-reference relevant DEECA and GHCMA conditions relating to sediment and erosion
- include requirements for monitoring and waste management broadly consistent with Council's suggestions.

Council's suggestions for a CEMP to address dry stone walls and unexpected finds are unnecessary.

The Panel supports the Applicant's proposed EMP requirement for a hydrocarbon and hazardous substances management plan. The requirement for the development plans to include details of the concrete batching plant is appropriate.

The Panel is satisfied the proposed decommissioning condition is generally appropriate with the Applicant's Final changes. However, the Panel considers further minor changes are necessary to:

- identify associated land reinstatement (or partial reinstatement) to ensure the primary rural land use continues
- reference the EMP (inclusive of the CEMP) to manage amenity and environmental impacts
- provide for a resource recovery plan. This is a reasonable condition given the scale of the Project and the broader planning policies for waste recovery and sustainability.

A requirement for a monetary bond or similar for decommissioning is not supported. It would be an unreasonable and unfair requirement and lacking in statutory and strategic planning justification and an evidentiary foundation.

In terms of complaint management, the Panel considers the complaints framework set out in the proposed permit conditions, with the inclusion of changes proposed for complaints reporting to be provided to Council, appropriate and reasonable.

The additional compliance reporting conditions proposed by Council are considered an unnecessary additional requirement as these plans generally require implementation to the satisfaction of the responsible authority. The Panel does, however, support Council's proposed condition relating to access to endorsed plans and reports.

(v) Conclusions and recommendations

The Panel concludes:

- The impacts of construction can be appropriately managed through permit conditions.
- A CEMP should be required which references the DEECA conditions for a CEMP and vegetation protection zones and the GHCMA conditions, and includes provision for waste management.
- The proposed complaint permit conditions provide an appropriate framework for making, responding to, and reporting on complaints.
- Decommissioning can be appropriately managed through permit conditions generally consistent with the Applicant's Final version with appropriate changes.

The Panel recommends:

Providing the further work recommended in this Report satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Permit for the proposed development subject to conditions consistent with Panel's version of planning permit conditions in Appendix F including:

- **Amend the Environment Management Plan condition to:**
  - **provide incident response protocols and monitoring**
  - **require a Construction Environment Management Plan which includes a process for managing waste and any groundwater dewatering required associated with the turbine footings**
  - **reference the relevant DEECA (Environment Portfolio) and Glenelg Hopkins Catchment Management Authority conditions.**
- **Amend the Decommissioning condition to include requirements for site reinstatement and a resource recovery plan and reference Environment Management Plan measures.**

8 Integrated assessment

8.1 Relevant considerations

Clause 71.02-3 of the Planning Scheme requires a responsible authority considering a permit application to take an integrated approach, and to balance competing objectives in favour of net community benefit and sustainable development.

Clause 65 of the Planning Scheme states:

> Because a permit can be granted does not imply that a permit should or will be granted. The Responsible Authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines of this clause. [Panel's emphasis]

Clause 65.01 requires the Responsible Authority to consider, as appropriate:

- the matters set out in s60 of the PE Act
- the planning policy framework
- the purpose of the zone, in this instance the Farming Zone and other provisions (including in particular clauses 52.17, 52.32 and 53.02)
- the effect on the environment, human health and amenity of the area
- the extent and character of native vegetation and the likelihood of its destruction
- whether native vegetation is to be or can be protected
- the degree of fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.

Other matters to be taken into account include:

- objections
- comments and decisions of referral authorities
- other matters a Responsible Authority must and may take into account under the PE Act including the Victorian planning objectives
- adopted government policy.

8.2 Integrated assessment

Clauses 65 and 71.02-3 of the Planning Scheme require a decision as to whether the Project will produce acceptable planning outcomes in terms of the various planning policies and provisions of the scheme. This task requires balancing conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations.

There is a strong strategic support in the Planning Scheme for the establishment of renewable energy facilities to address climate change impacts and to meet energy emission reduction and renewable energy targets. These policies need however to be balanced with other policy considerations including impacts on biodiversity, landscape and bushfire as discussed in the preceding chapters.

Issues relating to native vegetation, bushfire and landscape and amenity can be managed to an acceptable level consistent with the Planning Policy Framework and Local Planning Policy Framework through permit conditions and appropriate mitigation measures.

The Panel is mindful that the purpose of Clause 52.32 is "*to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area*." [Panel's emphasis]

The Panel considers the proposed location is an appropriate location for the purposes of Clause 52.32. It is within an area of wind resource, targeted for further strategic investment in the transmission network and adjacent to existing transmission and power grid infrastructure. The impacts of the Project on cultural heritage and aviation can be managed through project design and mitigation measures, as can impacts from shadow flicker and EMI.

The Project is likely to result in positive community benefits through the delivery of renewable energy to address climate change impacts and achieve energy emission reduction. It is likely to have local and regional economic benefits including through employment and support for local services, efficient utilisation of existing power infrastructure and through a shared benefit scheme. These outcomes are consistent with the policy framework and the objectives of the PE Act which seek to balance the present and future interests of all Victorians. Permit conditions can address many of the impacts relating to the Project to an acceptable level.

The positive aspects of the Project need to be balanced against the environmental, biodiversity and other impacts of the Project including noise and landscape.

The Panel acknowledges that the Project is of a significant scale in terms of turbine numbers and geographic spread. It will have a marked impact on the rural landscape and contribute to a cumulative visual impact for Mortlake and the district. For some residents this will extend to views of multiple wind farms and potential for noise to be received for extended periods from different operations depending on wind direction. There is little guidance in the WEF Guidelines, Planning Scheme or NZ Noise Standards to assist in determining where the tipping point lies in terms of cumulative landscape and noise impact. The Panel has on balance formed the view that a tipping point has not been reached in this sense by the Project, however clear compliance relating to noise emissions must be a focus for the operator.

The potential impacts on biodiversity particularly the Brolga and SBWB are the most significant. Given the Brolga is endangered (FFG Act) and the SBWB critically endangered (FFG Act and EPBC Act) it has applied the precautionary approach to its assessment.

In the Panel's view there is too much uncertainty about these impacts based on the level of information provided in support of the application including providing an appropriate level of confidence that:

- habitat and movement corridors for Brolga and SBWB in particular have been considered
- all existing and potential Brolga flocking and breeding areas have been properly identified, adequately buffered and appropriate mitigation measures fully considered
- the reduced Brolga breeding buffers have been sufficiently justifed
- a net zero impact and avoidance of cumulative impact can be achieved for the Victorian Brolga population or that the potential impacts are acceptable
- the potential impacts on SBWB from the project and the cummulative impact from other nearby wind energy facilities will not be significant or that the proposed mitigation measures will provide for an acceptable level of impact
- the potential impacts on other listed bird and bat species including Matters of National Environmental Significance will be acceptable
- the impacts can be satisfactorily addressed through permit conditions.

The Panel considers that this level of uncertainty outweighs the positive outcomes and tips the balance of the Project to one that will not have a net community benefit or achieve a sustainable development outcome. A permit should not be further until additional assessment has been undertaken to address the Panel's concerns.

8.3 Further work and potential permit conditions

While the Applicant has not satisfactorily demonstrated that the potential impacts to Brolga, SBWB and other species can be managed to acceptable level the Project land is an appropriate location for a wind energy facility and many of the impacts can be mitigated through planning permit conditions. If additional work is undertaken as identified in Chapter 3 many of the Panel's concerns relating to biodiversity impact can be addressed and responded to, potentially through a modified proposal.

While the Panel has recommended that a permit should not be issued until this further work is completed and concludes issues relating to impacts on Brolga and SBWB can be appropriately managed it has included a preferred version of permit conditions in Appendix F. These include marked up changes to address recommendations in this Report regarding the suitability of permit conditions.

Further changes to the permit conditions will be required if the Panel's additional assessment recommended to be completed is accepted and results in changes to the Project. This particularly relates to the Development Plans, Bat and Avifauna Management Plan and Brolga Compensation Plan conditions. The Panel's version includes notes where condition(s) may need to be amended accordingly shown as:

Panel note:

The final version of conditions should also be consistent with *Writing Planning Permits*, May 2023 (Department of Transport and Planning).

8.4 Conclusions and recommendations

The Panel concludes:

- For the reasons outlined in this Report, it would be premature to grant a planning permit for the Project unless and until some key uncertainties are satisfactorily resolved.
- Further work is required to address the uncertainties in relation to the Project's impacts on fauna, particularly Brolga and the Southern Bent-wing Bat, as identified in Chapter 3 of this Report.
- Providing the additional work satisfactorily addresses the uncertainties identified in this Report, a planning permit for the Project should be granted subject to conditions that are:
  - generally consistent with the conditions in Appendix F
  - reviewed to ensure they appropriately respond to the further information provided or include any changes required to the location and number of turbines
  - consistent with *Writing Planning Permits, May 2023* (Department of Transport and Planning).

Based on the reasons set out in this Report, the Panel recommends:

1. **Before further considering Planning Permit Application PA1800406, direct the Applicant to provide the following further information to the satisfaction of the Department of Energy, Environment and Climate Change (Environment Portfolio):**

   For Brolga:

   a) **Provide further assessment of potential Brolga breeding areas which includes:**
      - **all Victorian Biodiversity Atlas and other database records, including the Arnol and Ors 1984 location data and all sites identified in the aerial surveys**
      - **further local knowledge inputs within the 10 kilometre radius of investigation including all landholders with potential Brolga habitat and relevant community groups.**

   b) **Undertake additional flight behaviour studies to inform Collision Risk Modelling as required by the Level 3 assessment of the *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, 2011, Revision 2012 (DSE).**

   c) **Complete a Brolga Compensation Plan generally consistent with the draft condition in Appendix F and which also includes:**
      - **linkages to the Bat and Avifauna Management Plan and its mortality monitoring program**
      - **arrangements for regular ground and aerial surveys at appropriate times of the year to accommodate variability in environmental conditions**
      - **mortality monitoring and reporting annually for the first five years and then every five years for the life of the project.**

   d) **Recalculate the turbine free buffers around Brolga flocking and breeding sites in light of the above information. Re-site turbines and other overhead infrastructure outside the buffers.**

   For other fauna species:

   e) **Further assess potential impacts and mitigation measures arising from Southern Bent-wing Bat movement within and through the site.**

   f) **Assess the cumulative impacts to fauna species including from the Salt Creek, Dundonnell and Mortlake South wind energy facilities. The assessment should include information on behaviour, habitat utilisation and movement, and clear guidance on gathering and assessing information.**

   g) **Further assess potential impacts on *Flora and Fauna Guarantee Act 1988* listed species including:**
      - **bird species including Black Falcon, Gull-billed Tern, Freckled Duck, Little Egret, Eastern Great Egret, Little Eagle and Blue-billed Duck**
      - **Yellow-bellied Sheath-tail Bat.**

   h) **Complete the Adaptive Management Plan and Population Viability Analysis for Southern Bent-wing Bat. The Adaptive Management Plan should address the concerns outlined in this Report and provide a clearer commitment to curtailment.**

   i) **Complete a Bat and Avifauna Management Plan to enable an assessment of the effectiveness of proposed adaptative management measures on bat and bird species. This should:**

- **include all *Environment Protection and Biodiversity Conservation Act 1999* and *Flora and Fauna Guarantee Act 1988* listed species recorded on the site or considered to have a medium or greater likelihood to occur including:**
  - **Common Sandpiper**
  - **Gang Gang Cockatoo**
  - **icon species such as Wedge-tailed Eagle**
- **clarify and confirm roles and responsibilities for mitigation measures**
- **establish a precautionary mortality monitoring program for the life of the Project in consultation with Department of Energy, Environment and Climate Change (Environment Portfolio)**
- **include an annual review and revision process which considers the latest scientific understanding, the effectiveness of all mitigation measures and the cumulative impacts of other wind energy facilities.**

2. **Providing the further work in Recommendation 1 satisfactorily demonstrates that impacts can be appropriately managed, issue a Planning Pemit for the proposed development subject to conditions:**
   a) **Use the Panel's version of planning permit conditions in Appendix F as a starting point.**
   b) **Review the final planning permit conditions to ensure they:**
      - **apporiately respond to the findings of the additional assessments and documents provided, including any changes to the location and number of turbines**
      - **are consistent with *Writing Planning Permits*, May 2023 (Department of Transport and Planning).**

Appendix A Submitters to the Application

No.	Submitter	No.	Submitter
1	Tyna Murray	31	Louise Thomas
2	Noel Hicks	32	Christine Kirk
3	Zane Cameron	33	Helen Kirk
4	Colin & Adrian Cameron	34	Leon & Geraldine Golsworthy
5	Martin & Melina Grey	35	Garry & Merrill Lewis
6	Peter Rooke	36	Geoff Howley
7	Bob King	37	Martina Coen
8	Paul Lewis	38	Eric Cumming
9	Civil Aviation Safety Authority	39	International Crane Foundation
10	Tanya Burnett	40	Viva-Lyn Lenehan
11	Nigel Burnett	41	Peter & Wendy Williamson
12	Simone Neil	42	Greg Anders
13	Penny Timmins	43	Richard & Pam Walmsley
14	Alicia Summerfield-Owers	44	Michael Gilmour
15	Celia Morrison	45	Carol Gilmour
16	Jennifer Lewis	46	Save Our Surroundings (SOS)
17	Hamish Cumming	47	Angela Clifford
18	Jimmy Cochran	48	James & Rachael Krepp
19	Catherine Webster	49	John Broadbent
20	Heather Hicks	50	Robert Haworth
21	Michael Murphy	51	Sheridan Jones
22	Bryan McGlade	52	Vicki Jones
23	Jeanette Cumming	53	Sally Rounds Wareham
24	Anne Cochran	54	Lynette LaBlack
25	Sally Eyers	55	Leanne McDonald
26	Joy Howley	56	Jamie Wareham
27	Penelope Wallace	57	Lachlan Wareham
28	Mac's Hotel Mortlake	58	Corey Rounds
29	Justin Hicks	59	Dylan Wareham
30	Mark Wallace	60	Jenny Cumming

No.	Submitter	No.	Submitter
61	Caroline Johnson	93	Jacinta Walmsley
62	Liz & Craig Fowler	94	Lachlan Cumming
63	Dee Sanders	95	Tim Hill
64	Country Fire Authority	96	Lisa & Steve Parker
65	Jason & Lisa Lehmann	97	Rebecca Steel
66	Tracey Madden	98	Lisa Allen
67	Rob Cumming	99	Moyne Shire Council
68	Carolyn Emms Amy Elliott	100	Maureen Glazebrook
69	David Thorn	101	Samantha Spokes
70	Catherine Doulis	102	William, Yvonne & Nina Thomas
71	Lisette Mill	103	Tim Haworth
72	Environment Protection Authority	104	Glenelg Hopkins Catchment Management Authority
73	David Winterflood	105	Simone Lewis
74	Lorraine Vandeligt	106	Kristy Haworth
75	Scots Betta Home Living	107	Paul McSween
76	Elizabeth Hill	108	Mortlake Community Alliance Incorporated
77	Susan & Alexander Dennis	109	Margaret & Harold Blacker
78	Keppel Prince Engineering	110	Etta Payne
79	Gaye Haworth	111	Neil Blain
80	Jackie Grant	112	Sigrid Macleod
81	Bruce & Debbie Keen	113	Forest, Fire and Regions (BSW Planning)
82	David Farnhill	114	Anthony Tenace
83	Belinda Steel	**No.**	**Referral submissions**
84	Jacinta Coffey	R1	AusNet
85	Elizabeth Steel	R2	DELWP Environment
86	Rachael Moloney	R3	CFA
87	Wayne & Adele Krepp	R4	Head, Transport for Vic
88	Melinda Grant		
89	Rachael Steel		
90	Steve Saunders		
91	Geraldine Conheady		
92	C & A Goldsworthy		

Appendix B Parties to the Panel Hearing

Submitter	Represented by
Department of Transport and Planning	Kerry Greenfield, Michael Juttner and Rob Piccinin
Mount Fyans Wind Farm Pty Ltd	Morita Foley SC and Sean McArdle of Counsel instructed by Zachary Tyler and Courtney White of White & Case, who called expert evidence on: - Bushfire from Mark Potter and Graeme Taylor of Fire Risk Consultants - Traffic from Aaron Walley of Ratio - Landscape and Visual from Peter Haack of Peter Haack Consulting - Flora from Matthew Gibson of Biosis - Fauna from Mark Venosta of Biosis - Acoustics from Christophe Delaire of Marshall Day
Moyne Shire Council	Maria Marshall and Jeremy Wilson of Maddocks Lawyers, assisted by Amelia Hunter instructed by Michelle Grainger of Moyne Shire Council
Dept Energy, Environ & Climate Action - Forest, Fire and Regions – Barwon South West Region	Geoff Brooks
Mortlake Community Alliance Incorporated	Dominica Tannock of DST Legal. The submission included presentations from the following members of the Mortlake Community Alliance – David Allen, Anne Blacker, Peter Williamson, Leanne Mifsud, Gaye Hayworth, Lorraine Vandeligt (by video recording)
Nina Thomas	Dominica Tannock of DST Legal, who called expert evidence on noise from Les Huson of L Huson & Associates
Louse Thomas	
Neil Blane	
Hamish Cumming	
Susan Dennis	
Lachlan Cumming	Lachlan Cumming, who called expert evidence on noise from Matthew Dever of Noise Measurement Services
Lisa Parker	
Jennifer Lewis	
Viva-Lyn Lenehan	
Heather Hicks	

Appendix C Document list

No.	Date	Description	Provided by
1	9 Feb 23	Letter of Referral	Minister for Planning
2	"	Certificate of titles (December 2022)	"
3	"	Development plans and map book (December 2022)	"
4	"	Turbine and dwelling plan (August 2022)	"
5	"	Landowner consents (August 2022)	"
6	"	EES referral letter from Minister for Planning (September 2018)	"
7	"	Flora and fauna existing conditions (November 2022)	"
8	"	Targeted surveys and impact assessment (November 2022)	"
9	"	Brolga report (August 2022)	"
10	"	Southern Bent-wing Bat survey supplementary report (August 2018)	"
11	"	Landscape and visual impact assessment (August 2022)	"
12	"	Background noise report (July 2018)	"
13	"	Environmental noise assessment (August 2022)	"
14	"	Pre-construction noise assessment verification report (November 2022)	"
15	"	Traffic impact assessment (August 2022)	"
16	"	Electromagnetic Interference (EMI) assessment (August 2022)	"
17	"	Shadow Flicker Assessment (August 2022)	"
18	"	Aviation safety assessment (August 2022)	"
19	"	Bushfire assessment report (August 2022)	"
20	"	Community consultation report (August 2022)	"
21	"	Preliminary cultural heritage assessment (September 2018)	"
22	"	Geoheritage assessment (September 2018)	"
23	"	Surface water assessment (August 2022)	"
24	"	Hydrogeological assessment (August 2022)	"
25	"	Application for a Planning Permit Form	"
26	"	Before and After Photo Simulations	"
27	"	Department of Transport Consent	"

No.	Date	Description	Provided by
28	"	Environment Protection and Biodiversity Conservation Act (EPBC) Assessment Documentation	"
29	"	EPBC Appendix 1 EPBC 2019 8589 Assessment Scope	"
30	"	EPBC Appendix 2 MFWF Project Development Plan	"
31	"	EPBC Appendix 3 Mount Fyans Southern Bent-wing Bat Survey	"
32	"	EPBC Appendix 4 Mondilibi Hill Geology, Geomorphology, Eruptive History	"
33	"	EPBC Appendix 5 Southern Bent-wing Bat Roosting Habitat Assessment	"
34	"	EPBC Appendix 6 Microbat Acoustic Surveys Data	"
35	"	EPBC Appendix 7 Vegetation of the Study Area	"
36	"	EPBC Appendix 8 SBWB Adaptive Management Plan	"
37	"	Planning Report	"
38	13 Feb 23	Directions Hearing Notification Letter	Planning Panels Victoria (PPV)
39	14 Feb 23	Request for the Hearing to be recorded	Hamish Cumming
40	15 Feb 23	Letter to the Chief Panel Member	Moyne Shire Council (Council)
41	16 Feb 23	Directions Hearing Notification Letter (version 2)	PPV
42	24 Feb 23	Response to Councils letter dated 150223 (document 40)	Applicant
43	27 Feb 23	Email raising procedural matters	Neil Blain
44	27 Feb 23	Email raising procedural matters	Nina Thomas
45	27 Feb 23	Email raising procedural matters	Neil Blain
46	27 Feb 23	Email raising procedural matters	Nina Thomas
47	28 Feb 23	Confirmation of request to be heard details	Applicant
48	29 Feb 23	Email in relation to participation in the Hearing process	Environment Protection Authority (EPA)
49	1 Mar 23	Response to the EPA	PPV
50	1 Mar 23	Response to Panel request to attend the Directions Hearing	EPA
51	7 Mar 23	Directions and Timetable (version 1)	PPV
52	7 Mar 23	Email request for Proponent to provide further information	H Cumming
53	7 Mar 23	Email request for Proponent to provide further information	H Cumming
54	7 Mar 23	Response to request from Mr Cumming (document 51)	PPV

No.	Date	Description	Provided by
55	8 Mar 23	Email relating to planning permit	Viva-lyn Lenehan
56	8 Mar 23	Email relating to party representatives	V Lenehan
57	10 Mar 23	Government Gazette for C78moyn	Council
58	"	Schedule 1 to clause 37.01 Special Use Zone (C78moyn) - Mortlake Power Station	Council
59	"	Letter to Panel in response to Mr Cumming	Applicant
60	"	Minutes of Brolga Home Range Analysis Meeting (Friday 26th March 2010)	Applicant
61	"	Email in response to document 59	H Cumming
62	"	Partial migration of Brolga data (Veltheim et al.) (2022)	H Cumming
63	14 Mar 23	Nominated site inspection locations	Nina Thomas
64	14 Mar 23	Nominated site inspection locations	Mortlake Community Alliance (MCA)
65	16 Mar 23	Instructions for SharePoint access	Applicant
66	16 Mar 23	Email in response to request for further Brolga data	PPV
67	17 Mar 23	Letter requesting confidentiality for Cultural Heritage Management Plan (CHMP)	Applicant
67a	17 Mar 23	Confidential - Western Extension Area CHMP	"
67b	17 Mar 23	Western Extension Area CHMP Notice of Approval	"
68	17 Mar 23	Email regarding the circulation of tabled documents	PPV
69	17 Mar 23	Timetable and Distribution List (version 2)	PPV
70	21 Mar 23	Mortlake Power Station Environmental Management Plan	Applicant
71	23 Mar 23	Mortlake Power Station Development Plan	Applicant
72	23 Mar 23	Email in response to Applicant's request to file CHMP confidentially	PPV
73	23 Mar 23	Without prejudice draft permit conditions	Development Approvals
74	23 Mar 23	Email filing memorandum	Council
75	24 Mar 23	Memorandum – guidance on cumulative impacts of wind farm proposals	Council
76	24 Mar 23	Site inspection itinerary and map	Applicant
77	24 Mar 23	Submission	Development Approvals
78	27 Mar 23	Part A submission	Applicant
79	"	Draft Environmental Management Framework (EMF)	"

No.	Date	Description	Provided by
80	"	Expert witness statement of Christophe Delaire	"
81	"	Expert witness statement of Matthew Gibson	"
82	"	Expert witness statement of Mark Potter and Graeme Taylor	"
83	"	Expert witness statement of Peter Haack	"
84	"	Expert witness statement of Aaron Walley	"
85	"	Expert Witness Statement of Mark Venosta - Part A	"
86	"	Expert Witness Statement of Mark Venosta - Part B	"
87	"	Expert Witness Statement of Mark Venosta - Part C	"
88	"	Expert Witness Statement of Mark Venosta - Part D	"
89	"	Expert Witness Statement of Mark Venosta - Part C	"
90	29 Mar 23	Expert witness statement of Les Huson	MCA and Thomas Family
91	29 Mar 23	Western Extension Area CHMP (redacted version)	Applicant
92	29 Mar 23	Expert Witness Statement of Matthew Devers	Lachlan Cumming
93	30 Mar 23	Email requesting further material from Mr Haack	MCA
94	"	Email requesting Council circulate submissions used to inform its position	V Lenehan
94a	"	Letter from Moyne Shire Council to the Minister for Planning dated 6 February 2023	V Lenehan
95	"	Letter to Panel - Drone footage extension	Applicant
96	"	Response to extension request in respect of drone footage	PPV
97	"	Response to request of Ms Lenehan (document 94)	PPV
98	"	Request for 3D project imagery	MCA
99	"	Email in respect of landscape and visual impact assessment reference links and 3D project imagery	PPV
100	"	Letter regarding 3D project imagery	Applicant
101	31 Mar 23	Timetable (version 3) and Zoom webinar guide	PPV
102	"	Further email regarding submissions collected by Council	V Lenehan
103	"	Applicant version of Without Prejudice Draft Permit Conditions	Applicant
104	"	Part B Submission	Applicant
105	"	Response to document 102	PPV
106	"	Response to 3D imagery request	PPV
107	"	Submission	DEECA

No.	Date	Description	Provided by
107a	"	Letter to Development Approvals in respect of permit application PA1800406	DEECA
108	"	Presentation of Graeme Taylor and Mark Potter	Applicant
109	3 Apr 23	Email requesting Panel make directions in respect of cumulative impacts on Brolga	HCumming
109a	"	Brolga data (Attachment to document 109)	H Cumming
110	"	Email responding to request for further material from Mr Haack (document 93)	Applicant
111	"	Exploring community acceptance of rural wind farms in Australia Exploring community acceptance of rural wind farms in Australia: a snapshot, CSIRO (2012)	"
112	"	Berrybank Wind Farm Landscape and Visual Impact Assessment, Urbis (2009)	"
113	"	Lal Lal Wind Farm Landscape and Visual Impacts Assessment, Environmental Resources Management (2008)	"
114	"	Community Attitudes to Wind Farms in New South Wales, Environment, Climate Change and Water (NSW) (2010)	"
115	4 Apr 23	Email to the EPA dated 23 December 2022	V Lenehan
116	"	Letter from Jane Homewood (DELWP) dated 23 December 2021	V Lenehan
117	"	Email advising Council chambers will be made available for parties to view the Hearing	Council
118	"	Presentation of Peter Haack	Applicant
119	"	Presentation of Aaron Walley	Applicant
120	"	Response to Mr Cumming's email (document 109)	DEECA
121	5 Apr 23	Assessing the cumulative landscape and visual impact of onshore wind energy developments, NatureScot (2021)	Council
122	"	Map of proposed and approved wind energy facilities in Moyne Shire	Council
124	"	Letter with links to drone footage	Applicant
124a	"	Transmission line drone footage	"
124b	"	Tower view drone footage	"
124c	"	On-site substation drone footage	"
124d	"	Castle Carey Road drone footage	"
124e	"	Presentation of Matthew Gibson	"
125	6 Apr 23	Email filing the South West Victoria Landscape Assessment Study (SWVLAS)	"

No.	Date	Description	Provided by
125a	"	SWVLAS - Regional Overview Report	"
125b	"	SWVLAS - Significant Landscapes of South West Victoria	"
125c	"	SWVLAS - Significant Views Overview Part 1	"
125d	"	SWVLAS - Significant Views Overview Part-2	"
125e	"	SWVLAS - Significant Views Overview Part 3	"
125f	"	SWVLAS - Significant Views Overview Part 4	"
125g	"	SWVLAS - Landscape Character Overview	"
125h	"	SWVLAS - Consultation and Community Values Report	"
126	"	Response to various procedural matters	DTP
127	"	Comments on the applicant's Without Prejudice Draft Conditions (document 103)	DTP
128	"	Comments on DEECA'S Without Prejudice Draft Permit Conditions (document 107)	DTP
129	"	Bird, J and Joyce, B. (2006), *The National Trust and landscape heritage in Victoria: recent assessments of volcanic landscapes in Western Victoria*, ASEG Extended Abstracts, 1, 1-4	Nina Thomas
130	"	Drone footage index	Applicant
131	"	Email outlining wind farms to be referred to during cross-examination of Mr Delaire	MCA and Nina Thomas
132	11 Apr 23	Mortlake Wind Farm CEC Meeting Presentation	V Lenehan
133	"	Australian Acoustical Society Code of Ethics	V Lenehan
134	"	Email requesting information on River Red Gums earmarked for removal	Nina Thomas
135	"	Email regarding the unavailability of Mr Venosta	Applicant
136	"	Email in response to the unavailability of Mr Venosta	Susan Dennis
137	"	Email in response to the unavailability of Mr Venosta	H Cumming
138	"	Presentation of Mr Delaire	Applicant
139	"	Mt Fyans Wind Farm EES Initial Submission Preliminary Noise Report	V Lenehan
140	12 Apr 23	Response to request for information about River Red Gums earmarked for removal (document 134)	Applicant
141	"	Email raising procedural matters	Neil Blain
142	"	Further response regarding River Red Gums	Nina Thomas
143	"	Environment Protection Regulations 2021 (effective 1 February 2023)	Applicant

No.	Date	Description	Provided by
144	"	EPA wind farm noise guidelines - accessed and downloaded 12 April 2023	Applicant
145	"	Panel Book of documents referred to during cross-examination of Mr Delaire	MCA and Thomas Family
146	"	S Chapman and F Crichton, Wind Turbine Syndrome: A Communicated Disease (extract)	MCA and Thomas Family
147	"	Podcast Transcript of Proceedings - Fairbrother & Ors v Bald Hills Wind Farm Pty Ltd	MCA and Nina Thomas
148	13 Apr 23	Map of project site showing the names of public roads	Applicant
149	"	Evidence statement of Les Huson	Nina Thomas
150	"	Map of transmission and distribution lines	Applicant
151	"	Consolidated ERS prepared by PA dated 29 March 2022	"
152	"	Publication 865.13 Environmental auditor guidelines for appointment and conduct	"
153	"	Publication 1992 - Guide to the Environment Reference Standard	"
154	"	Naroghid Wind Farm Pty Ltd v Minister for Planning [2019] VCAT 800	"
155	"	Uren v Bald Hills Wind Farm Pty Ltd [2022] VSC 145 (25 March 2022)	"
156	17 Apr 23	Position on operational wind turbine noise conditions 170423	DTP
157	"	Request for clarification of terminology used by the Applicant	V Lenehan
158	"	Letter to Mr Egan of the Victorian Government Solicitor's Office regarding subpoena (Fairbrother and ors v Bald Hills Wind Farm Pty Ltd)	MCA and Thomas Family
159	"	Email – Dominica Tannock to Bruce Dawson regarding engagement of an Environmental Auditor	MCA and Thomas Family
160	"	Email – Dominica Tannock to Doris Pallozzi regarding engagement of an Environmental Auditor	MCA and Thomas Family
161	18 Apr 23	Marshall Day Acoustics technical response to Bald Hills Wind Farm Victorian Supreme Court Decision	Applicant
162	"	Query relating to document 161 and material referred to by Mr Delaire during cross-examination	MCA and Thomas Family
163	"	Email filing expert witness responses to questions on notice	Applicant
163a	"	Lothian, A. (2008), 'Visual Impacts Assessment of some developments in South Australia', Australian Planner, 45, 35-39	Applicant

No.	Date	Description	Provided by
163b	"	WTG blade vehicle swept path assessment for the alternate route option from Port of Geelong prepared by Mr Walley	Applicant
164	"	Timetable (version 4)	PPV
165	19 Apr 23	Response to questions on notice	DEECA
166	19 Apr 23	Clarification of terminology (response to document 157)	Applicant
167	20 Apr 23	Part C submission	Applicant
168	"	GG2021S245 - Victorian Government Gazette	V Lenehan
169	"	Naroghid Wind Farm - VCAT Hearing P1648/2018 *Note: Duplicate document 154*	V Lenehan
170	"	Presentation of Matthew Dever	L Cumming
171	21 Apr 23	Email regarding noise monitoring report	Nina Thomas
171a	"	583 Mortlake-Ararat Rd Mortlake – noise monitoring report	Nina Thomas
172	"	Query relating to Amendment VC212	V Lenehan
173	"	Memo - consideration of high amenity noise limit at u163 prepared by Marshal Day Acoustics	Applicant
174	"	Email requesting background noise data	MCA and Thomas Family
175	22 Apr 23	Various requests of the Applicant	V Lenehan
176	26 Apr 23	Email requesting further background noise data	MCA and Thomas Family
177	27 Apr 23	Questions for the Applicant relating to noise	PPV
178	"	Assessing Amplitude Modulation document (author unknown)	MCA and Thomas Family
179	"	Email correspondence with Thomas Family and Les Huson	"
180	"	Barlas, E et al (2016) *Wind Turbine Noise Propagation Modelling: An Unsteady Approach*, Journal of Physics: Conference Series 753, 1-11	"
181	1 Apr 23	Email - follow up to noise data information request (document 174)	"
182	1 Apr 23	Response to information requests sort by Ms Lenehan	PPV
183	1 Apr 23	World Health Organisation Guidelines for Community Noise 1999	Applicant
184	3 Apr 23	Response to information request from MCA and Nina Thomas (documents 174)	Applicant
185	5 Apr 23	Further information request from Ms Tannock and Panel response	PPV
186	9 May 23	Various information requests relating to Brolga	V Lenehan

No.	Date	Description	Provided by
187	9 May 23	Information requests relating to Brolga	H Cumming
188	10 May 23	Response to various information requests from parties	PPV
189	11 May 23	Memo - response to Panel questions prepared by Marshal Day Acoustics	Applicant
190	"	Raw background data - U17 LA90 and 79 m wind speed	"
191	"	Raw background data - U31 LA90 and 79 m wind speed	"
192	"	Raw background data - U47 LA90 and 79 m wind speed	"
193	"	Response to MDA memo and request for further information	MCA and Thomas Family
194	"	Directions – further information relating to document 193	PPV
195	"	Commentary regarding raw noise data request from Mr Huson	MCA and Thomas Family
196	"	Emails relating to memo prepared by MDA	V Lenehan
197	"	Email regarding future conduct of cross examination	Panel
198	12 May 23	Further information requests relating to noise	V Lenehan
199	12 May 23	Response to information request relating to noise (document 198)	Panel
200	12 May 23	Inka Veltheim 2011-2012 GPS Tracking Data Graphed	V Lenehan
201	18 May 23	Responses from Mr Delaire to Panel questions	Applicant
202	19 May 23	Further request for information relating to memo's prepared by Mr Delaire	Nina Thomas
203	23 May 23	Brolga Landowner Survey Area	Applicant
203a	"	Mortlake South and East Wind Farms Flora and Fauna Assessment Attachment D - part 1	"
203b	"	Mortlake South and East Wind Farms Flora and Fauna Assessment Attachment D - part 2	"
203c	"	Mortlake South and East Wind Farms Flora and Fauna Assessment Attachment D - part 3	"
203d	"	Mortlake South and East Wind Farms Flora and Fauna Assessment Attachment D - part 4	"
204	"	Further information sought from Mr Delaire	Panel
205	24 May 23	Further information sought from the Applicant regarding Appendix H	Panel
206	25 May 23	Further email regarding request for noise data from Mr Delaire	Nina Thomas
207	25 May 23	Directions relating to material provided by Mr Delaire	Panel
208	26 May 23	Veltheim et al 2019 - Pre-fledged Brolga chicks	V Lenehan

No.	Date	Description	Provided by
209	"	Veltheim et al. - 2022 - Partial migration of Brolgas	"
210	"	Brolga Guidelines (2011)	"
211	"	South West Victoria Brolga Research Project	"
212	"	Flora and Fauna Guarantee Act Action Statement (Brolga) 2011 - Dept of Sustainability and Environment	"
213	"	Mr Venosta - Fauna - addendum statement	Applicant
214	"	Mr Venosta - Fauna Presentation	"
215	"	Response to Panel directions relating to the provision of background noise data	"
216	"	Various emails regarding noise	"
217	"	Request for further information of the Applicant regarding noise	Panel
218	29 May 23	Brolga video - Damien Clifford	MCA and Thomas Family
219	"	Thomas Family statement on Landowner Survey	Thomas Family
220	"	Lisa Parker statement on Landowner Survey	MCA
221	"	Leanne Misfud statement on Landowner Survey	MCA
222	"	Hamish Cumming statement on Landowner Survey	MCA
223	"	Adele Krepp statement of Landowner Survey	MCA
224	"	Email sent to the Applicant on Saturday 27 May regarding noise	MCA and Thomas Family
225	"	Email to Ms Tannock requesting MCA member statements regarding Biosis survey	Applicant
226	"	Email filing map of landowners not included in Biosis survey	MCA and Thomas Family
226a		Landowners not surveyed	MCA and Thomas Family
227	"	Landowners not surveyed by address (redacted)	MCA and Thomas Family
228	"	Austral Ecology - 2022 - Bennett - Curtailment as a successful method for reducing bat mortality at a southern Australian	Council
229	"	Dundonnell Wind Farm Bat and Bird losses summary to March 2023	Council
230	"	Malony et al 2019 – Investigation of Existing Post-construction Monitoring at Victorian Wind Farms	Council
231	"	Memo – provided to Ms Tannock on 26 May 2023 in response to request for raw noise data	Applicant

No.	Date	Description	Provided by
232	"	Brolga Landowner Survey (redacted) • 232a - 287 Boundary Road, Kolora • 232b - 290 Bryan Olynn Road, Purnim • 232c - 440 Woorndoo-Darlington Road • 232d - 477 Hamilton Highway • 232e - 599 Woodcutters Lane (property of interest 767 Woorndoo-Darlington Rd) • 232f - 680 Woorndoo-Darlington Road • 232g - 916 Mortlake-Ararat Road. • 232h - 1492 Ararat Rd, Mortlake VIC, 3272 • 232i - 2676 Mortlake-Ararat Road • 232j - Boorook Hill, 1731, Mortlake, Ararat Road Part 2 • 232k - Boorook Hill, 1731, Mortlake, Ararat Road • 232l – Brolga Survey page 3, Row 1 • 232m - Brolga Survey page 4, Row 1 • 232n - Brolga Survey page 5, Row 1 • 232o - Brolga Survey page 18, Row 5 • 232p - Brolga Survey page 19, Row 6 • 232q - Springfield property • 232r - Woorndoo-Dundonnell Rd	Applicant
233	30 May 23	Inka Veltheim raw Brolga data provided to DELWP	MCA and Thomas Family
234	"	Inka Veltheim raw Brolga data provided to DELWP (Google Earth KML file)	"
235	"	Email filing letters from landowners regarding Brolga landowner survey	"
235a	"	Letter regarding Brolga Landowner Survey – Anne Blacker	"
235b	"	Letter regarding Brolga Landowner Survey – Gaye and Tim Haworth	"
236	"	Email - Biosis and Interim Brolga Guidelines	V Lenehan
237	"	Email filing u163 LA90 and 79m wind speed data	Applicant
237a	"	u163 LA90 and 79 m wind speed	"
237b	"	Email providing u163 LA90 and 79 m wind speed to Ms Tannock	"
238	"	Email requesting clarification regarding information requests TD207 and TD217	"
239	"	Submission	Council
239a	"	Moyne Shire Council Position Statement	"
239b	"	Moyne Energy Projects Map March 2023	"

No.	Date	Description	Provided by
239c	"	VicGrid - Coordinated transmission for offshore wind - Roadmap	"
239d	"	Naroghid Wind Farm Pty Ltd v Minister for Planning [2019] VCAT 800 *Note: Duplicate document 154*	"
239e	"	Ramjee v Manningham CC (Red Dot) [2020] VCAT	"
240	"	Email response to information request from Mr Delaire	Applicant
241	"	Email responding to Panel question of 23 May	"
242	"	Email filing amended transmission line route map	"
242a	"	Amended River Red Gum removal plan	"
243	"	Dwellings within 1km distance from project boundary plan	"
244	31 May 23	Part C Submission (part 2)	"
245	"	PA1800406 Without Prejudice Draft Conditions - Applicant version Part C Submissions	"
246	"	Responses to requests	"
247	"	Part C Submission (part 3)	"
248	"	Email filing document 248a	"
248a	"	Letter from the Applicant to Department of Defence dated 2 March 23	"
249	"	Submission (Ecology addendum)	Council
250	"	Submission addendum	DEECA
251	"	PA1800406 Without Prejudice Draft Conditions - DEECA comments on Applicant version (document 245) (30 May 2023)	DEECA
252	2 June 23	Submissions (part 1)	MCA and Thomas Family
252a	"	Supporting documents	"
253	"	Les Huson letter of 2 June 2023 analysing raw background data of u163	"
253a	"	Emails - freedom of information request for documents relating to noise at Cape Bridgewater Wind Farm	"
254	"	Submission (part 1)	V Lenehan
254a	"	VC212 - Victoria Planning Provisions - Highlighted	"
254b	"	Griffin, D & Delaire, C (2013) *Methods of identifying extraneous noise during unattended noise measurements*, 20th International Congress on Sound and Vibration, 1 - 8	"
254c	"	Educating the Lawyers - Lesson 12 The Tonality of Turbines	"

No.	Date	Description	Provided by
254d	"	Educating the Lawyers - Lesson 9 Data Points are Full of Noise	"
254e	"	Educating the Lawyers - Lesson 13 Fudging the Wind Data	"
254f	"	Educating the Lawyers - Lesson 14 Bullseye Maps are Misleading and Deceptive	"
254g	"	Educating the Lawyers - Our Brolgas are not for Wind Companies to Kill Off	"
254h	"	Letter – response from Dr Homewood (DELWP) to letter dated 7 December 2021 regarding suspicious activity and wetlands in the Western District	"
254i	"	Highlighted – DEECA response to questions on notice	"
255	"	Email regarding without prejudice draft permit conditions	DTP
256	"	Email requesting information from Council regarding South Road	Panel
257	"	Email outlining MCA speakers	MCA
258	"	Email - without prejudice versions of draft permit and panel drafting discussion	Panel
259	5 June 23	Submission (part 2)	V Lenehan
260	"	Submission (part 3)	V Lenehan
261	"	WHO Night Guidelines	V Lenehan
262	"	Submission (part 2)	MCA and Thomas Family
262a	"	Supporting documents	MCA and Thomas Family
263	"	Submission	Susan Dennis
264	"	Submission	Heather Hicks
265	"	Submission	Neil Blain
265a	"	Media article – The Age (2017) 'Multimillion-dollar Sorrento ferry terminal upgrade plan leaves locals worried'	"
265b	"	Moyne Shire Council meeting minutes 12 August 2021	"
265c	"	Mortlake Helipad Agreement	"
265d	"	Mortlake Recreation Reserve meeting notes	"
265e	"	Mortlake Recreation Reserve Committee Minutes 2020 to Mar 2021	"
265f	"	Moyne Shire Council July meeting minutes	"
265g	"	LinkedIn Profile	"
266	"	Submission (part A)	H Cumming

No.	Date	Description	Provided by
266a		Index list of supporting material	H Cumming
266b		Folder of supporting material (178 documents)	H Cumming
267	6 June 23	Email filing Woolnorth Renewables information relating to transmission line	MCA and Thomas Family
268	"	Letter regarding Brolga Landowner Survey dated 25 May 23	L Cumming
269	"	Bald Hills Wind Farm proceeding – Day 2 transcript extract	MCA and Nina Thomas
270	"	Bald Hills Wind Farm proceeding – Day 2 transcript extract	MCA and Nina Thomas
271	"	Pages from FOI documents - 2 - AEIC emails to Glenelg Shire Council	MCA and Nina Thomas
272	"	Wind turbine noise diagram	L Cumming
273	"	Submission on noise	MCA and Nina Thomas
274	"	Comments on Applicant Part C without prejudice draft permit conditions and DEECA comments	DTP
275	7 June 23	Comments on Applicants Part C without prejudice draft permit conditions	Council
276	"	Presentation	Louise Thomas
276a	"	Dundonnell Wind Farm Inquiry Report	"
276b	"	Mortlake Dispatch 20 Sept 2018 page 1 and 3	"
276c	"	Warrnambool standard article 19 Sept 2018 p3	"
277	"	Presentation Part B	H Cumming
278	"	Submission	L Cumming
279	"	Brolga buffer maps	Applicant
280	"	Turbines within 1km Brolga protection buffer data	Applicant
281	"	Updated submission	V Lenehan
282	"	Correspondence with the EPA - Wind Turbine Noise Regulations and Macarthur Wind Farm Noise Pollution	V Lenehan
283	"	Questions for Ms Parker	Panel
284	"	David Allen speaking notes	MCA
284a	"	Member presentations and community objections (confidential)	"
285	"	Lorraine Vandeligt speaking notes	"
286	"	Peter Williamson speaking notes	"
287	"	Anne Blacker speaking notes	"

No.	Date	Description	Provided by
288	"	Comments on without prejudice draft permit conditions	"
289	8 June 23	Without prejudice draft permit conditions	Applicant
290	"	Native vegetation removal report	Applicant
291	"	Speaker notes	Louise Thomas
292	"	CHMP Notice of Approval	Applicant
293	"	Closing submission	"
293a	"	Smales, I and Potts, J 2014. Peer review of investigation of effects of wind farms on Sandhill Cranes in Texas.	"
293b	"	Pasquale v Golden Plains SC [2006] VCAT 1682	"
293c	"	The University of Melbourne v Minister for Planning (includes Summary) (Red Dot) [2011] VCAT 469	"
293d	"	House of Peace v Bankstown City Council [2002] NSWCA 44	"
294	"	Response to Ms Tannocks request to file documents on 7 June 2023	Panel
295	"	Response to Panel questions	Lisa Parker
296	"	Closing submission notes	Council
296a	"	Plan of leased unused roads	"
296b	"	Images of South Road	"
297	"	Without prejudice draft conditions - updated version of document 275	"
298	"	Email filing closing comments	DTP
299	"	Closing comments	DTP
300	9 June 23	Email from CFA accepting permit conditions	Applicant
301	9 June 23	Approved CHMP (confidential)	Applicant
302	14 June 23	Without prejudice draft permit conditions – Applicant final version	Applicant

Appendix D Planning context

D:1 Legislative framework

Victorian government legislation and planning policy on climate change, renewable energy, noise, biodiversity protection, water, road management and catchment and land protection apply to the project.

The legislation referred to in this report is Victorian legislation unless indicated otherwise.

i) Planning and Environment Act

The PE Act provides a framework for planning and regulating the use, development and protection of land in Victoria. It sets out the procedures for assessing and determining planning permit applications. Section 4 of the PE Act contains the objectives of planning in Victoria that guide all planning decisions (including decisions on whether to issue a planning permit), including:

- to provide for the fair, orderly, economic and sustainable use, and development of land
- to provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity
- to secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria
- to conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value
- to balance the present and future interests of all Victorians
- to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land.

The matters a Responsible Authority must consider when deciding whether to grant a planning permit include the planning objectives set out above and a range of other matters in s60(1).

ii) Climate change

The *Climate Change Act 2017* provides a foundation to manage climate change risks and support Victoria's transition to a net zero emissions climate resilient economy.

Section 20 of the Act requires the Victorian Government to ensure that its decisions appropriately take climate change into account:

> The Government of Victoria will endeavour to ensure that any decision made by the Government and any policy, program or process developed or implemented by the Government appropriately takes account of climate change if it is relevant by having regard to the policy objectives and the guiding principles.

The policy objectives are set out in section 22, along with six guiding principles.

Victoria's *Climate Change Framework*, prepared under the Climate Change Act, identifies four pillars that underpin the transition to a climate resilient and net zero emissions Victoria by 2050. The pillar relevant to the Project is:

> Move to a clean electricity supply by increasing renewable energy generation.

iii) Environment Protection Act 2017

The *Environment Protection Act 2017* (EP Act):

- does not specifically address impacts of wind energy facilities
- details high level requirements which enable the development of specific mechanisms to manage wind energy facility impacts such as turbine noise.

In the EP Act the relevant parts that could be used to address noise from construction or operation of a wind energy facility are:

Chapter 3 – Duties relating to environment protection:

Part 3.2 - General environmental duty

Introduces the requirement of general environmental duty, which requires all industries and individuals in Victoria who are "engaged in an activity that may give rise to risks of harm to human health or the environment from pollution of waste must minimise those risks, so far as reasonably practicable".

Chapter 5 – Environmental reference standards, compliance codes and position statements:

Part 5.2 – Environmental reference standards

An environment reference Standard can be made to be used to assess and report on environmental conditions in the whole or part of the state of Victoria.

An environmental reference Standard may specify indicators and objectives to be used to measure whether an environmental value specified in the reference Standard is being achieved or maintained.

Chapter 8 – Better environmental plans, environmental audits and other matters:

Part 8.3 – Environmental audit system

Division 1 details the roles and responsibilities of Environment Auditors, which are required to check the accuracy and the compliance of the turbine noise emissions compared to the permitted noise limits from the wind energy facility.

iv) Environment Protection Regulations 2021

The *Environment Protection Regulations 2021,* as amended includes in Part 5.3, Division 5 – Wind turbine noise, with regulations:

- 131A – Wind turbine noise agreements between the facility owner/operator and the relevant landowner as to the noise limits that will apply to the land
- 131B – The relevant standard that will apply to the wind energy facility; in this regulation the standard is the New Zealand Standard 6808:2010 (NZ Noise Standard). The Noise limit is to be determined in accordance with the noise standard. This regulation also allows the use of alternative monitoring points (other than for a post-construction noise assessment under regulation 131D).
- 131C – Duties of the wind energy facility to ensure that the noise from the facility complies with the NZ Noise Standard
- 131D – Requirements for post-construction noise assessments in accordance with the NZ Noise Standard
- 131E – Noise management plan to be developed by the owner/operator of the facility
- 131F – Preparation of an annual statement
- 131G – Wind turbine noise monitoring within 3 months of the fifth anniversary and every subsequent 5 years (from 1 January 2024)
- 131H – Definition of unreasonable noise

- 131I – Functions of environmental auditors.

Regulation 131CA requires that the operator of the facility "*must ensure that the wind turbine noise from the facility complies with the noise limit for that facility*".

Regulation 131 H deems wind turbine noise as being unreasonable if the noise limit is exceeded. While other sections of the regulation define aggravated noise from residential activities, commercial, industry and trade activities and entertainment venues, wind turbine noise is not considered aggravated.

Regulation 164 in Chapter 6 sets out the functions of environmental auditors, and includes verification duties in relation to wind energy facility post-construction noise assessments and review of noise management plans.

v) Public Health and Wellbeing Act 2008

The Public Health and Wellbeing Act 2008 was amended on 9 February 2021 to remove the overlap of wind farm noise regulation by excluding wind farm turbine noise from nuisance provisions.

vi) Environment Protection and Biodiversity Conservation Act

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Commonwealth Government's principal environmental protection and biodiversity conservation legislation. It provides the legal framework for the protection of MNES, Ramsar wetlands, listed nationally threatened species and listed migratory species.

Significant impact guidelines under the EPBC Act provide overarching guidelines on determining whether an action is likely to have a significant impact on a matter protected under national environmental law. The relevant guidelines for this Project are *Matters of National Environmental Significance: Significant impact guidelines 1.1 (Department of Environment, 2013).*

The guidelines define a 'significant impact' as *"an impact which is important, notable, or of consequence, having regard to its context or intensity*". To be considered 'likely' it is *"sufficient if a significant impact on the environment is a real or not remote chance or possibility"*.

The guidelines embody the precautionary principle:

> If there is a scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment.

Significant impact criteria are provided to assist in determining whether potential impacts of an activity are likely to be significant on a matter of national environmental significance. The criteria are different according to the conservation category of the MNES (for example, critically endangered or vulnerable).

vii) Flora and Fauna Guarantee Act

The *Flora and Fauna Guarantee Act 1988* (FFG Act) provides for the conservation of Victoria's native flora and fauna. It includes objectives at section 4 to:

- guarantee that native flora and fauna can persist and improve in the wild, retaining the ability to adapt to environmental change

- prevent species and communities from becoming threatened and to recover threatened species and communities
- protect, conserve, restore and enhance biodiversity including flora, fauna and their habitats, genetic diversity, ecological communities and processes
- identify and mitigate the impacts of potentially threatening processes to address underlying causes of biodiversity decline
- ensure use of biodiversity is ecologically sustainable
- identify and conserve areas of critical habitat.

viii) Water, biodiversity and catchment protection

The *Water Act 1989* provides the legal framework for managing Victoria's water resources and applies to management of surface water and groundwater resources. The Planning Application Report for the Project noted it will require a significant volume of water for construction, and fire management and a lesser volume of water for operation. Licences are required under the Water Act to extract water from a waterway.

The *Catchment and Land Protection Act 1994* requires land owners (or a third party to whom responsibilities have been legally transferred) to take all reasonable steps on their land to avoid causing or contributing to land degradation that causes or may cause damage to land of another land owner. This includes controlling noxious weed species.

The purpose of the *Flora and Fauna Guarantee Act 1988* (FFG Act) is to enable and promote the conservation and sustainable management of Victoria's native flora and fauna. Threatened species and threatened ecological communities exist along parts of some of the road sides used to access the Project site. Where removal of FFG Act species is required on public land, a permit is required to take listed species.

ix) Aboriginal Heritage Act 2006

The *Aboriginal Heritage Act 2006* and associated *Aboriginal Heritage Regulations 2007* provides for the protection of Aboriginal cultural heritage in Victoria. The Act and Regulations set out requirements relating to the requirement for, and the processes associated with the preparation and approval of a Cultural Heritage Management Plan (CHMP) prior to any works commencing. The relationship with the legislation and regulations is set out in chapter D:6 of this Appendix.

x) Road Management Act 2004

The *Road Management Act 2004* sets out the regulations and requirements regarding arterial roads and working within road reserves. It requires consent to undertake works on roads. The Project will use the Hamilton Highway - west of Six Mile Lane (for construction only) and Mortlake-Ararat Road. The *Road Management Act 2004* Code of practices are set out under the Act to provide guidance for road authorities, works and infrastructure managers.

D:2 Planning policy framework

The Planning Policy Framework (PPF) for the permit applications is set out in the Moyne Planning Scheme.

The PPF establishes planning principles to guide decisions on planning applications across Victoria.

The relevant policies of the PPF encourage wind energy facilities to be in suitable locations that do not result in unacceptable impacts on critical environmental, cultural or landscape values.

Significant state and regional policies are outlined below. The full list of relevant policy is included in the Applicant's Planning Report, submission of DTP and the Applicant's Part A submission.

i) Planning Policy Framework

Clause 11 (Settlement):

- **Clause 11.01-1S (Settlement)** seeks to promote the sustainable growth and development of Victoria and deliver choice and opportunity for all Victorians through a network of settlements. Strategies include contributing to net zero gas emissions through renewable energy infrastructure and not compromising areas of future urban expansion
- **Clause 11.01-1R (Settlement – Great South Coast)** identifies Mortlake as a district town where local communities, services and industry are supported and promotes active and attractive towns and supporting economic opportunities. The Project land is located within the *Great South Coast Regional Growth Plan,* which is shown as an area of agricultural production, Mortlake as accommodating medium growth and adjacent to the 500kV electricity transmission line
- **Clause 11.02-1S (Supply of urban land Managing growth)** seeks to maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry

Clause 12 (Environmental and Landscape Values):

- **Clause 12.01-1S (Protection of biodiversity)** seeks to protect and enhance Victoria's biodiversity. It seeks to ensure that decision-making considers the impacts of land use and development on Victoria's biodiversity, including consideration of cumulative impacts and the fragmentation of habitat and avoiding impacts of land use and development on important areas of biodiversity
- **Clause 12.01-2S (Native vegetation management)** seeks to ensure there is no net loss of biodiversity from the removal, destruction or lopping of native vegetation
- **Clause 12.03-1S (River and riparian corridors, waterways, lakes, wetlands and billabongs)** outlines the need to protect the environmental, cultural and landscape values of all water bodies and wetlands
- **Clause 12.05-2S (Landscapes)** seeks to protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments

Clause 13 (Environmental Risks and Amenity):

- **Clause 13.01 – (Climate change impacts)** seeks to strengthen the resilience and safety of communities by adopting a best practice environmental management and risk management approach
- **Clause 13.01-1S (Natural hazards and climate change)** seeks to minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning
- **Clause 13.02-1S (Bushfire planning**) seeks to strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life
- **Clause 13.05-1S (Noise management)** seeks to manage the noise effects on sensitive land uses (residential use, child care centre, school, education centre, residential aged care centre or hospital), ensuring that noise impacts on community amenity and human health is managed and the impacts on human health of occupants is minimised through a range of techniques including land use separation as appropriate to the land use function and character of the area

- **Clause 13.07-1S (Land use compatibility)** seeks to safeguard community amenity, human health and safety while facilitating appropriate commercial, industrial and other land uses with potential off-site effects

Clause 14 (Natural Resource Management):

- **Clause 14.01-1S (Protection of agricultural land)** seeks to ensure that strategically important agricultural and primary production land is protected from incompatible land uses.
- **Clause 14.01-2S (Sustainable agricultural land use)** seeks to support innovative and sustainable approaches to agriculture, encourage diversification and value-adding of agriculture, support enhancement of appropriate infrastructure
- **Clause 14.02-1S (Catchment planning and management)** seeks to assist the protection and restoration of catchments, water bodies, groundwater and the marine environment including ensuring that development at or near waterways protects the environmental qualities of waterways and their instream uses. This includes the provision of appropriate setbacks from waterways
- **Clause 14.02-2S (Water quality)** seeks to ensure that land use activities are sited and designed to minimise discharge to waterways and to protect the quality of surface water and groundwater

Clause 15 (Built Environment and Heritage):

- **Clause 15.01-6S (Design for rural areas)** seeks to ensure that new development respects valued areas of rural character and minimises visual impacts on surrounding natural scenery
- **Clause 15.03-1S (Heritage conservation)** seeks to ensure the conservation of places of natural and cultural heritage
- **Clause 15.03-2S (Aboriginal cultural heritage)** aims to protect and conserve places of Aboriginal cultural heritage in accordance with the requirements of the Aboriginal Heritage Act 2006

Clause 17 (Economic Development):

- **Clause 17.01-1S (Diversified economy)** seeks to facilitate growth in a range of employment sectors and support rural economies to grow and diversify

Clause 18 (Transport):

- **Clause 18.01-2S (Transport system)** seeks to plan or regulate for new land uses to avoid detriment to and where possible enhance the service, safety and amenity desirable for that transport route (amongst a range other strategies)
- **Clause 18.02-7S (Airports and airfields)** seeks to, amongst a range of matters, ensure that appropriate planning is put in place to ensure that new use or development does not prejudice the safety or efficiency of airfields

Clause 19 (Infrastructure):

- **19.01-1S (Energy supply)** seeks to facilitate appropriate development of energy supply infrastructure through strategies including:
  - supporting development of energy generation, storage, transmission, and distribution infrastructure to transition to a low-carbon economy
  - ensuring energy generation, storage, transmission and distribution infrastructure and projects are resilient to the impacts of climate change

- minimise land use conflicts and that take advantage of existing resources and infrastructure networks
- facilitate energy infrastructure projects that help diversify local economies and improve sustainability and social outcomes

Policy guidelines include the consideration of:

- The long-term emissions reduction target specified in section 6 of Part 2 of the Climate Change Act 2017.
- Interim emissions reduction targets determined under Division 2 of Part 2 of the Climate Change Act 2017.
- Adaptation action plans prepared under Division 2 of Part 5 of the Climate Change Act 2017.

- **19.01-2S (Renewable energy)** seeks to promote and facilitate the provision of renewable energy in appropriate locations including areas with consistently strong winds through appropriate design, consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.

  Policy guidelines include:
  - WEF Guidelines
  - Victoria's Climate Change Strategy (Department of Environment, Land, Water and Planning, May 2021)
  - Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria (Department of Environment, Land, Water and Planning, July 2021)
- **19.01-2R (Renewable energy – Great South Coast)** seeks to plan for and sustainably manage the cumulative impacts of alternative energy development

ii) Clause 21 (the Municipal Strategic Statement)

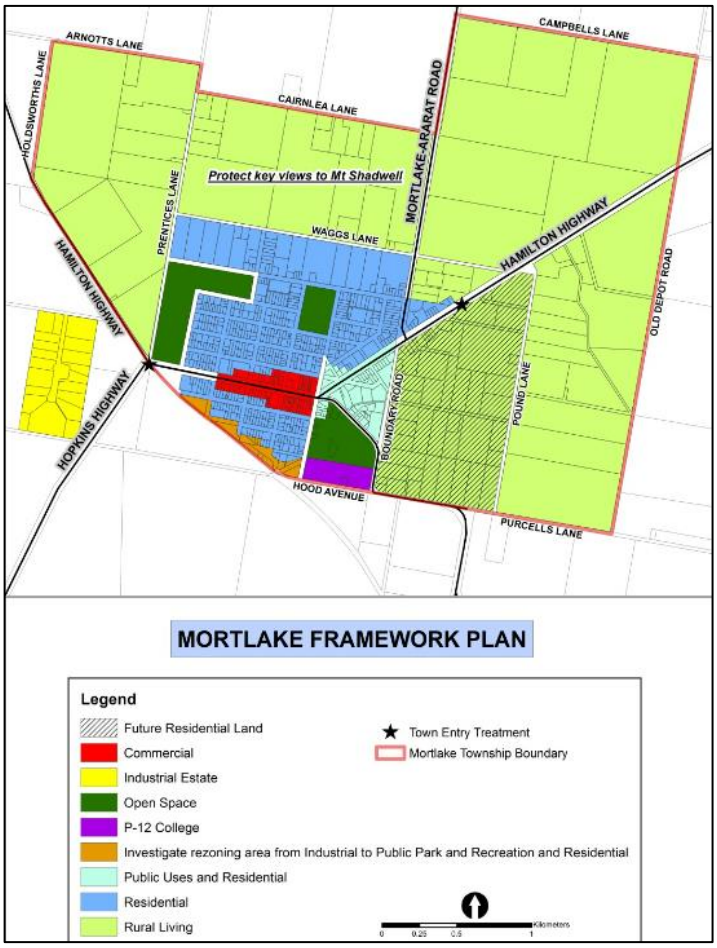
- **21.04 (Municipal vision)** which seeks to:
  - maintain and increase employment and to have real values of property increases.
  - support and protect the agricultural base of the Shire, recognising the potential of improving primary production, adding value to primary products and diversifying into other industries, in an effort to start new business, employment and increase economic wealth
- **21.07 (Economic development)** which identifies the significance of agriculture to the economy and includes the strategy to maintain the status of agriculture as the key element of the economy
- **21.09-4 (Mortlake)** seeks to contain development of Mortlake, in a manner that strengthens its role as a commercial centre for the region while respecting the town's historic character, surrounding rural land and the natural landscape. It supports a defined settlement boundary, promoting development growth and economic investment and protecting the valued views and outlook to Mount Shadwell from development. The Policy supports maintaining the rural character of land surrounding Mortlake and includes the Mortlake Framework Plan (Figure 12). The following vision is identified for Mortlake:

  > To direct the contained development of Mortlake, in a manner that strengthens Mortlake's role as a commercial centre for the region while respecting the town's historic character, surrounding rural land and the natural landscape.

  The vision is to be implanted by:

- Defining a settlement boundary.
- Promoting development growth and economic investment.
- Protecting the valued views and outlook to Mount Shadwell from development.

Figure 12 Mortlake Framework Plan



iii) Clause 22 (local planning policies)

- **22.01 (Aboriginal heritage)** which seeks to protect and appropriately manage Aboriginal cultural heritage values
- **22.02-2 (Rare and Threatened Species)** which seeks to enhance biodiversity and maintain and enhance critical habitat of Victorian Rare and Threatened Flora and Fauna species including but not limited to those listed under the FFG Act
- **22.02-8 (Flora and Fauna Local Policy)** which seeks protect and enhance flora and fauna communities throughout the Shire for ecological, economic and cultural values
- **22.03-4 (Agricultural Production)** which seeks to protect physical and natural resources relied on for agriculture, support agricultural diversification and use and development doesn't prejudice productive capacity
- **22.03-8 (Fire Protection Local Policy)** which seeks to ensure land use and development does not increase the level of fire risk, seek the views of the CFA and considers provision of adequate fire protection measures including adequate water supply.

D:3 Planning scheme provisions

A common zone and overlay purpose is to implement the Municipal Planning Strategy and the PPF.

i) Zones

The land is predominantly in the Farming Zone. The purposes of the Zone are:

- To provide for the use of land for agriculture.
- To encourage the retention of productive agricultural land.
- To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.
- To encourage the retention of employment and population to support rural communities.
- To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.
- To provide for the use and development of land for the specific purposes identified in a schedule to this zone.

The land adjoins and proposes works in the Transport Zone which extends along Mortlake – Ararat Road and Hamilton Highway, the purpose of which are:

- To provide for an integrated and sustainable transport system.
- To identify transport land use and land required for transport services and facilities.
- To provide for the use and development of land that complements, or is consistent with, the transport system or public land reservation.
- To ensure the efficient and safe use of transport infrastructure and land comprising the transport system.

The purpose of transport use is 'Principal road network'.

The land adjoins and proposes works in the Special Use Zone which relates to the Mortlake Power Station (SUZ1) the purpose of which is:

- To facilitate the development and use of a gas-fired power station in a manner which recognises the character and amenity of the surrounding area.
- To provide for electricity generation using natural gas.
- To provide for the transmission, distribution and storage of power.

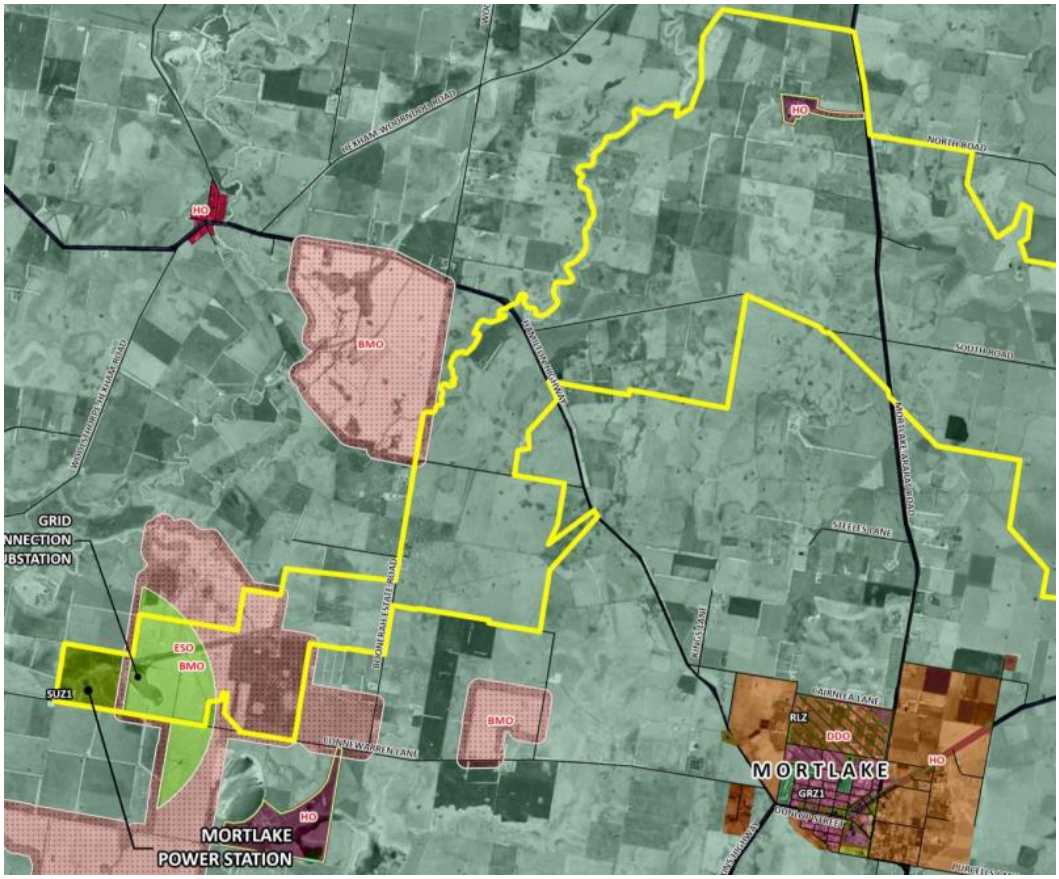
SUZ1 was amended on 9 March 2023 through Moyne Planning Scheme Amendment C78 to:

- add the third purpose
- allow for a planning permit application to be made for the use and development of utility installation for the purpose of transmission, distribution, and storage of power, without needing to prepare or comply with the development and environmental management plans for the Mortlake Power Station. This change removed an earlier permit trigger for the provision of a development plan for this application.

ii) Overlays

Portions of the Project land are within the Bushfire Management Overlay (BMO) to the south west of the site adjacent to the Mortlake Power Station, Environmental Significance Overlay (ESO3) adjacent to the Mortlake Power Station site, and the Heritage Overlay (HO89) which applies to the 'Mondilibi' homestead complex located at the northern extent of the site, shown in Figure 13).

Figure 13 Extent of Zones and Overlays (BMO, ESO3 and HO)



Source: Planning Report Figure 19, page 91 Note: ESO3 is coloured lime green, BMO red stipple

The purpose of the BMO is:

- To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.
- To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.
- To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

The application triggers a requirement for a permit under the BMO for subdivision only. This requires (unless waived by the responsible authority) the provision of a:

- bushfire hazard site assessment
- bushfire hazard landscape assessment
- bushfire management statement.

The purpose of the ESO is to:

- To identify areas where the development of land may be affected by environmental constraints.
- To ensure that development is compatible with identified environmental values.

ESO3 identifies the following statement of environmental significance:

> The Mortlake Power Station will provide gas-fired power to contribute to meeting the demand for electricity in Australia. The development and use of the power station will be in accordance with an approved Development Plan and Environmental Management Plans.

> There is potential for noise generated by the power station to impact on any proposed sensitive uses and developments of land surrounding the power station site, particularly accommodation uses and developments.
>
> If accommodation land uses and developments which are sensitive to potential noise emissions from the power station are permitted to be located in proximity to the facility this may result in real or perceived impacts and land use conflicts.
>
> Accommodation land uses and developments should not be permitted within the 42 dB(A) contour for worst case weather conditions without consideration of the potential noise impacts from the facility.

The environmental objectives to be achieved in the ESO3 are:

- To ensure that the development and use of the Mortlake Power Station is not constrained by the establishment of potentially conflicting accommodation uses and developments nearby.
- To ensure that potential noise impacts are considered in any decision regarding accommodation land use and development.
- To apply acoustic measures in the design of any accommodation developments in proximity to the Mortlake Power Station.

The Project does not have any impact on the Mondilibi' homestead within the Heritage Overlay extent.

iii) Particular provisions

Clause 52.17 (Native vegetation)

Clause 52.17 requires a planning permit to remove, destroy or lop native vegetation. The purpose of clause 52.17 is to ensure there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. It requires the applicant to avoid removal, minimise impacts and offset to compensate for any permitted loss of biodiversity in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*, DELWP, 2017 (Native Vegetation Guidelines).

Clause 52.32 (Wind Energy Facility)

The purpose of Clause 52.32 is:

> …to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area.

It provides that a planning permit is required to use and develop land for a wind energy facility

unless it is in an area where a wind energy facility is prohibited (the Project land is not within the types of locations that are prohibited in the Table to Clause 52.32-2. The Schedule to Clause 52.32 identifies that a Wind Energy Facility is prohibited on "*land within five kilometres of the high water mark of the coast east of the urban area of Warrnambool*."

An application that involves a turbine within one kilometre of an existing dwelling it must be accompanied a plan and written consent of that land owner. For this application only one turbine meets this criterion, and the consent of that owner was provided.

Clause 52.32-4 includes application requirements including:

- a site and context analysis
- a design response including visual simulations, a rehabilitation plan and written report which includes an assessment of:
  - visual impact on the landscape

- impact on species listed under the FFG Act and EPBC Act
- the noise impacts of the proposal prepared in accordance with the Noise Standard, including an assessment of whether a high amenity noise limit is applicable, as assessed under Section 5.3 of the Standard
- the impacts upon Aboriginal or non-Aboriginal cultural heritage
- an environmental management plan including any rehabilitation and monitoring requirements.

- Mandatory noise assessment:
  - A pre-construction (predictive) noise assessment report demonstrating that the proposal can comply with the New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise, including an assessment of whether a high amenity noise limit is applicable under Section 5.3 of the Standard.
  - An environmental auditor appointed under Part 8.3 of the Environment Protection Act 2017 must prepare a report that verifies if the acoustic assessment undertaken for the purpose of the pre-construction (predictive) noise assessment report has been conducted in accordance with the Standard.

Clause 52.32 includes decision guidelines that the Responsible Authority must consider:

- the Planning Policy Framework.
- the effect on the surrounding area in terms of noise, blade glint, shadow flicker and electromagnetic interference
- impact on significant views, including visual corridors and sightlines.
- impact on the natural environment and natural systems.
- impact on cultural heritage.
- impact on aircraft safety.
- WEF Guidelines
- the NZ Noise Standards.

Clause 71.02 (Integrated Decision Making)

The principle of integrated decision making is set out in clause 71.02-3. It states:

- Society has various needs and expectations such as land for settlement, protection of the environment, economic wellbeing, various social needs, proper management of resources and infrastructure. Planning aims to meet these needs and expectations by addressing aspects of economic, environmental and social wellbeing affected by land use and development.
- Planning and responsible authorities should endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.
- Planning authorities should identify the potential for regional impacts in their decision making and coordinate strategic planning with their neighbours and other public bodies to achieve sustainable development and effective and efficient use of resources.

Other provisions

- Clause 52.05 (Signs)
- Clause 52.29 (Land adjacent to the Principal Road Network).

D:4 Policies and strategies

i) Great South Coast Regional Growth Plan

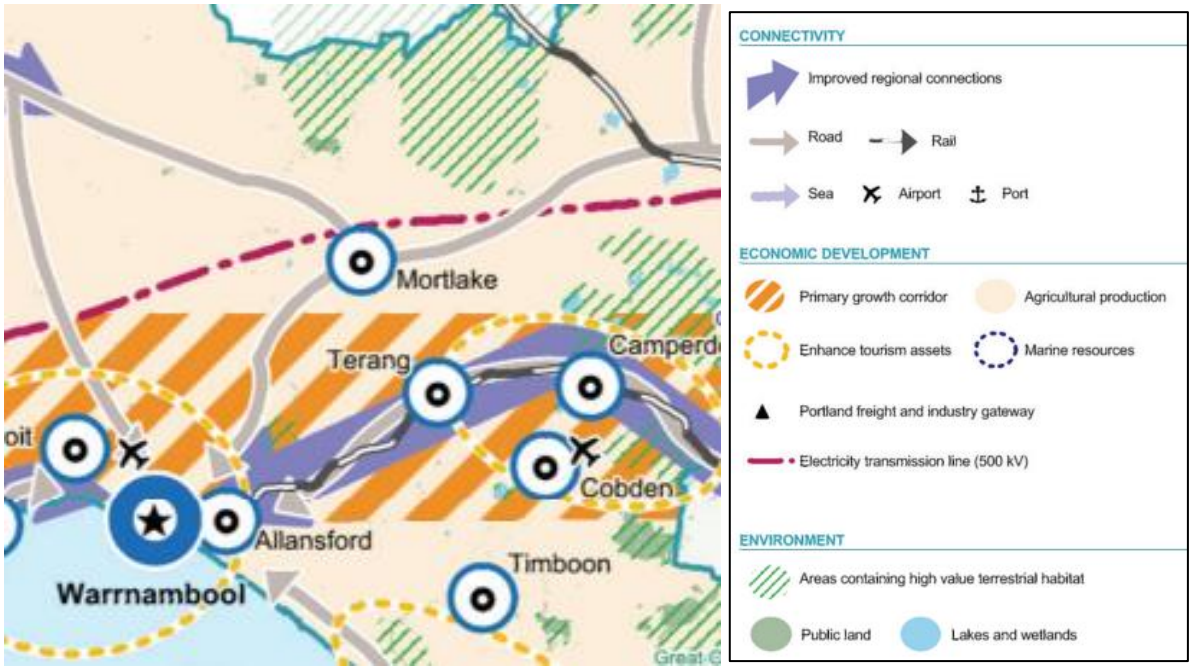
The Great South Coast Regional Growth Plan (Figure 14) includes policies and strategies which support:

- the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to the regional community
- require the protection and proper maintenance of infrastructure and assets, including local roads, during the development and construction of energy projects
- encourage the use of off-site landscape plans to help address the impacts, on landscapes and communities, of alternative energy developments
- plan for and sustainably manage the cumulative impacts of alternative energy development.

In relation to electricity infrastructure:

- the region aims to be an increasingly significant supplier of alternative energies over the next 30 years and to take advantage of locally generated power to attract new industrial development. Necessary infrastructure will need to be developed to ensure the energy can be distributed into the Victorian and national grid distribution systems as well as locally through a 'smart' energy distribution
- the region has a significant supply advantage in the form of the presently underutilised 500 kV transmission line, which means additional energy production could be distributed at low marginal cost. However, the local distribution network is at 90 per cent capacity and will need to be expanded to ensure population and industry growth can continue.

Figure 14 Excerpt Great South Coast Regional Growth Plan – Regional Growth Map



Source: Regional growth map (DELWP)

In relation to Mortlake and the role of agriculture the Great South Coast Regional Growth Plan identifies that:

- medium level growth is anticipated within Mortlake (designated a district town) with its tourism numbers expected to grow and provide a catalyst to grow the town's service

industry. The Mortlake gas power station has the potential to attract economic growth and expand employment opportunities particularly relating to food processing
- sustainably manage areas of high-quality agricultural land to support growth in food production
- support rural land uses that can integrate with and complement adjacent uses or assets while managing potential land use conflicts
- support higher value-adding and diversification of existing industries and land uses where they build on existing infrastructure and do not compromise the region's agricultural, environmental and cultural heritage significance.

ii) Victorian Climate Strategy

Victoria's Climate Change Strategy, DELWP, May 2021 sets interim targets to reduce Victoria's emissions from 2005 levels 28-33 per cent by 2025, and 45-50 per cent by 2030 to achieve net zero emissions by 2050.

Point one of the strategy's five-point plan is to achieve the emissions reduction targets to transition to renewable energy. The strategy includes supporting the transition of the electricity system with renewable energy and an 'Energy pledge' that 50 per cent of Victoria's electricity will come from renewable sources by 2030. The target is anticipated to stimulate new investments in large-scale solar and wind projects, create jobs and provide flow-on benefits for supply chains, related services and local communities. It will help encourage uptake of new energy technologies.

iii) Renewable Energy Roadmap and Action Plan

The Renewable Energy Roadmap is the Victorian Government's plan to accelerate development of renewable energy generation in Victoria to reduce emissions, create jobs and put downward pressure on energy prices. The Roadmap sets out the government's plan to attract Victoria's share of renewable energy investment and jobs in Australia. It outlines initiatives to accelerate the development of renewable energy projects in Victoria.

The Renewable Energy Action Plan 2017 outlines actions the Victorian Government will take to encourage investment in renewable, affordable and reliable energy. The plan includes 23 actions across three areas:

- Creating new jobs, investment and energy sector growth
- Empowering and engaging households, businesses, and communities
- Strengthening our affordable, reliable and resilient energy system.

Relevant actions include Action 6 - *Streamlining renewable energy projects processes and approvals.*

iv) Renewable Energy Zones

To facilitate the development of renewable energy, grid infrastructure, energy efficiency and

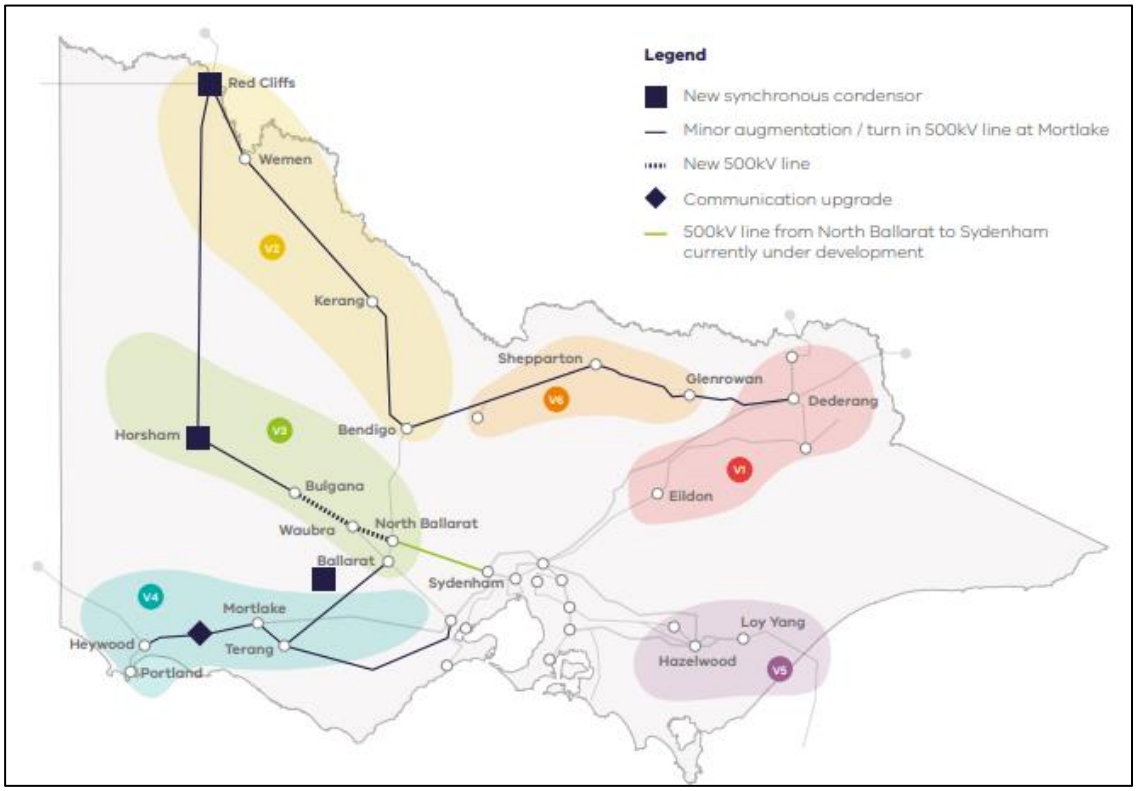
decarbonisation projects, the Victorian Government released the *Victorian Renewable Energy Zones Development Plan Directions Paper* (February 2021). The Paper outlines a plan to unlock 10 gigawatts of new renewable energy capacity in Victoria, by establishing six Renewable Energy Zones (REZs). One of the REZ is proposed to be located in the South West area (Figure 15).

The REZs seek to allow new renewable energy projects to be connected in a timely manner, reducing risks for investors, achieving better energy affordability and reliability for consumers, helping achieve climate change goals and furthering regional economic development goals.

Development in each REZ will be facilitated under the *National Electricity (Victoria) Act 2005*. The Act was amended by the *National Electricity (Victoria) Amendment Act 2020* to allow the modification or disapplication of the national regulatory framework and allow developments to proceed without associated delays, by Order of the Governor in Council.

The Government and the Australian Electricity Market Operator have identified potential immediate priority transmission network upgrade projects to support existing and future renewable energy generation development in Victoria's REZs. The Directions Paper forecasts the delivery of small-scale upgrades and augmentation in the South West within a two to three year horizon and more substantial project which will provide "*2500MW of additional network capacity thereby reducing generator curtailment due to network stability limitations"* through a "*Turn in existing Haunted Gully to Tarrone 500kV line at Mortlake*". Further potential medium-term investments are identified including additional battery storage and 500kV lines from Mortlake to Ballarat and Bulgana to Mortlake. A $540 million investment fund has been established to fund upgrades to network infrastructure and to develop the REZs.

Figure 15 Victoria's Renewable Energy Zones with immediate network solutions



Source: Victorian Renewable Energy Zones Development Plan Directions Paper, Figure 21 Page 11

v) Victoria's Regional Statement

Victoria's Regional Statement 'Your Voice, Your Region, Your State, 2015' establishes nine new regional partnerships that will direct regional priorities straight to government. The statement

acknowledges the significant job opportunities from new energy industries and the Government's commitment to building renewable energy that will deliver major benefits for regional Victoria.

vi) New Energy Technologies Sector Strategy

The *New Energy Technologies Sector Strategy: Victoria's Future Industries,* March 2016 sets out the Victorian Government's key priorities to ensure an efficient transition to a low carbon economy. New energy technologies, including renewable energy, are a key component of this transition.

vii) Protecting Victoria's Environment – Biodiversity 2037

Protecting Victoria's Environment – Biodiversity 2037 is a plan that promotes collaboration across government to improve conservation of Victoria's biodiversity. In particular, the plan aims to reduce biodiversity loss through habitat conservation.

D:5 Guidelines, standards and protocols

i) Development of Wind Energy Facilities in Victoria, Policy and Planning Guidelines

The *Development of Wind Energy Facilities in Victoria, Policy and Planning Guidelines*, DELWP, July 2021 (WEF Guidelines) provides the framework for a planning permit proposing a wind energy facility.

The guidelines set out:

- a framework to provide a consistent and balanced approach to assist the assessment of windenergy projects;
- a set of consistent operational performance standards to inform the assessment and operationof a wind energy facility project;
- guidance as to how planning permit application requirements might be met; and
- a framework for the regulation of wind turbine noise.

The guidelines identify that:

> Wind energy facilities should not lead to unacceptable impacts on critical environmental, cultural or landscape values. Critical values are those protected under Commonwealth and Victorian legislation and assets of state or regional significance, mapped and recognised through planning schemes, including the Planning Policy Framework

and

> A responsible authority should endeavour to balance environmental, social and economic matters in favour of net community benefit and sustainable development.

The guidelines identify:

- the sorts of information required to accompany an application and identified at Clause 52.32
- information relating to:
  - undertaking flora and fauna assessment
  - Environmental Management Plans
  - responding to aircraft safety issues
- matters for consideration in application assessment including:
  - contribution to government policy objectives
  - amenity of the surrounding area including from noise, blade glint, shadow flicker and Electromagnetic interference

- landscape and visual impact
- flora and fauna
- aircraft safety
- construction impacts and decommissioning
- model planning permit conditions.

In relation to turbine noise, the guidelines state:

> The proponent is required to submit a pre-construction (predictive) noise assessment report demonstrating that the proposal can comply with New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise, including and assessment of whether a high amenity noise limit is applicable under Section 5.3 of the Standard.
>
> …
>
> From the 1 July 2021 *Environment Protection Act 2017* introduces changes aimed to position the Environment Protection Authority (EPA) as the single regulator of operational wind turbine noise. Amendment VC203 to the VPP and all planning schemes supported these changes by removing planning requirements for the regulation of operational wind turbine noise for a wind energy facility.

The pre-construction noise assessment report must be accompanied by a report undertaken by a qualified environmental auditor (EPA appointed); the audit report will give an opinion of the acoustic assessment being conducted in accordance with NZS6808:2010.

ii) New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise

The *New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise* (NZ Noise Standard) has been adopted as the noise standard for wind farm noise in Victoria for many years. The Noise Standard provides guidance in the measurement and modelling of turbine noise as well as setting the noise limits depending upon the background noise level, planning zones and amenity.

The Noise Standard includes:

- the recommended noise limits providing a reasonable rather than an absolute level of protection of health and amenity
- limits for wind farm sound that are required to provide protection against sleep disturbance and maintain reasonable amenity at noise sensitive locations
- at any wind speed, wind farm sound levels ($L_{A90(10\,min)}$) should not exceed the background sound level by more than 5 dB, or a level of 40 $dB_{LA90(10\,min)}$, whichever is the greater
- the wind farm noise limit of 40 $dB_{LA90(10\,min)}$ in 5.2 is appropriate for protection of sleep, health, and amenity of residents at most noise sensitive locations. In special circumstances at some noise sensitive locations a more stringent noise limit may be justified to afford a greater degree of protection of amenity during evening and night time. A high amenity noise limit that should be considered where a plan promotes a high degree of protection of amenity
- for a high amenity noise limit area, wind farm sound levels ($L_{A90(10\,min)}$) during the evening and night-time should not exceed the background sound level by more than 5 dB or a level of 35 $dB_{LA90(10\,min)}$, which is the greater
- consideration of special audible characteristics (such as, tonality, impulsiveness and amplitude modulation).

The 'plan' referred to in the NZ Noise Standard in terms of identifying high amenity is defined in the New Zealand Resources Management Act and "*means a regional plan or a district plan*". The equivalent in the Victorian context would be a planning zone, planning overlay, or an area

identified in a precinct strategic plan. The noise limits in the New Zealand are intended to provide reasonable protection against loss of amenity or sleep disturbance.

iii) EPA Wind Energy Facility Turbine Noise Regulation Guidelines

The Wind Energy Facility Turbine Noise Regulation Guidelines (EPA Noise Guidelines) provide an overview of the requirements that apply to wind turbine noise emissions under EP Regulations to assist wind energy facility (WEF) operators to implement their obligations and to manage the risks of wind turbine noise emissions to prevent harm to human health and the environment and address General Environmental Duty relating to noise pollution from facilities.

iv) EPA Noise Protocol

The *EPA Noise Limit and Assessment Protocol* (Noise Protocol):

- applies to the assessment and application of noise limits to commerce, industry and trade as well as entertainment venues (both indoors and outdoors)
- does not apply to turbine noise from the proposed wind energy facility
- will apply to the quarrying of materials during the construction period, operation of the battery storage facility, terminal facility and the workshop and office facilities
- has a different approach for activities in rural areas to that of an urban area.

The noise limits in rural areas are:

- based on estimate of the background noise levels at the noise source and the impacted dwelling
- not onerous on the industry in that the controls recognise the balancing of the development and operation of industry, commerce and trade development in quiet rural areas while not allowing noise levels to degrade the local amenity.

v) Noise from industry in regional Victoria, EPA, 2011Bb

The *Noise from industry in regional Victoria*, EPA, 2011 (NIRV) provide the methods to set noise levels for industry in regional Victoria. They provide a balance between protecting community wellbeing and amenity near industrial premises and supporting the social and economic value of industry in regional Victoria. The guidelines set out recommended maximum noise levels ('recommended levels'), which can be applied to manage the impacts of noise on the community. They do not apply to wind energy facilities but do apply to associated elements such as utility installations.

vi) Construction Noise

The EPA *Civil construction, building and demolition guide 137* replaces EPA publications dealing with noise impacts from construction and demolition activities. The wind farm construction will need to comply with these guidelines.

vii) Native Vegetation Guidelines

The Native Vegetation Guidelines provide for the assessment of impacts and describe how offsets are calculated to compensate for loss. The guidelines are an incorporated document in all planning schemes and are to be considered when preparing an amendment.

The Native Vegetation Guidelines provide:

> A site assessment report must be current, as detailed in the Assessor's handbook.

Decision guidelines for applications are set out in Table 6 of the Native Vegetation Guidelines and include whether an offset has been identified and can be secured. There are two types of offsets provided for under the Native Vegetation Guidelines:

- Species offset – required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species. Species offsets must compensate for the removal of that particular habitat.
- General offset – required when the removal does not have a significant impact on any habitat for rare or threatened species.

The Assessor's handbook provides further detail for assessing an application to remove native vegetation and includes multiple decision points where the assessor should consider either advising how the proposal could be amended to further avoid and minimise vegetation loss and make the application acceptable, or refuse the application.

The Assessor's handbook provides that "*a species offset is required when the proportion of habitat value to be removed is greater than 0.005 per cent of the habitat value in the Habitat importance map for that species*".

viii) Interim Brolga Guidelines

The *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population*, DSE 2011, Revision 2012 (Interim Brolga Guidelines):

- set out the process for investigating and mitigating potential impacts of wind energy facilities on the brolga
- state a wind energy facility may impact brolgas through direct effects, particularly mortality from colliding with turbines; indirect effects including habitat avoidance; and barrier effects
- recommend a three-step assessment approach:
  - Initial Risk Assessment (desk top studies)
  - Impact Assessment (breeding and non-breeding season surveys)
  - Mitigation and Offset (avoid impacts, collision risk analysis, Population Viability Analysis, compensation strategies)
- state:

  As a general recommendation, these guidelines recommend that a 3.2 km and 5 km radius turbine-free buffer from breeding sites and flock roost sites respectively, will adequately meet the objectives set for these habitats. However, recognising that the spatial requirements of Brolgas are not well understood, a proponent may propose reduced buffer areas providing that they can be shown to meet the objectives set for breeding and non-breeding habitats. Proposed buffer distances should meet with the satisfaction of the DSE

The *Victorian Brolga Assessment and Mitigation Standards* (DELWP, 2020) (draft Brolga Standards):

- updates the Brolga Guidelines
- are informed by new research into the habitat used by flocking and breeding Brolga
- seeks that the Victorian brolga population is not more threatened from the impact of wind energy facilities in Victoria
- were exhibited in November 2022 and have not been finalised.

ix) CFA Renewable Energy Guidelines

The *Design Guidelines and Model Requirements for Renewable Energy Installations, Country Fire Authority, 2022* (CFA Guidelines) provide standard measures and processes for fire safety, risk, and emergency management to be considered when designing, constructing and operating new renewable energy facilities.

The CFA Guidelines state that facilities must be located in low-risk environments wherever possible, to eliminate or reduce the risk of external fire impacting the facility and its consequences. Low risk attributes include:

- grassland
- no continuous other vegetation types within 1-20 kilometres of the project site
- generally flat topography, some undulation may be present with slopes are less than 5 degrees
- good road access with multiple routes available to and from the project site
- no BMO applies.

The guidelines state where wind facilities are located within a high-risk zone, such as a timber plantation, nacelles must be equipped with fire detection and suppression systems. They should also be based on a comprehensive risk assessment.

The siting and design guidelines cover topics such as spacing of turbines, marking of turbines and monitoring towers, clearance of vegetation around turbines, access roads and fire breaks.

x) Community Engagement and Benefit Sharing

Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria, DELWP, 2021 sets out expectations for best practice community engagement and benefit sharing across all renewable energy technologies. It encourages developers to deliver projects that benefit their hosts, neighbours and communities. Projects that seek to foster accepted and mutually beneficial outcomes for the local community will be favourably assessed under the Victorian Renewable Energy Target auction scheme. Benefit sharing includes arrangements for neighbour benefits (including neighbour payments, screening vegetation) sponsorship and grants and beyond compliance activities associated with visual amenity, television reception and sound dampening.

The Applicant's Community Consultation Report sets out a proposed benefit sharing program that includes near neighbour payments between $500 and $3000 per turbine depending on proximity (up to 4 kilometres) construction payment at the commencement of major works and up to $85,000 per year to the local community for the life of the Project.

D:6 Planning Practice Notes

Planning Practice Notes

Planning Practice Note 45: Aboriginal Heritage Act 2006 and the Planning Permit Process, June 2015 (PPN45) describes the key provisions of the Aboriginal Heritage Act 2006 and how it interacts with the planning permit process. It covers:

- the requirements for determining if a Cultural Heritage Management Plan (CHMP) is required
- the roles of Registered Aboriginal Parties and local government
- the effect of CHMPs on planning permit applications.

A CHMP is required for a development if the proposal is a listed high impact activity that will cause significant ground disturbance and is in an area of cultural heritage sensitivity as defined by the Aboriginal Heritage Regulations 2007. A wind energy facility and utility installation are identified in the regulations as high impact activities. Parts of the Project land includes areas of cultural heritage sensitivity including land within 200 metres of named waterways (Salt Creek and Blind Creek).

Where a CHMP is required:

- the responsible authority cannot issue a planning permit until it receives a copy of the approved CHMP (section 52(1) of the Aboriginal Heritage Act)
- a planning permit cannot be granted for an activity that is inconsistent with an approved CHMP (section 52(3) of the Aboriginal Heritage Act)
- responsible authorities may choose to include a note on the permit directing the Proponent to the recommendations of the CHMP approved under the Act.

Planning Practice Note 64: Local planning for bushfire protection provides guidance on local planning for bushfire protection including assessing risk from bushfire hazard.

D:7 Planning Scheme Amendments

Amendment VC212

During the Hearing parties referred to the impact of the proposal on the use and development of rural properties close to wind farms. Amendment VC212 which was gazetted on 9 February 2022 amended the provision of several zones including the Farming Zone:

- Section 1 uses (Bed and breakfast, Dependent person's unit, Dwelling (other than Bed and breakfast), Rural worker accommodation):

  Must be located more than one kilometre from the nearest title boundary of land subject to:

  - A permit for a wind energy facility; or
  - An application for a permit for a wind energy facility; or
  - An incorporated document approving a wind energy facility; or
  - A proposed wind energy facility for which an action has been taken under section 8(1), 8(2), 8(3) or 8(4) of the Environment Effects Act 1978.
- Permit required for buildings and works associated with accommodation within one kilometre from the nearest title boundary of land subject to the same criteria as above (VicSmart application provisions do not apply in these circumstances).
- Decision guidelines include consideration of:
  - for accommodation issues:

    The potential for accommodation to be adversely affected by noise and shadow flicker impacts if it is located within one kilometre from the nearest title boundary of land subject to:
    - A permit for a wind energy facility; or
    - An application for a permit for a wind energy facility; or
    - An incorporated document approving a wind energy facility; or
    - A proposed wind energy facility for which an action has been taken undersection 8(1), 8(2), 8(3) or 8(4) of the Environment Effects Act 1978.
  - for Design and siting issues:

    The need to locate and design buildings used for accommodation to avoid or reduce noise and shadow flicker impacts from the operation of a wind energy facility if it is

located within one kilometre from the nearest title boundary of land subject to: [same criteria as above].

Amendment VC234

Amendment VC234 was gazetted after the Hearing on the 4 July 2023. It clarified noise requirements for wind energy facilities and enforcement matters for the responsible authority. The Explanatory Report identifies that the Amendment amends:

- Clause 52.32 (Wind energy facility) to improve the application requirements relating to pre-construction (predictive) noise assessment reports, including by better aligning the pre-construction requirements with the regulatory framework for operational wind turbine noise under the Environment Protection Act 2017.
- Clause 72.01 (Responsible authority for this planning scheme) to clarify that councils are responsible for enforcing conditions in permits (issued under Part 4 Division 1 of the Planning and Environment Act 1987 (the Act)) and scheme provisions requiring matters to be endorsed, approved or to the satisfaction of the Minister for Planning.

In relation to Clause 52.32 it identifies:

> The amendment will ensure that pre-construction (predictive) noise assessment reports required for permit applications are subject to the same requirements as post-construction reports under the operational noise framework, and more clearly assess whether the facility can comply with the relevant operational noise limit imposed by that framework. The amendment will also improve the efficiency and workability of application requirements, including by making structural changes allowing the responsible authority to determine, as with all other application requirements, whether in the facts and circumstances it is appropriate for a predictive noise assessment. This change will avoid ambiguity about whether minor changes to a permit that have no substantive impact on operational noise output trigger the need for a further predictive noise assessment.

Appendix E Brolga Assessment

i) Level 1 assessment

Database records were examined within the ROI. The results are summarised below.

Victorian Biodiversity Atlas (VBA):

- a total of 4455 observations, with dates ranging between 1965 and 2019
- VBA_FAUNA25: 3499 records (precision 0 – 500 metres)
- VBA_FAUNA100: 956 records (precision 500 metres – 9 kilometres)
- 86 observations of flocks of Brolgas numbering ≥ 10 birds
- 3846 records do not include a count of the number of birds observed
- 790 breeding observations
- 29 observations of Brolgas occur within the Mount Fyans wind farm study area, including five listed as breeding records.

A number of explanatory notes were included to qualify the nature of many records and highlight uncertainty. For example, of the total 4455 observations, 3138 (70 per cent) are the result of a GPS tracking survey undertaken between June 2011 and August 2012 using 22 birds fitted with transmitters.

Birdlife Australia Atlas:

- six observations, with dates from between 1991 and 2012
- accuracy of records including one with no precision specified, two with 0 - 100 metre precision and three with 0 - 500 metre precision
- one observation within the wind farm study area
- no observations of flocks of Brolgas numbering ≥ 10 birds
- two breeding observations.

Southwest Victorian Brolga Flocking Site Database (BFD):

- 31 observations between 1976 and 2004
- no observations within the wind farm study area
- nine observations of flocks of Brolgas numbering greater than 10 birds.

Figures 2.1 to 2.21 of the Brolga Report map the historical and database records. Those records confirmed during the review of databases were used to inform the Level 2 assessment.

Landowner surveys were undertaken by the Applicant with 42 landowners within a 5-kilometre radius between May 2013 and March 2014 (including six site visits). 10 Brolga breeding sites and one flocking site were identified by landowners. While a large number of landowners reported Brolga on their land, most of these observations were not considered consistent with the definitions of breeding or flocking sites used in the Brolga Guidelines. Breeding sites were only identified when a nest, eggs or a chick was observed.

ii) Level 2 assessment

Aerial surveys

Aerial surveys were conducted in three separate years to assess Brolga breeding activity:

- 3-4 November 2009 – 7 breeding locations confirmed based on the presence of a nest. One within the study area, two within 3 kilometres of the boundary and four outside 3 kilometres
- 8-9 October 2014 – one breeding location based on the direct observation of a Brolga sitting on a nest within the wetland located over 5 kilometres east of the boundary. Two observations were within the Project study area - Pair 1 was within a suitable breeding wetland but no nesting was noted and Pair 6 was not in a paddock considered unsuitable for breeding and no nest was visible. Two further Brolga pairs (Pair 2 and Pair 7) were recorded within 3 kilometres of the Project boundary and breeding was not confirmed. Other observations were outside 3 kilometres from the Project boundary
- 30-31 October 2019 – two breeding locations within the buffer area but outside the Project study area. One was of a single bird sitting on a nest with no partner observed at a wetland with no previous records, the other a pair with an unfledged chick at the Mortlake Common which has previous records.

A pair was also observed sitting on a nest a well-known breeding site near Woorndoo-Dundonnell Road on 5 November 2019 outside the Project study area.

Home range surveys

Home range surveys were conducted on breeding pairs at the Project study area and Penshurst from late 2009-early 2010. The Project study area observations were conducted on 14-18 December 2009, 21-24 December 2009, 4-8 January 2010, 18-22 January 2010, 1-6 February 2010 and 15-18 February 2010. Opportunistic observations of Brolga locations through other survey work from October 2009 – March 2010 were included in the home range analysis.

Five pairs of Brolga at Mt Fyans and three pairs of Brolga at the Penshurst wind energy facility were determined to have stable home ranges.

Home range analysis

In 2010, home range analysis and found the average home range for observed pairs with stable home ranges was between 31 and 35 hectares. Analysis of home range data showed that 95 per cent of the time, Brolgas will be within 600 metres of the centre of their home range whilst incubating, brooding and rearing fledglings. Home ranges are shown in Figure 4 of the Brolga Report.

Additional flocking habitat assessment

Further potential flocking assessment was undertaken at Lake Sheepwash and three other sites where larger numbers of Brolga had been reported.

A survey of Brolga movements around Lake Sheepwash occurred from 27-30 May 2013 and confirmed it as a flocking site. A maximum of 36 Brolga were observed roosting overnight on 30 May 2013.

Three additional sites (A, B and C) where larger numbers of Brolgas have been reported were also investigated. The investigation found:

- ***Site A*** is directly to the west of Lake Barnie Bolac, which is an established flock roost site. Aerial photos from 2012 show the wetland does not hold water over summer months. Additional database records relate to flocking events where groups of Brolgas (36 and 24 birds) were observed foraging. The hydrology of the wetland is considered unlikely to

support a flock roost site. It is likely that the wetland provides a foraging opportunity for Brolgas who are known to roost at the nearby Lake Sheepwash and Lake Barnie Bolac

- ***Site B*** a salt lake with minimal vegetation. In 2014 Brolgas were observed periodically using the wetland as a roost site during the day and roosting at Lake Sheepwash during the day and overnight. They were observed moving around the landscape together and feeding in large numbers on grain trails approximately 800 metres north and 3 kilometres north-east of the site. It is likely the grain trails increased the concentration of Brolgas leading to the wetland being used as a day roost site. Site B is not considered to be a flock roost site due to the site being used periodically during the day over a three-month period in 2014 and birds moving to other wetlands for nocturnal roosting
- VBA records show five records of flocking events at ***Site C,*** with three during the flocking season. Aerial imagery from 2012 shows that with the exception of the stock watering dam, the wetland did not hold water over summer. Aerial imagery from February 2013 shows the wetland did not contain water. No flocking records were made through annual flocking / breeding surveys from 1980 to 2007. Current landowners confirm few sightings over 10 years of living on-farm, observing three or four Brolgas foraging in paddocks around 2016 and noting that low-lying areas do not hold water over summer.

In April 2019, DELWP accepted that these sites were unsuitable flock roost sites.

Additional breeding habitat assessment

Information received through community consultation by Hydro Tasmania resulted in three sites being monitored by Hydro Tasmania staff and assessed by Biosis staff.

Site 1 is located on Salt Creek off Castle Carey Road. Site 2 is a known breeding site south of Woorndoo-Dundonnell Road and was established as a reference site to compare Site 1. Monitoring of both sites over 11 months from July 2017 to June 2018 found no observations of Brolga within the wetlands and no evidence of breeding. Site 1 was assessed in May 2018 as unsuitable habitat for breeding as the low-lying flats are unlikely to provide the hydro period required for successful breeding, there is dense vegetation in the creek and Biosis are not aware of Brolgas breeding in a creek on the volcanic plain which is known to flow regularly.

Site 3 is in the north of the study area to the east of Mortlake-Ararat Road. It was assessed as unsuitable for breeding in April 2018 as it was unlikely to hold water long enough to support breeding though small amounts of water are held each year. The north-eastern tip may hold water longer but no suitable habitat was identified. No nests were observed by the landowner.

Confirmed flocking and breeding sites

Brolga flocking sites within 10 kilometres of the Mount Fyans wind farm study area include Lake Barnie Bolac, Long Dam and Lake Sheepwash. Analysis of the databases records and observations from the landowner survey found no additional sites that meet the definition of a flock roost site within 10 kilometres.

Three VBA breeding site records (ID:120, ID:488 and ID:976) were removed from consideration through Stage 2 assessment using a combination of:

- Ground based habitat assessments
- Review of source material when a literature report was a source in the VBA
- Landowner surveys
- Aerial observations of habitat suitability during the breeding season.

Four breeding sites could potentially be affected by the construction and operation of the MFWF with three sites experiencing overlap between buffers and the project site. A further 24 breeding sites are located outside the study area but within 10 kilometres of the study area boundary.

iii) Level 3 assessment

Buffers

Turbine free buffers were applied to all potentially impacted breeding and flocking sites. A detailed account of the method used to calculate buffers is provided in the Brolga Report.

The home range data generated from pairs with stable home ranges was used to calculate a radius of containment for all breeding pairs, including those which failed before sufficient data could be collected to assign dimensions of a stable home range. The radius of containment was calculated for 99.9 per cent of the home range and contained an average radius of 687.8 metres with a lower confidence interval of 541.7 metres and an upper confidence interval 833.8 metres. To provide a conservative approach, the upper confidence interval of 833.8 metres was used and a 300m disturbance buffer was applied to this to give a breeding site buffer of 1133.8 metres. The buffer was developed in consultation with DEECA in 2010 and confirmed in 2019.

The default 5-kilometre flocking site buffer in the Guidelines has been applied to Lake Barnie Bolac, Long Dam and Lake Sheepwash.

Collision Risk Modelling and Population Viability Assessment

Collision risk modelling was not undertaken as there was determined to be no empirical basis for a number of Brolga flights that could be used as valid inputs to estimate collision risk. Reasons include:

- it is not considered feasible to obtain representative measures of Brolga flights across the general landscape away from breeding and flocking locations
- Brolgas may rarely fly. In the study of breeding home range study only one instance of Brolgas in flight was recorded from 394 observations.

Rather, it was decided with DEECA in 2018 that an alternative method to determine an appropriate level of compensatory offset measures was to draw on collision risk modelling and population viability assessments (PVA) from other wind farms. This process drew on data from five wind farms that modelled risks of collisions with both turbines and new overhead powerlines – three used the Biosis collision risk model and two used the Band/Brett Lane and Associates model.

Collision risk for the five wind farms was applied to the 81 turbines proposed and a 95 per cent avoidance rate was applied which may represent an overestimate of risk. This provides an indicative range of rates of potential Brolga mortality and the results are shown in Table 7.

Using this approach, and calculating the mean of the values, it is expected that over the life of a wind farm with 81 turbines conservation measures designed to add five Brolgas to the Victorian population would be likely to replace possible collisions. This is considered a precautionary approach given that monitoring for bird carcasses over more than 15 years at multiple wind farms found no evidence of Brolga collisions with wind turbines.

Table 7 Collision risk modelling results for Brolga

Wind Energy Facility	Annual per-turbine projected collision rate	Per-turbine projected annual collisions x 81 turbines	Projected collisions over 25 years	Average of one Brolga mortality
Mortlake East	0.0024	0.19	4.9	5.1 years
Penshurst	0.0012	0.10	2.4	10.3 years
Stockyard Hill	0.0006	0.05	1.2	20.6 years
Dundonnell	0.0039	0.32	7.9	3.2 years
Golden Plains	0.0008	0.06	1.6	15.4 years

Mitigation Strategies

Mitigation strategies were be included in a BAM Plan to be completed as part of an EMP.

Compensation Strategies

The Brolga Report notes offsetting concepts for previously approved wind farms and recommended that a strategy or program that gives effect to offset requirements for the Project through the permit condition compliance process. All such efforts would be required for systematic monitoring to determine their efficacy.

Appendix F Panel version of Planning Permit conditions

Tracked Added

~~Tracked Deleted~~

PA1800406

What the permit would allow:

Use and development of land for a wind energy facility, utility installations, and associated buildings and works, subdivision of land, business identification signage, removal of native vegetation and creation/alteration of access to a Transport Zone 2.

DEVELOPMENT PLANS

1. Before the development starts, amended development plans must be approved and endorsed by the responsible authority. When endorsed the plans will form part of this permit. The plans must be fully dimensioned, drawn to a scale. They must be generally in accordance with the Project Development Plan (A1-A6), Substation Development Plans (B1 and B2) Buildings, Structures and Works plans (C1-C8) and Native Vegetation Removal Plans at Appendix B of the Mt Fyans Wind Farm Planning Application (December 2022), but modified to show:
   a) A maximum of 81 turbines with the following specifications:
      i. maximum blade tip height of 200 above natural ground level
      ii. minimum blade tip clearance of 30 metres from ground level
      iii. maximum rotor diameter of 162 metres.
   b) The final location, model, specifications, dimensions, materials and finishes of the turbines.
   c) The location and dimensions of concrete hardstands for each of the turbines as well as typical details.
   d) The location of access tracks.
   e) The location of underground electricity cabling and typical details.
   f) The locations and details of other buildings and works.
   g) The colours and materials and finishes of all buildings and works which must be non-reflective so as to minimise the visual impacts of the development on the surrounding area.
   h) The location and details of all business identification signage.
   i) Native vegetation to be removed generally in accordance with the updated plan *Figure 7 and Figures 7.1 to 7.11 (Mt Fyans Wind Farm Development Plan – Assessed Vegetation Loss)* at section 13 of the expert evidence statement of Matthew Gibson dated 27 March 2023 and consistent with condition 41.
   j) Any modifications required to comply with the CFA conditions 59, 60 and 61.
   k) No aviation lighting on wind turbines and meteorological masts.

l) Relocation of the proposed separate powerlines to avoid the removal of the 6 River Red Gums as shown on the plan entitled 'MFWF Detailed River Red Gum Trees' dated 25 May 2023.

m) Relocation of the transmission line to avoid that part of the Walmsley Dam Brolga breeding disturbance buffer located south of South Road, and any associated micro-siting of any turbines required to accommodate a realignment.

n) Micro-siting of any turbines and associated footings to avoid identified works exclusion areas, CMA mapped wetland buffers, and Brolga breeding and flocking buffers.

o) Provide for trenchless technology to be used for cabling and other infrastructure wherever possible to avoid impacts on waterways and listed aquatic species.

p) Changes to native vegetation removal in accordance with the native vegetation plan approved under condition 41.

q) No wind turbines located within the turbine free Brolga flocking buffer and turbine free Brolga breeding buffer and disturbance buffer identified on ~~the plan at Figure 12.7 of the expert evidence statement of Mark Venosta dated 27 March 2023, amended~~ XXX [insert details of the further work recommended under Recommendation 1] .

r) No wind turbines ~~must be~~ located within the 200 metre Southern Bent-wing Bat habitat buffer areas around River Red Gum trees, Salt Creek, Blind Creek and wetlands (marked as WOfS 1987-2020 current wetland) identified on the plan at Figure 12.11 of the expert evidence statement of Mark Venosta dated 27 March 2023 and XXX [insert detail of the further work recommended under Recommendation 1].

s) Any changes required to comply with Cultural Heritage Management Plan 12657 and Cultural Heritage Management Plan 12658.

t) Any staging of the development.

u) Any other changes required to comply with any other condition of this permit.

Panel note: Condition 1 may need to be amended in light of the further work recommended by the Panel at Recommendation 1, in particular a) relating to turbine number, and p) and r) as a result of further buffer mapping

WRITTEN CONSENT TO MODIFY ENDORSED PLANS

2. Except as permitted under conditions 4 and 5, the use and development must be generally in accordance with the endorsed Development Plans. The endorsed plans must not be altered or modified without the written consent of the responsible authority.

STAGING

3. The use and development may be completed in stages in accordance with the endorsed Development Plans. The corresponding obligations arising under this permit may be completed in stages.

MICRO-SITING OF TURBINES

4. Before development starts, a Micro-Siting Plan must be submitted to, approved and endorsed by the responsible authority, identifying a footprint at ground level within which each turbine may be located. When endorsed the plan will form part of this permit.

The Micro-siting plan must be fully dimensioned and drawn to a scale of 1:100. The footprint for each turbine identified on the Micro-siting Plan:

a) Must not extend more than 100 metres in any direction from the centre of the turbine at ground level as shown on the development plans endorsed under condition 1.

b) Must not be any closer to a dwelling on an adjoining non-host property than shown on the endorsed development plans and must not be within 1 kilometre of a dwelling unless the operator has provided evidence to the satisfaction of the responsible authority that the owner of the dwelling has consented in writing to the location of the turbine footprint.

c) Must not be located in or closer to any area marked as a 'works exclusion area' or habitat buffer on the endorsed development plans.

d) Must not be in conflict with the conditions of Cultural Heritage Management Plan 12657 and Cultural Heritage Management Plan 12658

e) Must consider the impacts on groundwater.

5. Any changes to access tracks, electricity cabling and associated infrastructure arising from micro-siting a turbine in accordance with an endorsed Micro-siting Plan are permitted without requiring the consent of the responsible authority or any amendments to the development plans endorsed under condition 1.

6. The endorsed Micro-Siting Plan must not be altered or modified without the written consent of the responsible authority.

LANDSCAPING

7. Before development starts, an Off-Site Landscaping Program must be submitted to, approved and endorsed by the responsible authority. When endorsed the Off-Site Landscaping Program will form part of this permit.

The Off-site Landscaping Program must:

a) Provide for off-site landscaping or other treatments to reduce the visual impact of the turbines from any dwelling within 5 kilometres of a wind turbine, to the satisfaction of the responsible authority.

b) Include a methodology for determining:
   i. the type of landscaping treatments to be proposed
   ii. the species and planting treatments to enhance existing Ecological Vegetation Classes and habitat values where possible ~~and~~
   iii. a timetable for establishing and maintaining the landscaping for at least two years.

c) Include a process for making offers to affected landowners to be available for acceptance 1 year post-completion of construction to either:
   i. establish and maintain the landscaping on the landowner's land, for a period of at least two years; or
   ii. make a cash contribution in lieu (which must be sufficient to cover the cost of the landowner establishing and maintaining the landscaping, for a period of at least two years).

d) Include a process for recording:
   i. offers that have been made to landowners;

ii. whether or not the offers are accepted; and
iii. when and how offers are actioned following acceptance.

e) include a process for the preparation and provision of progress reports regarding the implementation of the endorsed Off-site Landscaping Program to be provided to the responsible authority annually from the date the off-site landscaping program is endorsed until 3 years post construction and at other times, and at other times on request.

8. Before development starts, an On-Site Landscaping Plan must be prepared and approved by the responsible authority. When endorsed, the on-site landscaping plan will form part of this permit.

The On-Site Landscaping plan must:

a) Include plans drawn to scale showing the extent and layout of any landscape plantings to be used to visually screen any on-site buildings or works other than the wind turbines.

b) Provide details of plant species proposed to be used in the landscape plantings, including height and spread at maturity.

c) Consider how species selection and planting treatments can enhance existing Ecological Vegetation Classes and habitat values where possible.

d) Provide a timetable for implementation of all landscaping.

e) Provide a maintenance and monitoring program.

9. The endorsed On-site Landscaping Plan and Off-site Landscaping Program:

a) Must be implemented to the satisfaction of the responsible authority.
b) Must not be altered or modified without the written consent of the responsible authority.

NOISE

10. Before plans are endorsed under condition 1 of this permit, a pre-construction (predictive) noise assessment report with the selected turbine model and final turbine layout must be submitted that demonstrates that the proposal can comply with the *New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise*, ~~including an assessment of whether a high amenity noise limit is applicable under Section 5.3 of the Standard~~ to the satisfaction of the responsible authority. The pre-construction noise assessment report should demonstrate how the proposal can achieve an equivalent noise limit consistent with the high amenity noise limit where practicable to the satisfaction of the responsible authority.

11. The pre-construction noise assessment report must be accompanied by a report prepared by an environmental auditor appointed under Part 8.3, Division 3 of the *Environment Protection Act 2017* that verifies if the acoustic assessment undertaken for the purpose of the pre-construction (predictive) noise assessment report has been conducted in accordance with the *New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise*.

SHADOW FLICKER

12. Before development starts, a pre-construction assessment of the potential effects of shadow flicker from turbines at any pre-existing dwelling as of 18 August 2022 is to be undertaken for the final turbine layout in accordance with the DELWP (2021) *Policy and*

Planning Guidelines for the Development of Wind Energy Facilities in Victoria. The assessment must be submitted to, approved and endorsed by the responsible authority.

13. Shadow flicker from the wind energy facility must not exceed 30 hours per annum at any pre-existing dwelling as of 18 August 2022, unless an agreement has been entered into with the relevant landowner waiving this requirement. The agreement must be in a form that applies to the land comprising a pre-existing dwelling for the life of the wind energy facility, to the satisfaction of the responsible authority, and must be provided to the responsible authority upon request.

TELEVISION, INTERNET AND RADIO RECEPTION AND INTERFERENCE

14. Before development starts, a television, internet and radio reception strength survey must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the survey will form part of the permit.

15. The television, internet and radio reception survey must be to the satisfaction of the responsible authority, and must:
    a) Be carried out by a suitably qualified and experienced independent television and radio monitoring specialist.
    b) Include testing at selected locations within 5 kilometres of the facility to enable the average television and radio reception strength to be determined.

16. If a complaint is received regarding the effect of the facility on television, internet or radio reception at a pre-existing dwelling as of 18 August 2022 within 5 kilometres of the site, the operator must:
    a) Investigate the complaint in accordance with the Complaint Investigation and Response Plan required by this permit.
    b) If the investigation indicates that the facility has had a detrimental impact on the quality of reception, restore reception at the pre-existing dwelling to at least the quality determined in the television, internet and radio reception strength survey required by this permit, to the satisfaction of the responsible authority.

TRAFFIC MANAGEMENT

Vehicle access points

17. Vehicle access points must be designed and located to the following standards, to the satisfaction of the relevant road management authority:
    a) Truck movements to and from the land must be able to be accommodated on sealed roadways where available.
    b) To the extent practicable, access points must be able to accommodate turning movements without vehicles encroaching onto the incorrect side of the road.
    c) Safe sight distances must be provided.
    d) Potential through traffic conflicts must be avoided.

Pre-construction public road survey

18. Before development starts, a Pre-Construction Public Road Survey must be submitted to and endorsed by the responsible authority. Once endorsed the survey will form part of the permit.

The Pre-Construction Public Road Survey must assess the suitability, design, condition and construction standard of the relevant public roads and access points, and must:

a) Be prepared by a suitably qualified and experienced independent civil or traffic engineer

b) Include recommendations, if any, regarding upgrades required to accommodate construction traffic, and to meet the requirements of condition 17.

c) Be approved by the relevant road management authority prior to submission to the responsible authority for endorsement.

Traffic Management Plan

19. Before the development starts, a traffic management plan must be prepared in consultation with and to the satisfaction of Moyne Shire Council and the Head, Transport for Victoria.

20. The traffic management plan must include:

a) The scope of the expertise, duties and role of the nominated Road Quality Auditor engaged in accordance with condition 21, including inspection frequency and reporting requirements.

b) The number and type of anticipated vehicle movements and the time of day when local Moyne Shire Council managed roads will be used.

c) The nominated routes for traffic accessing and departing the wind energy facility site.

d) An existing conditions survey (including testing of road base) of Moyne Shire Council managed public roads and any arterial roads as identified in consultation with Head, ~~TfV~~ Transport for Victoria that may be used in connection with the wind energy facility by heavy vehicles (for access, pre-construction, or construction purposes), including details of the suitability, design, condition, and construction standard of the relevant public roads.

e) The designation of all vehicle access points to the wind energy facility site from surrounding roads. Vehicle access points must be designed and located to ensure safe sight distances, turning movements, and avoid potential through traffic conflicts.

f) Specific measures to be taken to ~~manage~~ minimise traffic impacts associated with the construction of the wind energy facility including to ensure the construction workforce enters and exits the land from the nominated vehicle access points, a stock control plan, identification of construction vehicles, road safety, specific locations where truck wheel wash stations will be located, and time periods that will avoid the use of relevant sections of public roads when they are being used by school buses.

g) Measures to review estimated traffic associated with the construction of the Wind Energy Facility on the nominated road network.

h) The estimated quantity of materials and number of traffic movements required to construct all internal access tracks, hardstands and turbine foundations.

i) The designation of appropriate pre-construction, construction, and transport vehicle routes to and from the wind energy facility site, including designation of transport vehicle routes being used to establish the on-site quarries.

j) Engineering plans demonstrating whether, and if so how, truck movements to and from the wind energy facility site can be accommodated on sealed roadways and

turned without encroaching onto the incorrect side of the road to the extent practicable.

k) Measures to be undertaken to record project generated traffic volumes on the nominated road network during the construction of the wind energy facility.

l) Recommendations regarding the need for road and intersection upgrades to accommodate any additional traffic or site access requirements (whether temporary or ongoing).

21. Where there is:

a) A significant increase in project generated vehicle numbers, determined by the Road Quality Auditor, above the anticipated vehicle movements identified in the endorsed traffic management plan; or

b) Any change to an endorsed vehicle route identified in the traffic management plan,

the traffic management plan must be amended in consultation with the Moyne Shire Council and the Head, Transport for Victoria within 28 days of the event described in this condition or the above condition.

22. Prior to endorsement of the traffic management plan, the permit holder must submit to the Moyne Shire Council and the Head Transport for Victoria for approval the identity of a suitably qualified engineer, independent of the proponent's traffic adviser who will undertake the duties of the Road Quality Auditor identified in the traffic management plan. Once approved, the permit holder must engage, at its cost, the approved Road Quality Auditor to fulfil the requirements of the Road Quality Auditor as defined in the traffic management plan.

Note: Prior to any works commencing within any arterial road reserve, the applicant must enter into a works agreement with the Head, Transport for Victoria, confirming design plans and works approvals processes, including the determination of fees and the level of the Head, Transport for Victoria service obligations. Contact: southwestworks@roads.vic.gov.au

Traffic upgrade works

23. Before the commencement of construction, road construction works as follows must be undertaken, completed and assessed by the Independent Road Quality Auditor to the satisfaction of the responsible authority:

a) In consultation with the road authority, South Road must be designed and constructed with a typical width of up to road with gravel shoulders and associated drainage based on civil design. The width may be reduced to minimise environmental disturbance to listed native grasslands and Striped Legless Lizard habitat.

b) The ~~following intersections~~ Mortlake – Ararat Road and South Road intersection must be upgraded to accommodate oversized vehicle turning movements.

c) The bridge on South Road must be replaced with a design based on a hydrogeological assessment of the Blind Creek catchment and appropriate environmental and habitat management for Hairy Burrowing Crayfish and Little Galaxias. ~~approved and to the satisfaction of the responsible authority~~.

24. Where traffic upgrade works are recommended or required under the Pre-construction Public Roads Survey under condition 18, endorsed traffic management plan, or any other plan report required by any condition of this permit, the following documents must be

submitted to and approved to the satisfaction of the relevant road management authority prior to commencement of the traffic upgrade works:

a) detailed plans for the required works; and

b) a program indicating when the works will be undertaken.

Traffic upgrade works must be completed to the satisfaction of the relevant road management authority.

Note: Relevant road management authority is Head, Transport for Victoria *for arterial roads and Moyne shire for local roads.*

ENVIRONMENTAL MANAGEMENT PLAN

25. Before development starts, an environmental management plan must be submitted to, approved and endorsed by the responsible authority. When endorsed the environmental management plan will form part of this permit. The environment management plan must:

a) Describe measures to minimise any amenity and environmental impacts of the construction, operation and decommissioning of the wind energy facility and utility installation.

b) Be generally in accordance with the Mt Fyans Wind Farm Environmental Management Plan Framework (27 March 2023) including the preparation of sub plans identified in it

c) Provide for the clear demarcation on the ground of any areas to be avoided for ecological and cultural heritage reasons.

d) In respect of decommissioning, include a hydrocarbon and hazardous substances management plan.

e) Include responsibilities, and procedures for staff training and communication, monitoring of each sub-plan and incident response protocols.

f) Include measures for managing biosecurity during construction and operational phases.

g) Provide for the implementation of the conditions of Cultural Heritage Management Plan 12657 and Cultural Heritage Management Plan 12658.

h) Integrate with the fire risk management plan, fire management plan and emergency management plan and identified fire management measures required by conditions 59, 60 and 61.

i) Surveys for Hairy Burrowing Crayfish should be extended to include Little Galaxias.

j) Include an Offset Management Plan for Striped Legless Lizard including offsets for up to 3.576 hectares of habitat loss.

k) Provide for a Construction Environment Management Plan, which must include:
   i) a field investigation to confirm the local hydrogeological conditions (and the presence of groundwater) and inform detailed design
   ii) procedures to manage localised flooding events, dust and noise emissions, erosion, mud and stormwater run-off and other risks to including to surface waters, groundwater quality and groundwater recharge
   iii) procedures to manage environmental impacts of any dewatering on groundwater associated with the construction of turbine footings
   iv) procedures to remove temporary works, plant, equipment, buildings and staging areas, and reinstate the affected parts of the land, when construction is complete

v) include requirements of DEECA (Environment Portfolio) condition 42 and 43 and the relevant conditions of the Glenelg Hopkins Catchment Management Authority (Conditions 48-58).

26. The endorsed environmental management plan:
    a) Must be implemented to the satisfaction of the responsible authority.~~; and~~
    b) Must not be altered or modified without the written consent of the responsible authority.

Bat and Avifauna Management Plan

27. The environmental management plan must include a bat and avifauna management plan (BAM Plan) prepared in consultation with DEECA (Environment Portfolio) to the satisfaction of the responsible authority, which in respect of Southern Bent-wing Bat is generally in accordance with the Southern Bent-wing Bat Adaptive Management Plan for Mt Fyans Wind Farm (Biosis, February 2022) included in the Mt Fyans Wind Farm: Targeted surveys and impact assessment (Biosis, 16 November 2022), and must include:
    a) A statement of the objectives and overall strategy for minimising bird and bat mortalities arising from the operation of the wind energy facility.
    b) Mitigation measures (including roles and responsibilities for undertaking mitigation measures) for listed threatened or other species including but not limited to:
        i. Southern Bent-wing Bat
        ii. Grey-headed Flying Fox
        iii. Curlew Sandpiper
        iv. Brolga
        v. White-throated Needle-tail
        vi. Common Sandpiper
        vii. Gang Gang Cookatoo
        viii. Wedge-tailed Eagle.
    c) A site plan which show areas of higher Southern Bent-wing Bat activity, habitat features, corridors and buffers to be avoided.
    d) A mortality monitoring program for the life of the Project ~~of at least three years duration~~ that commences when the first turbine is commissioned or such other time approved by DEECA (Environment Portfolio). The monitoring program must include:
        i. procedures for reporting monthly any bird and bat strikes of identified species to DEECA (Environment Portfolio)
        ii. information on the efficacy of searches for carcasses of bats, and, where practicable, information on the rate of removal of carcases by scavengers, so that correction factors can be determined to enable calculations of the likely total number of mortalities
        iii. include an annual monitoring review, reporting and revision process which considers the effectiveness of all mitigation measures, the latest scientific understanding and the cumulative impacts of other wind energy facilities.
    d) Procedures for the regular removal of carcasses likely to attract raptors to areas near turbines be approved by DEECA (Environment Portfolio) prior to submission to the responsible authority.

Panel note: Condition 27 will need to reflect the approved BAM Plan recommended by the Panel as part of the further work required under Recommendation 1.

28. When each year of the monitoring program required under the BAM Plan is complete, the operator must submit an annual report to the responsible authority and DEECA (Environment Portfolio), setting out the findings of the program. The report must be:
    a) to the satisfaction of the responsible authority and DEECA (Environment Portfolio); and
    b) made publicly available on the operator's website.

29. After considering the findings of the monitoring program and consulting with DEECA (Environment Portfolio), the responsible authority may direct further investigation of impacts on birds and bats. The further investigation must be undertaken to the satisfaction of the responsible authority and DEECA (Environment Portfolio).

30. The Environmental Management Plan must include a Brolga Compensation Plan. The Plan must be prepared in consultation with DEECA (Environment Portfolio) to the satisfaction of the responsible authority. Once endorsed, the plan must be placed on the project website for the life of the project.

    The plan must:
    a) Be implemented for the life of the project.
    b) Identify the location of potentially at risk Brolga breeding, migration and flocking activities supported by regular ground and aerial surveys undertaken at appropriate times of the year to accommodate variability in environmental conditions.
    c) Include recommendations in relation to a mortality rate for Brolga which would trigger the requirement for responsive mitigation measures to be undertaken by the operator. This should include clear linkages to the BAM Plan and its mortality monitoring program. The upper limit of 7.9 projected collisions (at a minimum) should be applied to inform the calculation of compensation strategies.
    d) Specify who is accountable for implementing the plan and the monitoring required under the plan.
    e) Include the principles for the selection of Brolga breeding wetlands that will be enhanced.
    f) Require that prior to the commencement of works at each enhancement site, a signed copy of the delivery agreement/landholder agreement for the Brolga breeding site enhancement project must be submitted to the responsible authority. Agreements for the breeding site enhancement project must extend for the duration of the life of the wind energy facility.
    g) Include the methods of enhancement which will be determined at each enhancement site.
    h) Where appropriate, a program of appropriate fox baiting leading up to each breeding season.
    i) Specify monitoring and reporting requirements (including public reporting every year for the first 5 years and then every ~~after 1 year, 2 years,~~ 5 years for the life of the project, ~~10 years, 15 years, 20 years and 25 years~~ from when the plan is approved) on whether the plan is expected to achieve the 25-year zero net impact objective.

Panel note: Condition 30 will need to be amended to reflect the approved Brolga Compensation Plan recommended as part of the further work under Recommendation 1

31. Implementation of the brolga compensation plan required under condition 30 must commence before the development starts. Implementation must be to the satisfaction of the responsible authority in consultation with DEECA Environment Portfolio.

AUSNET SERVICES

32. No wind turbine shall be constructed within 200 metres of AusNet Transmission Group's easement, and no anemometry masts shall be constructed within 100 metres of the easement.
33. No buildings or structures are permitted on AusNet Transmission Group's easement other than interface works required for connection of the wind farm electrical system to the 500 kilovolt transmission line. Design plans for such works (including under crossings) must be submitted to and approved in writing by AusNet Transmission Group prior to the commencement of construction.
34. Details of any road or track construction and the installation of services within the easement must be submitted to AusNet Transmission Group and approved in writing prior to the commencement of work on site.
35. Gates must be installed in any new boundary fences that cross the easement to enable access by AusNet Transmission Group vehicles.
36. Natural ground surface levels on the easement must not be altered by the stockpiling of excavated material or by landscaping without prior written approval from AusNet Transmission Group.
37. A 'Permit to Work Adjacent to Exposed High Voltage Electrical Apparatus' must be obtained prior to the commencement of any works on the easement that involves the use of any plant or equipment exceeding 3 metres operating height.
38. Parking, loading, unloading and load adjustment of large commercial vehicles is not permitted on the easement.
39. All future works in the easement must be submitted to AusNet Transmission Group and approved in writing prior to the commencement of work on site.

DEPARTMENT OF ENERGY, ENVIRONMENT AND CLIMATE CHANGE (DEECA)

40. Before works begin, the permit holder must advise all persons undertaking the vegetation removal or works on site of all relevant permit conditions and associated statutory requirements or approvals.
41. The native vegetation permitted to be removed, destroyed, or lopped under this permit is for a total of up to 0.997 hectares as described in the 'Native Vegetation Removal Report', report ID BIO_2023_156 dated 27 March 2023.
42. Before works start, a construction environment management plan, including a specific Native Vegetation Plan prepared to the satisfaction of the responsible authority, must be submitted to and approved by DEECA (Environment Portfolio). When approved, the plans will be endorsed and will form part of this permit. The plans must include but not be limited to:

a) Detailed description of the measures to be implemented to protect the native grassland vegetation to be retained during construction works, and the person/s responsible for implementation and compliance. These measures must include the erection of fencing to clearly define works or no-gone zones to the satisfaction of the responsible authority.

b) Areas of listed grassland to be avoided to ensure their extent remains above 0.05 hectares.

c) Sediment and erosion control measures during construction to minimise sediment loads entering drainage lines, wetlands and waterways.

d) Standard vehicle and machinery hygiene measures to prevent the spread and introduction of weeds and pathogens into and around the site.

e) All works constructed or carried out must be in accordance with the endorsed plan.

f) ~~Minimisation of~~ Limiting native vegetation removal on South Road to the minimum extent necessary to upgrade South Road as required under a Traffic Management Plan approved under conditions 19 to 22.

43. Except with the written consent of the responsible authority, within the area of native vegetation to be retained and any tree or vegetation protection zone associated with the permitted use and/or development, the following is prohibited:

a) Vehicular or pedestrian access.

b) Trenching or soil excavation.

c) Storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products.

d) Entry and exit pits for the provision of underground services.

e) Any other actions or activities that may result in adverse impacts to retained native vegetation.

44. To offset the removal of up to 0.997 hectares of native vegetation, the permit holder must secure a native vegetation offset in accordance with Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017) as specified below:

a) A general offset of 0.225 general habitable units:
   i. located within the Glenelg Hopkins Catchment Management Authority boundary, ~~or~~ Moyne Shire or Southern Grampians Shire municipal areas
   ii. with a minimum strategic biodiversity values of at least 0.452.

b) The amounts required to be offset under conditions 45(a) and (b) may be reduced to the satisfaction of the responsible authority in respect of any native vegetation authorised to be removed under this permit which is not identified for removal on the plans endorsed under condition 1.

45. Before any native vegetation is removed, evidence that the required offset for the project has been secured must be provided to the satisfaction of the responsible authority in consultation with DEECA ~~DELWP~~ (Environment Portfolio). This evidence is one of both of the following:

a) An established first party offset site including a security agreement signed by both parties, and a management plan detailing the 10-year management actions and ongoing management of the site and/or

b) Credit extract(s) allocated to the permit from the Native Vegetation Credit Register.

46. A copy of the offset evidence will be endorsed by the responsible authority and form part of this permit. Within 30 days of endorsement of the offset evidence by the responsible authority, the applicant must provide a copy of the endorsed offset evidence to DEECA (Environment Portfolio) via BSW.Planning@delwp.vic.gov.au

47. Any pruning to the canopy of major structural branches of any tree to be retained must be undertaken in accordance with Australian Standard 4373-2007 – Pruning of Amenity Trees.

GLENELG HOPKINS CATCHMENT MANAGEMENT AUTHORITY

48. Unless otherwise required by Glenelg Hopkins Catchment Management Authority no wind turbines shall be installed at a minimum within 200 metres of Salt Creek, Blind Creek and wetlands (marked as WOfS 1987-2020 current wetland) identified on the plan at Figure 12.11 of the expert evidence statement of Mark Venosta dated 27 March 2023, and 30 metres of smaller intermittent streams as identified in the *Surface Water Assessment* (9 August 2022) included at Appendix V of the *Mt Fyans Wind Farm Planning Application* (December 2022).

    Prior to works commencing the following must be confirmed by Glenelg Hopkins Catchment Management Authority to the satisfaction of the responsible authority:

    a) Details of all wetland and low lying areas.

    b) Confirmation of required designated waterways, wetlands, major waterways and ephemeral waterway buffers if greater than identified in the Surface Water Assessment.

49. Prior to works commencing, a Works on Waterways Licence must be obtained from Glenelg Hopkins Catchment Management Authority for construction of all proposed vehicular and utility conduit crossings of designated waterways. Electrical conduit crossings should be aligned with access tracks.

50. Appropriate machinery hygiene measures shall be put in place during the construction phase.

51. Construction machinery shall be washed down before entering and (where required) exiting the site.

52. Sediment control measures shall be implemented prior to commencement and during the construction phase of the wind farm.

53. Sediment fences shall be installed within the waterway downstream of any culvert crossing construction site for the duration of the construction works and 3 months thereafter.

54. Where silt fences are employed for sediment control, they shall be constructed with a centre section lower than the ground levels at either end of the silt fence to avoid outflanking during storm events.

55. Where surface water or groundwater is to be used for construction purposes the appropriate permits shall be obtained from Southern Rural Water before commencement of works.

56. Quarry and associated infrastructure material plants will be located at least 100 metres from any watercourse.

57. Any washout area established at infrastructure plants will be located at least 100 metres from waterways or stormwater drains.

58. Any (domestic wastewater) treatment system installed is located at least 100 metres from drainage lines and water bodies.

COUNTRY FIRE AUTHORITY

59. Before plans are endorsed under condition 1, a risk management plan must be prepared generally in accordance with the Fire Risk Management Plan dated March 2023 prepared by Fire Risk Consultants but updated to reflect final design in consultation with the CFA and submitted to and endorsed by the responsible authority. The risk management plan must be prepared in accordance with the *Design Guidelines and Model Requirements - Renewable Energy Facilities (2022)* (CFA Guidelines).

60. Before plans are endorsed under condition 1, a fire management plan and emergency management plan must be prepared in consultation with the CFA and submitted to and endorsed by the responsible authority. The fire management plan and emergency management plan must be prepared in accordance with the CFA Guidelines, and propose risk controls for all identified risks and hazards. The proposed risk controls must include:
    a) No less than 4 dedicated fire water supplies each of a quantity of no less than 45kL, one each located at three site entrances (including the main site entrance) and at the entrance to the on-site substation. The fire water supplies must be provided otherwise in accordance with the CFA Guidelines and AS2419.1-2005: Fire hydrant installations.
    b) Suitable access roads that comply with the vehicle access requirements in CFA's *Design requirements – Vehicle Access and Water Supply Requirements in Residential Developments (2022)*.

61. Before the use commences, all fire protection measures shown on the endorsed plans (including separation distances, emergency vehicle access, firefighting water supply and equipment, and fire breaks) must be implemented. The fire protection measures must be maintained on a continuing basis for the life of the permit, to the satisfaction of the responsible authority.

AVIATION

62. Prior to commencement of construction of turbine towers:
    a) 'As constructed' details of wind turbines and meteorological monitoring masts exceeding 100 metres above ground level (AGL) must be reported to Civil Aviation Safety Authority (CASA) as soon as practicable after forming the intention to construct or erect the proposed object or structure, in accordance with Civil Aviation Safety Regulations Part 139.165(1)(2).
    b) 'As constructed' details of wind turbines and meteorological monitoring masts coordinates and elevation should be provided to Airservices Australia, using the following email address: vod@airservicesaustralia.com.

63. Any obstacles above 100 metre AGL (including temporary construction equipment) should be reported to Airservices Australia NOTAM office until they are incorporated in published operational documents. With respect to crane operations during the construction of the Project, a notification to the NOTAM office may include, for example, the following details:

a) the planned operational timeframe and maximum height of the crane; and

b) either the general area within which the crane will operate and/or the planned route with timelines that crane operations will follow.

64. Details of the wind farm should be provided to local and regional aircraft operators prior to construction in order for them to consider the potential impact of the wind farm on their operations.

65. To facilitate the flight planning of aerial application operators, details of the wind energy facility and utility installation, including the 'as constructed' location and height information of wind turbines, meteorological monitoring masts and overhead transmission lines should be provided to landowners so that, when asked for hazard information on their property, the landowner may provide the aerial application pilot with all relevant information.

66. Prior to the installation of transmission lines, any overhead transmission lines and/or supporting poles and towers that could adversely affect aerial agricultural operations should be identified including through consultation with local aerial agriculture operators and appropriately marked consistent with the *Aviation Safety Assessment* included at Appendix Q of the *Mt Fyans Wind Farm Planning Application* (December 2022) or other agreed treatment, all to the satisfaction of the responsible authority.

COMPLAINTS

Complaint Handing, Investigation and Response Plan

67. Before development starts a complaint, investigation and response plan must be submitted to, approved and endorsed by the responsible authority. When endorsed, the plan will form part of this permit.

The complaint handling, investigation and response plan must:

a) Respond to all aspects of the planning, construction and operation of the wind farm, other than operational noise from the turbines.

b) Be prepared in accordance with Australian/New Zealand Standard AS/NZS 10002:2014 – Guidelines for complaint management in organisations.

c) Include a process to investigate and resolve complaints (different processes may be required for different types of complaints).

68. The endorsed complaint handling, investigation and response plan must:

a) Be implemented and operated to the ongoing satisfaction of the responsible authority.

b) Not be altered or modified without the written consent of the responsible authority.

Publishing information about complaints handling

69. Before development starts, the following information must be made publicly available and readily accessible from the wind farm project website, and/or another publicly available resource to the satisfaction of the responsible authority:

a) A copy of the endorsed complaints handling, investigation and response plan.

b) A toll-free telephone number, email address and mailing address for lodging complaints and enquiries to the wind energy facility developer/operator.

Complaints Register

70. Before development starts, a complaints register must be established which records:
    a) The complainant's name and address (if provided), including (for noise complaints) any applicable property reference number contained in the report titled Mt Fyans Wind Farm Environmental Noise Assessment (15 August 2022) at Appendix L of the Mt Fyans Wind Farm Planning Application (December 2022).
    b) A receipt number for each complaint, which must be provided to the complainant.
    c) The time, date and description of the incident or event, and the prevailing weather and operational conditions at the time of the incident.
    d) A description of the complainant's concerns, including (for a noise complaint) the potential occurrence of special audible characteristics.
    e) The process for investigating the complaint, and the outcome of the investigation including:
        i. the actions taken to resolve the complaint
        ii. the noise complaints, the findings and recommendations of an investigation report undertaken in accordance with the Noise Management Plan prepared under the Environment Protection Regulations 2021.

71. All complaints properly received must be recorded in the Complaints Register.

72. A complete copy of the Complaints Register along with a reference map of complaint locations must be provided to the responsible authority and Moyne Shire Council quarterly during construction, and six monthly during the first 2 years of operation and then on each anniversary of the date of this permit.

DECOMMISSIONING

73. The following requirements must be met when a turbine(s) permanently ceases operation:
    a) The responsible authority must be notified within two (2) months after the turbines permanently ceases operation.
    b) Prior to commencing decommissioning works, a decommissioning traffic management plan must be submitted, approved and endorsed by the responsible authority. The plan must specify measures to manage traffic impacts associated with removing the turbine) and associated infrastructure from the site to the satisfaction of the responsible authority. When endorsed, the plan will form part of this permit and must be implemented to the satisfaction of the responsible authority.
    c) All infrastructure and plant, equipment above natural ground level, and access tracks that are no longer required for the ongoing use or decommissioning of the facility must be removed, except where the relevant landowner has agreed otherwise.
    d) Reinstatement of the site, or the relevant part of the site, to the condition it was in before development commenced, must occur to the satisfaction of the responsible authority.
    e) A resource recovery plan must be prepared, submitted and approved by the responsible authority, which includes details of materials that can be recovered, for re-use and recycling, from all infrastructure associated with the facility.
    d) Satisfy any related plans or measures set out in the endorsed Environmental Management Plan to the satisfaction of the responsible authority.

SUBDIVISION

74. The subdivision as shown on the endorsed plans must not be altered without the prior written consent of the responsible authority.

75. Prior to the issue of a statement of compliance for the subdivision, construction of the substation on the proposed new lot must be completed to the satisfaction of the responsible authority.

76. The owner of the land must enter into an agreement with:
    a) A telecommunications network or service provider for the provision of telecommunication services to each lot shown on the endorsed plan in accordance with the provider's requirements and relevant legislation at the time.
    b) A sustainably qualified person for the provision of fibre ready telecommunication facilities to each lot shown on the endorsed plan in accordance with any industry specifications or any standards set by the Australian Communications and Media Authority, unless the applicant can demonstrate that the land is in an area where the National Broadband Network will not be provided by optical fibre.

77. Before the issue of a statement of compliance for any stage of the subdivision under the Subdivision Act 1988, the owner of the land must provide written confirmation from:
    a) A telecommunications network or service provider that all lots are connected to or are ready for connection to telecommunications services in accordance with the provider's requirements and relevant legislation at the time.
    b) A suitably qualified person that fibre ready telecommunication facilities have been provided in accordance with any industry specifications or any standards set by the Australian Communications and Media Authority, unless the applicant can demonstrate that the land is in an area where the National Broadband Network will not be provided by optical fibre.

78. The owner of the land must enter into agreements with the relevant authorities for the provision of water supply, drainage, sewerage facilities, electricity and gas (where it is proposed to be connected) services to each lot shown on the endorsed plan in accordance with the authority's requirements and relevant legislation at the time.

79. All existing and proposed easements and sites for existing or required utility services and roads on the land must be set aside in the plan of subdivision submitted for certification in favour of the relevant authority for which the easement or site is to be created.

80. The plan of subdivision submitted for certification under the Subdivision Act 1988 must be referred to the relevant authority in accordance with Section 8 of that Act.

EMERGENCY SERVICES

81. Before development starts, the permit holder must provide spatial information data to Land Use Victoria via email vicmap.help@delwp.vic.gov.au to be used to direct emergency services to and within the site. This information must be in the ESRI Shapefile or Geodatabase.gdb format, GDA94 or GDA2020 datum and include:
    a) The location and boundaries of the wind energy facility extents polygon(s).
    b) All access entry points onto private property.
    c) All internal roads.

d) The locations of site compound, substations, and maintenance facilities.

82. If there are any subsequent changes to infrastructure location, internal roads or access points during construction, or after completion of construction, updated data must be provided to Land Use Victoria via email vicmap.help@delwp.vic.gov.au within 30 days of the change, to enable details of any changes to the facility to be known to emergency services dispatchers.

ACCESS TO ENDORSED PLANS AND REPORTS

83. The permit holder must display at all times on a project specific website, a copy of the planning permit and all endorsed documents including plans and management plans and monitoring reports to the satisfaction of the responsible authority.

EXPIRY

84. This permit will expire if one of the following applies:
    a) The development is not started within 5 years of the date of this permit.
    b) The development is not completed within 10 years of the date of this permit.
    c) The use is not commenced within 10 years of the date of this permit.