

*Planning and Environment Act 1987*

**Panel Report**

**Moyne Planning Scheme  
Application to Amend Planning Permit 2008/0538  
Mortlake South Wind Farm**

Front page

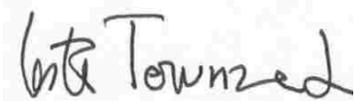
**8 February 2017**

*Planning and Environment Act 1987*

Panel Report pursuant to section 153, 155 and 97E of the Act

Mortlake South Wind Farm

8 February 2017



Lester Townsend, Chair



Phil West, Member

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## List of Abbreviations

Abbreviation	Meaning
BAM	Bat and Avifauna Management
BLA	Brett Lane & Associates
CASA	Civil Aviation Safety Authority
CFA	Country Fire Authority
dB	Decibel
DEDJTR	Department of Economic Development, Jobs, Trade and Resources
DELWP	Department of Environment, Land, Water and Planning
DEPI	Department of Environment, Planning and Infrastructure (former)
DSE	Department of Sustainability and Environment (former)
DTPLI	Department of Transport, Planning and Local Infrastructure (former)
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESO	Environmental Significance Overlay
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
FZ	Farming Zone
MDA	Marshall Day Acoustics
NIRV	Noise from Industry in Regional Victoria
Noise Standard	<i>NZS 6808:2000 Acoustics – Wind farm noise</i>
ODV	Over dimensional vehicles
P&E Act	<i>Planning and Environment Act 1987</i>
RSA	Rotor sweep area
SLO	Significant Landscape Overlay
VCAT	Victoria Civil and Administrative Tribunal
VPO	Vegetation Protection Overlay
WEF	Wind Energy Facility
WEF Guidelines	<i>Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (January 2016)</i>

## Overview

### Amendment Summary

<b>The proposal</b>	Moyne Planning Scheme Application to Amend Planning Permit 2008/0538
<b>Common name</b>	Mortlake South Wind Farm
<b>Brief description</b>	The Minister for Planning is considering an application to amend the planning permit for the Mortlake South Wind Farm. The permit was issued by the Minister for Planning in 2008 under Division 6 of the <i>Planning and Environment Act 1987</i> .
<b>Subject site</b>	Mortlake South – being land bounded by the Mortlake Framlingham Road to the west, Hinkleys Lane and Terang–Mortlake Road to the north, McRae Road to the east and Londrigans Lane to the south
<b>Permit applicant</b>	Acciona Energy Australia Pty Ltd (the Proponent)
<b>Responsible authority</b>	Minister for Planning represented by Department of Environment Land Water and Planning (DELWP)
<b>Exhibition</b>	Public notice of the Application took place between 28 September and 28 October 2016
<b>Submissions</b>	Number of Submissions: 37 Opposed: 16 Letters of support: 21

### Panel Process

<b>The Panel</b>	Nick Wimbush (Chair) and Phil West were appointed as the Panel on 3 October 2016. On 23 November 2016 the appointment was cancelled as Mr Wimbush was unable to Chair this matter due to timing constraints. Lester Townsend (Chair) and Phil West were appointed as the Panel on 23 November 2016.
<b>Directions Hearing</b>	Glenormiston College, Glenormiston, 15 November 2016
<b>Panel Hearing</b>	Glenormiston College, Glenormiston, 28 November – 1 December 2016
<b>Site inspections</b>	28 November 2016
<b>Appearances</b>	Refer to Appendix B
<b>Date of this report</b>	8 February 2017

## Executive Summary

### (i) Summary

Moyne planning permit 2008/0538 was issued by the Minister for Planning in October 2010 allowing for the use and development of the land for a wind farm.

The planning permit includes conditions relating to turbine numbers, overall maximum turbine height, blade length and tower height. The permit allows for up to 51 turbines. The planning permit conditions included a restriction of a 141 metre tip height, a 41 metre rotor blade length and a maximum 100 metre tower height.

This report deals with an application to amend that permit.

The Application seeks to amend the existing planning permit under Section 97I of the Act to:

- correct the address of the land and title details
- allow for the removal of native vegetation, and include conditions about that removal
- reduce the permitted number of wind turbines from 51 to 42
- change the overall maximum height of the wind turbines from 141 metres to 186 metres
- change the maximum tower height from 100 metres to 120 metres
- remove the restriction on blade length, and replace with a restriction on the lowest swept height of 18 metres above the ground level
- change the aviation obstacle lighting specification
- reduce the operational bird and bat monitoring period from 5 year to 2 years
- change the Noise condition to specifically require compliance under the contemporary NZS6808:2010 noise standard.

During the Hearing the further changes were agreed to by the Proponent in response to submissions. These include:

- change the description of who is the authority for secondary consents
- introduce a requirement for a Road Quality Auditor
- change specifications for the Traffic Management Plan
- changes to the Complaint Investigation and Response Plan.

The main objections identified in submissions are:

- views and visual amenity
- greater setbacks
- traffic and impacts on roads
- birds and avifauna
- noise
- aviation
- Moyne Council as responsible authority.

A number of issues are not relevant to this Application because a permit has already been issued. In some cases these issues are dealt with by existing permit conditions or are not matters that are typically considered in planning applications. The issues include:

The Application is for an amendment to an existing permit, not a new application. The scope of submissions, including from the Proponent, is confined to the changes from the existing approved project rather than undertaking a 'first principles' review.

The Panel approached the assessment of the Application within the framework of the *Planning and Environment Act 1987* including the Moyne Planning Scheme and called up instruments including the *Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria* (January 2016) and the New Zealand wind farm noise standard NZS6808:2010 which applies in Victoria.

The following is a summary of the Panel's findings on the main issues:

- The visual and landscape impacts of the proposed amendments are considered acceptable, and are not significantly different to the current permit, but the visual impact assessment was based on a smaller turbine than the maximum permitted under the proposed permit.
- The landscaping mitigation should be offered to the owners of houses further than 3 kilometres if the height of the turbines increases.
- A comprehensive Traffic Management Plan for both the construction and operation phases of the wind farm project should be prepared by the Proponent to the satisfaction of Moyne Council and VicRoads.
- The condition of the roads and road reserve potentially impacted by construction traffic should be monitored to ensure safe conditions for both the road users and construction vehicles.
- Traffic management conditions need to be revised once the Proponent has decided if it intends to construct the wind turbine towers of concrete or steel.
- The permit should provide for the removal of native vegetation.
- There is no need to re-survey the local bird population.
- The fauna impact assessment was based on a smaller turbine than the maximum permitted under the proposed permit.
- An increased minimum rotor sweep height should be specified to reduce the impact of the turbines on birds.
- Bird monitoring should continue for 5 years.
- The Proponent will need to remodel the wind farm noise impacts once the final turbine design has been chosen and report the modelling for the approval of the Minister for Planning.
- Marshall Day Acoustics noise modelling for the Proponent indicates that the potential noise levels will be less than the limit of 40 dB  $L_{A90(10min)}$  specified in the Noise Standard.
- Marshall Day Acoustics noise modelling for the Proponent indicates that the potential noise levels will be within 1 dB or less of the high amenity limit of 35 dB  $L_{A90(10min)}$  at most of the noise sensitive residences identified.

- The Panel prefers that the noise compliance testing involves the measurement of noise from the WEF using the on/off measurement technique described in section 23.e)(ii) of the permit so that the background noise levels without the influence of the wind farm noise can be determined.
- Noise from associated wind farm construction activities such as truck routes on non-arterial roads where the existing traffic is relatively small and the use of local resources such as quarries be managed by the hours of operation and permitted noise levels specified in the EPA Noise Control Guidelines.

Overall, the Panel supports the proposed amendments to the permit. Despite the proposed increase in turbine size, the Panel concludes that the expected impacts are manageable.

## **(ii) Recommendations**

**Based on the reasons set out in this Report, the Panel recommends that the proposed amendments to Moyne Planning Scheme Planning Permit 2008/0538 Mortlake South Wind Farm be amended as set out in the Panel preferred version in Appendix D of this report, which incorporates the following recommendations on specific issues:**

1. Specify a maximum blade length of 73 metres with the potential for a longer blade subject to secondary consent.
2. Amend Condition 5.a) to read:
  - *A program of voluntary landscape mitigation works to the satisfaction of the Minister for Planning must be made available to the owners of dwellings within 3.0 kilometres plus 20 metres for every metre the overall maximum turbine height exceeds 141 metres, of the nearest turbine.*
3. Amend the introduction to Condition 12 to read
  - *Before the development starts, a traffic management plan must be prepared in consultation with Corangamite Shire Council and the Minister for Planning to the satisfaction of Moyne Shire Council and VicRoads. When approved, the plan will be endorsed and will then form part of this permit.*
4. Retain the five year period for monitoring in the Bat and Avifauna Management Plan in Condition 19.b) and 20.
5. Specify a lowest swept height no lower than 40 metres above natural ground subject to secondary consent.
6. Amend Condition 22.a) to specify the actual noise limit in decibels.

# 1 Introduction

## 1.1 The permit

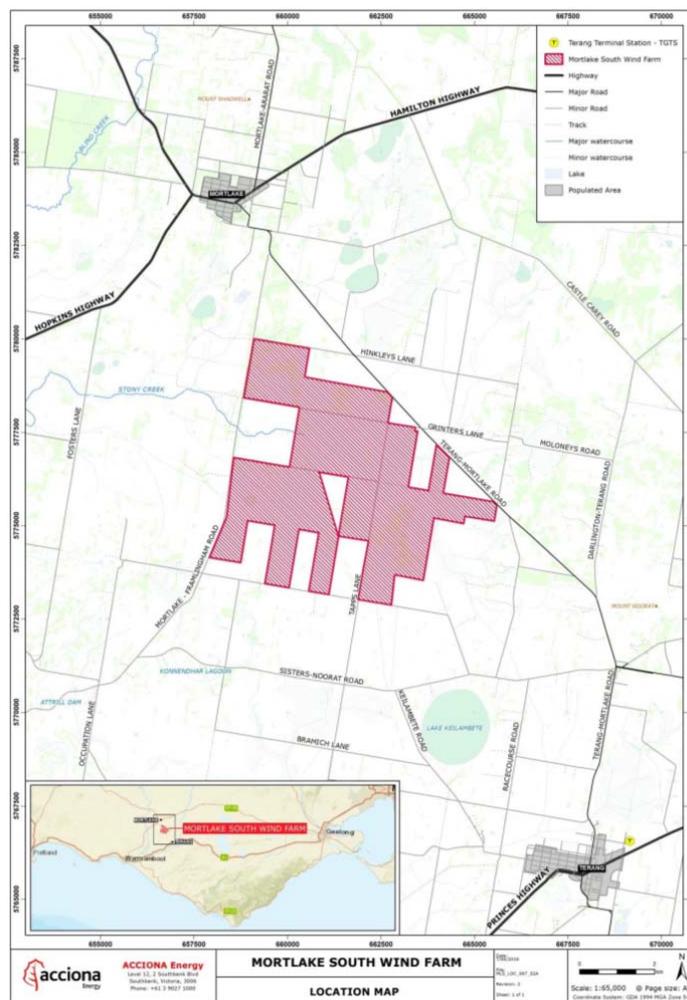
Moyne planning permit 2008/0538 was issued by the Minister for Planning in October 2010 allowing for the use and development of the land for a wind farm.

The planning permit includes conditions relating to turbine numbers, overall maximum turbine height, blade length and tower height. The permit allows for up to 51 turbines. The planning permit conditions included a restriction of a 141 metre tip height, a 41 metre rotor blade length and a maximum 100 metre tower height.

This report deals with a request to amend that permit.

The Mortlake South Wind Farm site is located within the Moyne Shire, approximately 5 kilometres south of Mortlake, in south western Victoria. It is proposed that the facility will be constructed on cleared, flat land that is currently used for dairy farming.

Figure 1: Site Plan showing the location of Mortlake South Wind Farm



## 1.2 The current planning permit

The Mortlake South Wind Farm site originally comprised two distinct geographic project sections: the Mortlake East section that was proposed to be located 20 kilometres east of the Mortlake Township and 5 kilometres south of Darlington; and the Mortlake South section which is proposed to be developed at a site approximately 5 kilometres south of Mortlake.

In October 2010, the Minister issued the planning permit allowing for the use and development of the land for a wind farm for the Mortlake South section only.

Table 1: Chronology of the Application

Date	Event
3 November 2008	Original planning application 2008/0538 lodged with the Minister for Planning for the development and use of the wind farm. The Application was a single application for Mortlake South and Mortlake East wind farms.
7 January 2009	Minister for Planning called in the Application in accordance with Section 97C of <i>Planning and Environment Act 1987</i> (the Act).
November 2009	Public notice given and submissions were received, these submissions were referred to a planning panel.
February and March 2010	A planning panel hearing held.
August 2010	The panel handed down its report. The panel recommended approval of the Mortlake South section of the project. The panel recommended that a permit not be issued for the east section of the project until the completion of further bird and avifauna investigations.
October 2010	A permit was issued by the Minister for Planning allowing for the use and development of the land for a wind farm for the South section only.
November 2012	The Proponent lodged a development plan package addressing each of the relevant conditions of the planning permit.
21 December 2012	The development plans endorsed by the Department of Planning and Community Development on behalf of the Minister for Planning.
17 September 2013	The Proponent commenced construction works on phase one of the Mortlake South Wind Farm. This work was commenced before the expiry of the permit.
August 2015	The Minister for Planning granted an extension of time to Planning Permit 2008/0538. The planning permit will now lapse if development has not been completed before 7 October 2020.
April 2016	The Proponent lodged its amendment Application.

Date	Event
30 August 2016	Having responded to requests for further information, the Proponent lodged the final version of its Application.
28 September – 28 October 2016	Public notice of the Application
3 October 2016	Nick Wimbush (Chair) and Phil West appointed as Panel
Glenormiston, 15 November 2016	Directions Hearing Glenormiston College
23 November 2016	Panel reconstituted as Lester Townsend (Chair) and Phil West.
28 November – 1 December 2016	Panel Hearing

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### 1.3 The Application

#### What is sought

The Proponent seeks an amendment to the planning permit to allow for a reduced number of newer and more efficient wind turbines compared to the current permit.

The Application sought to amend the existing planning permit under Section 97I of the Act to:

- correct the address of the land and title details
- allow for the removal of native vegetation, and include conditions about that removal
- reduce the permitted number of wind turbines from 51 to 42
- change the overall maximum height of the wind turbines from 141 metres to 186 metres
- change the maximum tower height from 100 metres to 120 metres
- remove the restriction on blade length, and replace with a restriction on the lowest swept height of 18 metres above the ground level
- change the aviation obstacle lighting specification
- reduce the operational bird and bat monitoring period from 5 year to 2 years
- change the Noise condition to specifically require compliance under the contemporary NZS6808:2010 noise standard.

During the Hearing the further changes were agreed to by the Proponent in response to submissions. These include:

- change the description of who is the authority for secondary consents
- introduce a requirement for a Road Quality Auditor
- change specifications for the Traffic Management Plan
- changes to the Complaint Investigation and Response Plan.

## 1.4 Summary of issues raised in submissions

Concern was expressed that the Application material was not exhaustive and of questionable quality. The Panel has not found deficiencies in the material presented.

The main objections identified in submissions are:

- **Views and visual amenity** – The turbines would disrupt views and impact visual amenity as turbines would be taller than surrounding relatively flat landscape.
- **Greater setbacks** – The turbines would impose themselves on neighbours and that there should be greater setbacks. The layout should be amended to position the taller turbines further away from neighbouring residences.
- **Traffic and impacts on roads** – The roads used for the construction and operation of the project should be maintained in a safe and fit for purpose condition.
- **Birds and avifauna** – There will be increased death of birds and avifauna and concern at reducing the requirement of monitoring of them from five to two years.
- **Noise** – There will be a general increase of noise from the revised WEF and noise monitoring should be carried out by neutral bodies not engaged by the proponents (concern that there is currently no independent monitoring of noise). Associated noise impact on human health and wellbeing were raised.
- **Aviation** – Aviation lights will be seen from far away and, conversely, there should be aviation lights required and detrimental effect on useability of the South Boorook airstrip.
- **Moyne Council as responsible authority** – Moyne expressed concern that matters in the permit were to the satisfaction of the Minister for Planning, but that it was the responsible authority for administration.

A number of issues are not relevant to this Application because a permit has already been issued. In some cases these issues are dealt with by exiting permit conditions or are not matters that are typically considered in planning applications. The issues include:

- **Site suitability** – Site is not suitable due to the intense farming of this location and the number of people living in close proximity. This scale of development would be more suited to a less populated area. A permit has already been issued and so this is not a relevant issue.
- **Disrupt/interfere** – The proposal will disrupt/interfere TV, telephone reception, mobile phone and emergency communications. This is covered by exiting permit conditions.
- **Shadow flicker** will increase. This is covered by exiting permit conditions.
- **Property prices** – Decrease property prices and ability for residential development nearby. This is not a relevant planning consideration in this case.

The Panel considered all written submissions made in response to the exhibition of the Application; as well as further submissions, evidence and other material presented to it during the Hearing, and observations from site visits.

The Application is an amendment to an existing permit, not a new application. The scope of submissions, including from the Proponent, is confined to the changes from the existing approved project rather than undertaking a ‘first principles’ review.

The Panel approached the assessment of the Application within the framework of the *Planning and Environment Act 1987* including the Moyne Planning Scheme and called up instruments including the *Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria* (January 2016) *WEF Guidelines* and the New Zealand wind farm noise standard NZS6808:2010 (the Noise Standard) which applies in Victoria.

The Panel has reviewed a large volume of material. The Panel 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
- Landscape and visual impact
- Traffic
- Flora and Fauna
- Noise
- Other issues:
  - Correction and changes
  - Responsible authority
  - Aviation lights.

## 2 Planning context

### 2.1 Policy framework

The Proponent noted in its submission that the assessment of the Mortlake South Wind Farm against the planning framework is limited to the manner in which the proposed changes comply with the current planning controls and policies (noting any changes since the planning permit was originally granted).

#### (i) State Planning Policy Framework

The Proponent submitted that the Application is supported by the following clauses in the State Planning Policy Framework. The Proponent noted that *“Each of these policies are largely unchanged from the regime that applied at the time the [current] planning permit was granted”*.<sup>1</sup>

Clause 19.01 (Renewable energy) – this clause seeks to ‘promote’ and ‘facilitate’ renewable energy in Victoria, taking into account the economic and environmental benefits to the broader community while minimising the effects on the environment and local community.

The clause notes that economically viable wind farms require locations that have ‘consistently strong winds’ throughout the year. The clause states that planning must consider the *WEF Guidelines* where relevant

Clause 12 (Environment) and Clause 13 (Environmental risks) – these clauses discuss principles in relation to ecologically sustainable development, including protection of biodiversity (Clause 12.01-1), native vegetation management (Clause 12.01-2) and noise abatement (Clause 13.04-1).

Clause 14 (Natural resource management) contains policies that relate to the protection of agricultural land (Clause 14.02-1).

Clause 15.02-1 relates to energy and resource efficiency. This clause *“... encourages land use and development that is consistent with the efficient use of energy and the minimisation of greenhouse gas emissions”*.

#### (ii) Local Planning Policy Framework

The Proponent submitted that the Local Planning Policy Framework is mostly consistent with the framework that applied in 2010. It continues to note the importance of agriculture, tourism and the protection of significant landscapes in the region.

The Municipal Strategic Statement is focused on protecting the ‘long term viability’ of agriculture in the Shire, however notes *“... the need to manage significant natural resources opportunities to ‘diversify’ the Shire’s agricultural base”*<sup>2</sup> (Clause 21.03, 21.07).

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<sup>1</sup> Proponent’s submission Page 6.

<sup>2</sup> Proponent’s submission Page 6.

Clause 21.08 (Infrastructure and particular uses) – this clause notes that increasing pressure exists to provide and maintain infrastructure, including the increased cost of power supply establishment. Clause 21.07 notes the *“increasing amount of pressure for wind farms along the coastal hinterland”*.<sup>3</sup>

### **(iii) Other planning strategies or policies used in formulating the Amendment**

#### **The Wind Energy Facility Guidelines**

The *WEF Guidelines* aim to provide advice for responsible authorities, proponents and the community regarding the decision making framework that relates to wind farm proposals. The intention is to provide a framework for a ‘consistent and balanced approach’ to the assessment of wind energy projects in Victoria, and set consistent operational performance standards.

The *WEF Guidelines* have been a reference document in all planning schemes (including the Moyne Planning Scheme) rather than an incorporated document since March 2011.

The current version of the *WEF Guidelines* (most recently amended in January 2016) are largely unchanged from the version applicable in 2010, with the exception of structural changes and the inclusion of additional detail. Notable changes include those to ‘Flora and fauna impacts assessment’ and a more detailed discussion of the noise requirements under the NZS6808:2010.

The 2016 *WEF Guidelines* include a new policy in relation to significant landscapes, whereby *“... an assessment of the degree of visual impact of a wind energy facility must take into account landscape values associated with nearby land included in the schedule to Clause 52.32-2”*.<sup>4</sup> This includes *“... specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres”*.<sup>5</sup>

The schedule to Clause 52.32-2 in the Moyne Planning Scheme states that *“wind energy facilities are prohibited on all land within 5 kilometres of the high water mark of the coast east of the urban area of Warrnambool”*.<sup>6</sup> This restriction does not apply to the current site, because it is located approximately 40 kilometres from Warrnambool and 5 kilometres south of the township of Mortlake.

#### **Victoria’s Renewable Energy Roadmap**

In August 2015 Victoria’s Renewable Energy Roadmap – *Delivering jobs and a clean energy future*, was released. The Roadmap includes the following statements:

- *Climate change is one of the most critical issues facing our state;*
- *Victoria is committed to sustainable development and to decreasing Victoria’s reliance on non-renewable sources of energy;*

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<sup>3</sup> Proponent’s submission Page 6.

<sup>4</sup> Proponent’s submission Page 8.

<sup>5</sup> Proponent’s submission Page 8-9.

<sup>6</sup> Proponent’s submission Page 9.

- *The Victorian government believes targets are critical for ensuring growth in renewable energy generation. Therefore, as part of the Action Plan, Victoria will establish two targets for renewable energy generation in this state...*
- *... Growing the share of renewable energy in Victoria is a key part of the government's strategy to create jobs, particularly in rural and regional Victoria and with a focus on addressing the reduction in employment occurring in areas such as automotive manufacturing.*<sup>7</sup>

### **Victoria's Renewable Energy Auction Scheme**

In June 2016, the Victorian government committed to Victorian renewable energy generation targets of 25 per cent by 2020 and 40 per cent by 2025.<sup>8</sup> This involves the government auctioning up to 5,400 megawatts of additional capacity over the life of the scheme (based on current generation and demand forecasts).

### **Victoria's Regional Statement**

In November 2015 'Victoria's Regional Statement – your voice, your region, your state', was released. The statement comments on regional jobs, renewable energy and protecting the quality of life for regions. It states that Victoria is taking the lead on climate change action and becoming a low-carbon economy; this will deliver major benefits and jobs opportunities for regional Victoria.

## **2.2 Planning scheme provisions**

The Mortlake South Wind Farm site and neighbouring land is located within the Farming Zone (FZ). The Proponent stated that the provisions of the FZ are consistent with the regime that applied in 2010. The purposes of the FZ include:

- *Providing for the use of land for agriculture.*
- *Encouraging the retention of productive agricultural land.*
- *Ensuring that non-agricultural uses (including dwellings) do not adversely affect the use of the land for agriculture.*
- *Encouraging the retention of employment and population.*
- *Encouraging use and development based on sustainable land management practices and provision of infrastructure.*

No part of the site is subject to an overlay.

### **(i) Particular provisions**

#### **Clause 52.17 – Native Vegetation**

The purpose of Clause 52.17 is "To ensure permitted clearing of native vegetation results in no net loss in the contribution made by the native vegetation to Victoria's biodiversity".

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<sup>7</sup> DELWP submission Page 43.

<sup>8</sup> DELWP submission Page 44.

Pursuant to Clause 52.17-2, a planning permit is required to remove, destroy or lop native vegetation, including dead native vegetation.

### **Clause 52.32 – Wind Energy Facility**

The Proponent noted that Clause 52.02 has undergone changes since the current planning permit was granted but submitted that these were not material to the Application. The purpose of this clause is *“to facilitate the establishment and expansion of wind energy facilities in appropriate locations, with minimal impact on the amenity of the area”*. The decision guidelines include:

- *The effect of the proposal on the surrounding area in terms of noise, blade glint, shadow flicker and electromagnetic interference.*
- *The impact of the development on significant views including visual corridors and sight lines.*
- *The impact of the facility on the natural environment and natural systems.*
- *The impact of the facility on cultural heritage.*
- *The impact of the facility on aircraft safety.*
- *The [WEF Guidelines].*
- *The New Zealand Standard NZS6808:2010, Acoustics – Wind farm noise [updated from the 1998 standard applicable at the time the current planning permit was granted].*

A new Clause 52.32-3 requires the written consent of all owners and dwellings located within 1 kilometre of a proposed turbine. However, this clause does not apply to the Application because it does not propose to increase the number of turbines, and it does not seek to locate a turbine within 1 kilometre of a dwelling.

A new Clause 52.32-7 provides that:

*... applications to amend permits under section 72 of the Act are exempt from certain decision requirements and review rights under the Act where the application does not seek to increase the number of turbines or locate a turbine closer to an existing dwelling within one kilometre of a turbine than the closest permitted turbine to that dwelling.*

The Proponent noted that provision does not apply to it, as the Application was lodged under section 97I of the P&E Act.

## **(ii) General provisions**

### **Clause 65 – Decision Guidelines**

The following decision guidelines apply to the application:

- The matters set out in Section 60 of the P&E Act.
- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- The purpose of the zone, overlay or other provision.
- Any matter required to be considered in the zone, overlay or other provision.
- The orderly planning of the area.

- The effect on the amenity of the area.
- The proximity of the land to any public land.
- Factors likely to cause or contribute to land degradation, salinity or reduce water quality.
- Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.
- The extent and character of native vegetation and the likelihood of its destruction.
- Whether native vegetation is to be or can be protected, planted or allowed to regenerate.
- The degree of flood, erosion or 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.

## 3 Landscape and visual impact

### 3.1 Background

The original 2010 panel concluded there is little question that this wind farm, if approved, would be highly visible from vantage points locally and further afield. The low impact rating claimed in evidence at the original hearing appears to be primarily due to the low landscape value assigned to the area. The original panel noted the assessment and results in relation to landscape impact and considered that the material before it adequately assessed the impact of the proposal. Ultimately the impact was considered acceptable because a permit was issued.

A landscape and visual assessment was prepared in support of the Application. The potential for changes in impact stems from two key physical changes: the reduction in turbine numbers, and the increase in turbine height.

#### 3.1.1 Issues

The following issues were raised in submissions:

- the South West Victoria Landscape Assessment Study (SWVLAS)
- the accuracy and adequacy of the photomontages
- the increased visual impacts upon dwellings, visual amenity and broader character as a result of the turbine height increase
- the potential cumulative impacts arising from the Application.

#### 3.1.2 Proposed changes

The Proponent has proposed or accepted the following changes to the permit:

3. The wind energy facility must meet the following requirements:
  - a) the wind energy facility must comprise no more than ~~51-42~~ wind turbines;
  - b) the overall maximum height of the wind turbines (to the tip of the rotor blade when vertical) must not exceed ~~444-186~~ metres above natural ground level;
  - c) wind turbines must be mounted on a tubular tower with a height of no greater than ~~400-120~~ metres;
  - d) each wind turbine is to have not more than three rotor blades, with ~~each blade having a length of no greater than 41 metres~~ the lowest swept height no lower than 18 metres above natural ground level;
5. Within 6 months of the date of endorsement of the development plan under Condition 1:
  - a) a program of voluntary landscape mitigation works to the satisfaction of the Minister for Planning must be made available to the owners of dwellings within 3.0 kilometres of the nearest turbine;

## 3.2 South West Victoria Landscape Assessment Study

### (i) Evidence and submissions

It was submitted that the publication of the *South West Victoria Landscape Assessment Study (Southwest Landscape Study)* confers increased significance on elements of landscape character of the area as well formalising two significant viewpoints.

Submitters noted the designation of 'broad significance areas' within the *Southwest Landscape Study*, which include the Southern Cones and Lakes Investigation Areas. While not raised by submitters, the *Southwest Landscape Study* also designates a number of views of state and regional significance within the study area, namely views to Lake Gnotuk and Bullen Merri, and the view from Lake Keilambete towards Mount Noorat.

The *Southwest Landscape Study* was prepared in 2013, but has not yet been adopted by Moyne Shire Council and none of its recommendations have been implemented within planning policy.

Mr Kiekebosch (who was called by the Applicant) advised that the visual assessment considered the *Southwest Landscape Study* and its recommendations, in particular it:

- considered in the level of sensitivity assigned to the 'Volcanic Cones Landscape Character Type' (refer Section 8.2.1 of the 2016 SMEC LVIA)
- considered in the level of sensitivity assigned to the 'Volcanic Lakes Landscape Character Type' (refer Section 8.2.2 of the 2016 SMEC LVIA)
- undertook a Representative Viewpoint Assessment for the view over Lake Gnotuk (Viewpoint 13)
- undertook a Representative Viewpoint Assessment for the view from Lake Keilambete towards Mount Noorat. (Viewpoint 14).

Mr Kiekebosch concluded:

*An assessment of each of these elements has found that the varied project will have a negligible change in impact relative to the current approved permit configuration.<sup>9</sup>*

The *WEF Guidelines* include additional policy regarding significant landscapes, requiring an assessment of visual impact to take account of landscape values associated with nearby land. Neither the Mortlake South Wind Farm site nor surrounding land is covered by a Significant Landscape Overlay or any other planning scheme overlay.

The site is not near an area listed in the table or schedule to Clause 52.32 where a wind farm is prohibited. The Proponent submitted that the landscape and visual impact assessment conducted for the Application takes account of recent regional landscape assessment studies and specific concerns raised in submissions regarding the impact of the Application on the region.

The *WEF Guidelines* make reference to the prospect of "relevant local strategic studies may also be referenced in the Local Planning Policy Framework", and note that 'significant

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<sup>9</sup> Page 5

landscapes' may be recognised in overlays, such as the ESO, VPO or Significant Landscape Overlay (SLO).

The Proponent submitted that the *Southwest Landscape Study* does not have the status of a document 'referenced in the planning scheme', as identified in section 2.2.2 of the *WEF Guidelines*.

## **(ii) Discussion and conclusion**

The *Southwest Landscape Study* was prepared in 2013, but has not yet been adopted by Moyne Shire Council and none of its recommendations have been implemented within planning policy. The visual assessment for the Application did consider this document and its recommendations. It is noted that within the Corangamite Shire Council area, SLOs already apply to many of the features discussed within the *Southwest Landscape Study*.

The original panel noted:

*... that lack of statutory acknowledgement of landscapes in the planning system in regional areas is as much as a result of limited resources for studies as it is of lack of significant landscape values. That being said, Corangamite Shire has SLOs on its major volcanic features, and Moyne Shire has been considering wind farm applications since the late 1990s, so it cannot be argued that they have had not had time to prepare strategic studies for landscape assessment.*

As acknowledged in the *WEF Guidelines*, "wind energy facilities will have a degree of impact on the landscape". According to the *WEF Guidelines*, the determination of whether the proposal is acceptable is one which requires consideration of the planning scheme objectives for the landscape, including whether the land is subject to an ESO, VPO, SLO or "relevant strategic study that is part of the relevant planning scheme".<sup>10</sup> The land is within the Farming Zone, and this is to be distinguished from other rural zones which have as part of their purposes a rural residential amenity expectation.

In the absence of clear recognition in the planning scheme of any landscape significance the Panel concludes the policy settings for visual impact are essentially unchanged from when the current permit was issued. Even if policy had changes, the changed policy would only apply to the difference in visual impact between the current permit and the Application.

## **3.3 Montages**

### **(i) Evidence and submissions**

Submissions raised concerns about the accuracy of photomontages prepared. Ms Conheady submitted that:

*... the montages produced by ... [the Proponent] do not adequately reflect the magnitude of these structures.*<sup>11</sup>

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<sup>10</sup> WEF Guidelines, Page 32.

<sup>11</sup> Document 20, Page 2

To address concerns about lighting, contrast and other elements of the photomontages, Mr Kiekebosch prepared an additional version of the photomontages depicting all turbines in red and without landform or vegetation screening.

The montages were based on the assumptions in Table 2.

Table 2: Visual assessment assumptions

	Current permit	The Application	Visual assessment assumptions
<b>Number of turbines</b>	51	42	42
<b>Overall maximum height</b>	141 m	186 m	186 m
<b>Maximum tower height</b>	100 m	120 m	120 m
<b>Maximum blade length</b>	41 m	84 m. Implied: Half the difference between the 186 m maximum height and the 18 m lowest swept height	66 m
<b>Maximum rotor sweep area per turbine</b>	5,281 sqm	22,167 sqm	13,684 sqm
<b>Total rotor sweep area</b>	269,331	931,016 sqm Approximately 3½ times increase in total rotor seep area	574,769 sqm Approx 2.13 times
<b>Tower diameter at ground</b>	7.72 m		8.4 m
<b>Tower diameter at nacelle</b>	3.5 m		3.5 m
<b>A voluntary landscape program for dwellings</b>	within 3 km of a turbine	within 3 km of a turbine.	

In response to concerns about the adequacy of the methodology, Mr Kiekebosch confirmed that the use of representative public viewpoints represents a 'worst case view' of the wind farm and locations closer to the turbines are selected for photomontages to depict visualisations where they will be most visible:

*The ... [visual assessment] outlines in detail the methodology adopted in the assessment of potential landscape and visual impacts which may arise as a result of the project, the baseline conditions which form the basis of the assessment, and the resultant assessment findings.<sup>12</sup>*

<sup>12</sup> Document 20, Page 4

Mr Blain and Ms McDonnell raised a number of about the montages. Lisa Allen submitted that there was systematic under-estimation of the visual impact of developments from montages compared to actual built conditions. The montages presented have attempted to address this by providing a version of each montage with the turbines coloured red and without vegetation screening.

**(ii) Discussion and conclusion**

Visual montages are a tool for assessing the impact of development, and are especially useful if the development might impose on a protected view line or be visible in an accepted area of high landscape character.

The issue for the Panel is whether the Application will have a significantly greater impact than the exiting permit. The montages show the existing and proposed conditions side by side. The Panel can use this comparison to determine the relative impact of the proposals.

The Panel is concerned that the visual impact modelling has been for a smaller rotor sweep area (RSA) than is permitted under the proposed permit. The Panel is confident on reaching a conclusion on the visual impact of the modelled wind farm on the basis of the material presented, but is less confident on what the impact might be with the maximum sized turbines permitted by the Application; this size turbine has not been modelled.

The Panel expects that longer turbine blades would have a similar impact to the modelled turbines, but would have more confidence in this expectation if this sized turbine were modelled. As a general principle, modelling the full extent of the development proposed, and not some fraction of it, is to be preferred. For example, no one would expect a permit for an eight-storey building to be modelled at only seven stories. The Panel accepts that turbines are not buildings and that their visual impacts differ. The montages are acceptable to assess a facility with 66 metre long rotor blades.

It does not seem to make sense to model a smaller facility than permitted. Having said that, some increase over the modelled 66 metre length blade is likely to have the same visual impact. The Panel considers that an increase in blade length of 10 per cent over the modelled length would have a similar visual impact to the modelled length, but beyond that length some further assessment might be required. This will provide for some flexibility, but limit changes in the wind farm to that which has been assessed.

The Panel considers the permit should specify a maximum blade length of 73 metres (the modelled length plus 10 per cent), but that this length can be extended with secondary consent. This will tie-in with the minimum sweep height recommended by the Panel in Chapter 5.

### **3.4 Potential changes in visual impact as a result of the varied project**

#### **(i) Evidence and submissions**

Many submitters expressed concerns about the visual impacts of the wind farm.

Mr Kiekebosch identified two key physical changes that influence the level of landscape and visual impact experienced relative to the current approved permit:<sup>13</sup>

- *An increase in wind turbine height from 141 metres up to 186 metres. Assuming all other things remained equal, this would be expected to result in an increase in the viewshed across which the wind turbines are visible, as well as influencing the magnitude of change experienced by landscape and visual receptors.*
- *A reduction in the number of wind turbines from up to 51 under the approved permit configuration down to up to 42 under the varied project. Assuming all other things remained equal, this would be expected to influence the magnitude of change experienced by landscape and visual receptors.*

The increase in the viewshed brings some additional landscapes and viewpoints into consideration, but the detailed assessment found that the changes associated with the varied project relative to the approved permit were likely to be negligible.

Mr Kiekebosch concluded:

*The increased viewshed associated with the varied layout is therefore considered to be of negligible impact relative to the current approved permit configuration.<sup>14</sup>*

The Proponent submitted:

*... while in some locations there will be a perceptible increase in the magnitude of visual change due to the increase in turbine height, they will result in a negligible to minor increase in impacts within the study area relative to the ... [current permit]. In Mr Kiekebosch's opinion, these are not significant enough to conclude that they would become 'unacceptable', having regard to the highly modified landscape the turbines will occupy.*

#### **(ii) Discussion and conclusion**

In this Application, the Panel must consider the impact of the additional height of the turbines, together with the reduced number of turbines when compared with the current permit and not the comparison with a 'no turbines' scenario.

Wind farms are obvious features in a landscape. The threshold issue – determined by the current permit – is whether a wind farm is appropriate in this landscape. It is conceivable that a change in the layout of a windfarm might introduce views of turbines into views or

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<sup>13</sup> Page 4

<sup>14</sup> Page 4

vistas where they were not previously visible. This might be a ground for refusing the Application if those views have a higher policy protection than the views originally impacted. The Panel was not presented with any evidence that this was the case here.

In terms of overall impact on the landscape values of the area, the Panel considers that the Application will have a similar impact to the current permit. The Application certainly has the potential to be taller and therefore visible from a larger area, but the Panel does not consider that this change will be a qualitatively different to the current permit.

Given the similar geographical extents of both the current permit and the Application configurations, the reduction in wind turbine numbers would lead to a reduction in the magnitude of landscape and visual change experienced by receptors.

This is offset by an increase in wind turbine height proposed by the Application. As demonstrated within the comparative photo montages these changes are likely to be more noticeable at distances closer to the Mortlake South Wind Farm.

The Panel concludes that while the turbines will be visible from further away a comparison of the visual impact of the existing permit and the amendment permit shows the impacts will be of the same nature.

The Panel acknowledges that the Application will result in a minor increase in impacts upon landscape and visual receptors within the study area, relative to the current permit, but agrees that the potential changes in the magnitude of landscape and visual change to be “barely perceptible” compared to the current permit with a resultant “negligible change in impacts experienced”.

### **3.5 Potential for impact mitigation**

#### **(i) Evidence and submissions**

Concerns were expressed over the mitigation landscape works proposed under Condition 5. Other concerns were that the Cyprus tree hedge rows that currently provided screening were dying.

Ms McDonald expressed concerns about the extent of screening planting offered:

*I was offered a 1 metre screening belt which was deemed to be sufficient ... I funded a 15 metre plantation myself ..*

With respect to impact mitigation, Mr Kiekebosch noted that the proposed increase in tip height could potentially increase distance from the turbines for which offsite visual mitigation could be required for sensitive receptors.

Mr Kiekebosch noted:

*... with the increase in turbine height proposed ... [by the Application], an argument could be made for a commensurate increase in the distance from the turbines within which offsite visual mitigation is offered to sensitive receptors. Assuming the distance is dictated by the proportion of the vertical field of view occupied by a turbine, this distance would potentially increase from the currently stipulated 3 kilometres up to a distance of 3.87 kilometres*

*(based upon an increase in turbine height from 141 metres up to 186 metres).<sup>15</sup>*

However, having assessed the visual bulk of a 186 metres turbine at a distance of 3.87 kilometres, which occupies the same proportion of the vertical field of view as a 141 metres turbine at a distance of 3.0 kilometres, Mr Kiekebosch formed the view that the larger turbines were “visually less prominent elements within the view” due to an “apparent reduction in visual bulk, and thus would not have the same level of visual impact”. Accordingly, in his view, the difference in impact under the proposed amended configuration is not perceptible enough to necessarily warrant additional visual mitigation to a further distance.

Council considered that the screening should be extended to 4 kilometres. The Proponent did not support this.

## **(ii) Discussion and conclusion**

The Panel notes that the current permit has a detailed Condition 5 dealing with landscape mitigation works and works within the specified 3 kilometres. These condition says, in part:

*... if a program of voluntary landscape mitigation works is accepted by one or more owners under Condition 5.a), as part of that program, an off-site landscaping plan must be prepared in consultation with the landowners specified in Condition 5.a) to the satisfaction of the Minister for Planning. When approved the plan will be endorsed and will then form part of this permit*

It is not clear to the Panel why inadequate screening would be approved under the current permit.

The purpose of the voluntary landscape program, as the Panel understands it, is to screen the view of the turbines when viewed from non-stakeholder dwellings. Simple geometry says that taller turbines will be visible from further away. If the purpose of the landscaping is to assist in screening of the turbines then the area where screening is available should increase with the additional height of the turbines.

The issue is not so much whether the differences in visual impact are enough as to result in a noticeable change in impact, but rather the distance up to which the Proponent ought to screen specific views because a specifically tailored screening regime will reduce the impact of the facility.

The Panel notes that the Dundonnell WEF permit provides for a voluntary landscape program up to 4 kilometres.

It is not clear that the taller wind turbines will be chosen but if they are then a more extensive voluntary landscape program ought to apply. Table 3 shows that to maintain the same effect as the current conditions the distance of the voluntary landscape program ought

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<sup>15</sup> Visual impact evidence, Page 5

to be extended by about 20 metres for each metre of height the turbines are above the current limit.

Table 3: Landscape mitigation area

	Current permit	Application
Height	141 m	186 m
Voluntary landscape program extent	3.0 km	–
Increase in voluntary landscape extent to maintain same proportion of the vertical field of view	–	870 m
Increase in landscape program for each metre of height	–	$870/(186-141)$ m ≈ 20 m

### 3.6 Cumulative impacts

Concerns were expressed about cumulative impacts given the number of wind farms approved or proposed in the region.

With respect to cumulative impact concerns, Mr Kiekebosch gave evidence that there will be limited opportunity for simultaneous viewing of the amended Mortlake South Wind Farm and the closest projects already approved (Salt Creek and Dundonnell), which are approximately 25 kilometres north of the Mortlake South Wind Farm site.

The Panel accepts that, regional and local scale cumulative impacts associated with the varied project are likely to be less than those that were assessed as part of the original permit approval process. This is due to changes to the extent of operational, approved and planned wind farms within Southwest Victoria since the permit was issued.

### 3.7 Recommendations

The Panel makes the following recommendations:

1. **Specify a maximum blade length of 73 metres with the potential for a longer blade subject to secondary consent.**
2. **Amend Condition 5.a) to read:**
  - ***A program of voluntary landscape mitigation works to the satisfaction of the Minister for Planning must be made available to the owners of dwellings within 3.0 kilometres plus 20 metres for every metre the overall maximum turbine height exceeds 141 metres, of the nearest turbine.***

## 4 Traffic

### 4.1 Background

Traffic is generated by the wind farm during its construction and operation. The traffic generated during operation is not likely to be significant and predominantly consist of light vehicles for servicing and maintenance.

The most significant traffic impact issues are during construction. There will be a large amount of heavy construction traffic consisting of over dimensional vehicles with components (blades, turbines, tower sections and electrical units), heavy vehicles carrying aggregate, cement, sand and steel reinforcing for the tower foundations and potentially the towers if they are concrete.

Significantly, the amount of construction traffic will depend upon whether the turbine towers are constructed using steel or concrete.

#### 4.1.1 Issues

The following issues were raised in submissions:

- the development and implementation of a comprehensive Traffic Management Plan
- the potential damage to the internal road network, local public roads (Framlingham–Mortlake Road, Terang–Mortlake Road) and other roads in the vicinity as a result of the construction of the wind farm
- the requirement for turning lanes at the intersection of Tapps Lane and Terang–Mortlake Road
- the impacts of the over dimensional vehicles on the public and internal road network.

#### 4.1.2 Proposed changes

The key changes proposed are:

- a condition requiring the appointment of a Road Quality Auditor
- changes to the scope of the Traffic Management Plan.

The Proponent has proposed or accepted the following changes to the permit:

TRAFFIC MANAGEMENT	
10.	Prior to the development of a traffic management plan an accurate reassessment of vehicle numbers for over dimensional, heavy duty and light vehicles must be undertaken in consultation with Moyne Shire Council, Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning.
11.	<a href="#">Prior to the commencement of construction of wind turbine footings, crane hardstand, internal access roads and substation, the road construction works as shown on the plan(s) endorsed under Condition 12 must be completed by the permit holder and assessed by the Road Quality Auditor, in consultation with Moyne Shire Council and VicRoads to the satisfaction of the Minister for Planning.</a>
12.	Before the development starts, a traffic management plan must be prepared in

consultation with Moyne Shire Council, Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:

- a) an existing conditions survey of public roads ~~to the satisfaction of Moyne Shire Council, Corangamite Shire Council and VicRoads (as relevant)~~ that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads;
- b) the designation of appropriate construction and transport vehicle routes to the wind energy facility site;
- c) the designation of operating hours and speed limits for trucks on routes accessing the site so as to avoid school bus routes and school bus times where relevant, and to provide for resident safety;
- d) the identification and timetabling of any required pre-construction works;
- e) the designation of all vehicle access points to the wind energy facility from surrounding roads. The location and detailed design of the connection between the internal access tracks and the public roads must ensure safe sight distances, turning movements, and avoid potential through traffic conflicts;
- f) recommendations on the need for road and intersection upgrades to accommodate any additional traffic or site access requirements, whether temporary or on-going and the timing of when these upgrades are to be undertaken. This is to include engineering plans demonstrating how truck movements can be accommodated on sealed roadways. The plan must include details of any required road construction works, including consideration of works at Terang-Mortlake Road and Tapps Lane;
- g) measures to be used to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads;
- h) a program of regular inspections to be carried out during the construction period to identify maintenance works necessary as a result of construction traffic;
- i) a program to rehabilitate roads to the condition identified by the surveys required ~~above~~ by Condition ~~11(a), 12.a)~~ above; ~~and~~
- j) if required by Moyne Shire Council and/or Corangamite Shire Council, the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the traffic management plan. Such security deposit or bond is to be applied to road works not completed under the Traffic Management Plan or to be released at the end of that period;
- k) consideration of road sealing, the construction of gravel shoulders and associated drainage works at:
  - (i) Tapps Lane;

(ii) Grinters Lane;

(iii) Chamallak Lane; and

(iv) depending on anticipated traffic volumes and composition of vehicle movements, any other roads required for construction of the wind energy facility.

Plans prepared under this condition must include cross-sections showing their formation, depth, drainage and surface levels to the satisfaction of the Minister for Planning. Any variation to the width of the road widening to avoid native vegetation must be indicated on the plans.

- l) the scope of the expertise, duties and role of the nominated Road Quality Auditor engaged under Condition 14, including inspection frequency and reporting requirements;
- m) the number and type of anticipated vehicle movements and the time of day when local roads will be used;
- n) 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 and turning movements, and to avoid potential through traffic conflicts;
- o) the designation of appropriate pre-construction, construction and transport vehicle routes to and from the wind energy facility site;
- p) provision of designated areas for loading zones;
- q) measures to be undertaken to record traffic volumes on the nominated road network during the construction of the wind energy facility;
- r) proposed measures to ensure workers enter and exit the wind energy facility site from the designated side entrance at Tapps Lane;
- s) proposed measures to ensure construction vehicles are easily identifiable;
- t) proposed measures to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads; and
- u) a program to rehabilitate existing public roads within agreed timeframes to the condition identified in the surveys carried out under Condition 12.a) or to the condition to which the roads have been upgraded, whichever is relevant.

13. Where there is:

- a) a significant increase in 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 updated to the satisfaction of the Minister for Planning in consultation with Moyne Shire Council and VicRoads within 28

- [days of the event described in paragraph a\) or b\).](#)
14. [Before the endorsement of the Traffic Management Plan, the permit holder and Moyne Shire Council must agree and submit to the Minister for Planning for approval the identity of a suitably qualified engineer, independent of the permit holder's traffic advisor, who will undertake 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.](#)
15. The traffic management and road upgrade and maintenance works associated with the wind energy facility must be carried out in accordance with the traffic management plan to the satisfaction of the Minister for Planning and the cost of any works including maintenance are to be at the expense of the permit holder.

## 4.2 Traffic generation

### (i) Evidence and submissions

In the Proponent's Traffic and Transport report prepared by GTA Consultants<sup>16</sup> indicated the total construction traffic movements shown in Table 4.

The report also presented the results of studies undertaken by SKM in 2008 of the construction traffic estimates for the current permit. Subsequent work was undertaken by GHD in 2012. The approved wind farm total construction traffic estimates are shown in Table 5 for comparison.

Table 4: Total construction traffic movements

Vehicle Type	Concrete Tower Sections	Steel Tower Sections
Over dimensional	2,268	1,008
Heavy vehicles	23,349	18,518
Personnel (light vehicles)	92,500	60,000
<b>Total</b>	<b>118,117</b>	<b>79,526</b>

<sup>16</sup> Proponent's submission Appendix 16

Table 5: Approved wind farm traffic

Vehicle Type	Traffic Generation		
	Current permit SKM 2008 Report	Current permit GHD 2012 Report	Application
Over dimensional	1,000	718 to 1,942	1,008 to 2,268
Heavy vehicles	15,208	18,582 to 27,500	18,518 to 23,349
Personnel (light vehicles)	60,000	66,500	60,000 to 92,500
<b>Total</b>	<b>76,208</b>	<b>85,800 to 95,942</b>	<b>79,526 to 118,117</b>

The estimated construction traffic generated by construction with steel towers is similar to the range of estimated traffic for the current permit; GTA estimated 79,526 vehicle movements compared to the range of 76,208 (SKM) and 85,800 to 95,942 (GHD).

The estimated construction traffic generated by construction with concrete towers is significantly higher than the range of traffic estimated for the current permit; GTA estimated 118,117 vehicle movements compared to the range of 76,208 (SKM) and 85,800 to 95,942 (GHD). This represents a 23 per cent increase in estimated traffic movements.

Moyne Council expressed significant concerns about the management of traffic and the impacts of traffic on the local road network during the construction phase of the project.<sup>17</sup> Council is concerned:

*... about the predicted traffic volumes for concrete tower construction, as it could be expected that the overall volume of [over dimensional] movements could increase at least fourfold over the steel option (presumably due to the constructed sections being smaller to keep the sectional weights manageable for manoeuvring).*

Moyne Council also:

*... considers that the internal road construction and access tracks of the wind farm might also have to be of higher standard to handle the additional weights encountered as a result of the propose concrete tower sections.*

Individual submitters raised issues regarding the potential impacts of increased traffic movements associated with the construction of the wind farm. Mr Blain<sup>18</sup> expressed concern about the additional traffic using The Sisters–Noorat Road in the vicinity of his residence if the quarry opposite his house was used as a local source of gravel for the construction of the wind farm.

## (ii) Discussion and conclusion

It was evident from the Proponent’s transport expert that there is a significant increase in the estimate traffic movements generated by the construction of the turbine towers from

<sup>17</sup> Moyne Shire Council submission document 16

<sup>18</sup> Document 19

concrete compared to steel. The estimated traffic movements associated with the construction of the towers from steel were within the range of movements proposed for the current permit.

The use of concrete towers will generate a 23 per cent increase in traffic movements. Most of the increase will be due to the number of heavy vehicles required to deliver raw materials to the on-site concrete batching plant and the movement of smaller concrete tower sections throughout the wind farm construction site. However, there will also be a reduction in the number of movements of the larger sections of the turbines (steel tower sections) on roads outside the wind farm if the concrete tower option is chosen.

The impact of the traffic generated during the operation of the facility is estimated to be approximately the same as the traffic movements submitted by the Proponent for the current permit.

### **4.3 Turning movements**

#### **(i) Evidence and submissions**

The Proponent's Traffic and Transport evidence presented to the Panel by GTA Consultants<sup>19</sup> indicated that there would be 270 vehicles per day (vpd) using Tapps Lane and most of these would be making turns at the Terang–Mortlake Road. The evidence presented suggested that there was no warrant for dedicated turning lanes on the Terang–Mortlake Road to accommodate the turn movements into and out of Tapps Lane.

Moyne Council submitted that:

*During construction of the WEF, and assuming the concrete tower section option is selected as the worst case scenario, 6,500 vehicle movements a month, or an average of 230 vehicles per day (20 per cent heavy vehicles), will be entering and exiting the northern end of Tapps Lane onto Terang–Mortlake Road for a period of 18 months.*

*Whilst the decision ultimately lies with VicRoads, Council submits to the Panel that LH/RH bypass turning lanes are necessary for inclusion at this intersection.*

The Proponent's evidence suggests that dedicated turning lanes are not required at the access point to the construction site at the Terang–Mortlake Road/Tapps Lane intersection as the number of traffic movements do not warrant dedicated turning lanes.

In the Proponent's Traffic and Transport report indicated that the point of access to the construction site for the over dimensional vehicles would be via Terang–Mortlake Road at Tapps Lane. Swept path assessments undertaken of this intersection indicate that over dimensional vehicles will extend beyond the available road width and road reserve, resulting in the intersection needing to be upgraded to accommodate the long vehicles. However, design details for the upgrade were not available.

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<sup>19</sup> GTA document 4

**(ii) Discussion and conclusion**

The Terang–Mortlake Road/Tapps Lane is an arterial road on the VicRoads Register of Public Roads and is managed by VicRoads. VicRoads has advised<sup>20</sup> it is mainly concerned about the haulage routes for transporting quarry materials and the revised Traffic Management Plan. Ultimately, VicRoads manages the approval of the movement of ODV's on the states roads and would approve the ODV route used to deliver materials to the wind farm. VicRoads would have an opinion on the suitability of the current intersection arrangement at Terang–Mortlake Road/Tapps Lane for the delivery of turbine components to the construction site.

While in the long term, there is probably no requirement for dedicated turning lanes at the Terang–Mortlake Road/Tapps Lane intersection, there is a requirement for the upgrade of the intersection during the construction phase of the project.

The Panel considers that an upgrade of the intersection is required to the extent that the all construction traffic using the intersection, including over dimensional vehicles, can do so in a safe and efficient manner. To this extent, the Panel does not support specifying the construction of dedicated turning lanes, however, the Traffic Management Plan must be robust enough that the road conditions and functional performance of the intersection are monitored and rectified if found unsafe.

Condition 12.f) now includes specific consideration of this intersection, and the Panel is satisfied that this will address this issue.

#### **4.4 Road quality audit and upgrades**

**(i) Evidence and submissions**

Council submitted detailed concerns about the impact of construction traffic on the structural integrity of local roads. The Council stated:

*The critical component of Council's submission is to ensure that any amended planning permit issued for the Mortlake South WEF is updated to contain the necessary permit conditions to ensure that the roads required to service the project are safe and fit for purpose.*

Council submitted that the provision of appropriate road infrastructure cannot be adequately and solely dealt with via a Traffic Management Plan and that amended planning permit conditions are needed to deal with these issues.

Council has requested traffic management conditions be consistent to the approved conditions for the Dundonnell WEF, *"making specific reference to the road upgrades, engineering requirements, a detailed Traffic Management Plan and the appointment of an Independent Road Quality Auditor for the project"*.

Council also requested that an independent survey be undertaken of the Stony Creek Bridge, by a suitably qualified engineer, to determine what loads may be carried by the bridge. If needed Council submitted that the bridge be renewed or upgraded to be able to carry the

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<sup>20</sup> VicRoads submission document 12

expected construction loads. Council also raised concerns about the need for a survey of the existing condition of roads and the trigger for sealing roads.

**(ii) Discussion and conclusion**

The destruction of local roads from construction activity has been an issue with wind farms in the past.

The Panel agrees that the condition of the existing road network in the construction site and the roads providing access to the construction area need to be determined to identify areas that may need to be upgraded as part of the construction activity, or monitored during construction activities to determine any degradation.

The Panel accepts that the current permit does not adequately address these issues, and supports this issue being addressed in new conditions. The proposed conditions dealing with the appointment of a Road Quality Auditor address the issue of ensuring that the roads required to service the project are safe and fit for purpose.

The proposed permit conditions broadly reflect the Council's requests. Specific cross-sections are not specified but the proposed permit provides for consideration of road sealing, the construction of gravel shoulders and associated drainage works at:

- Tapps Lane
- Grinters Lane
- Chamallak Lane
- depending on anticipated traffic volumes and composition of vehicle movements, any other roads required for construction of the wind farm.

The Panel does not consider that it is appropriate (or possible) to settle on exact cross-sections for these roads at this stage.

The Panel does not support the need for the testing of road base in the permit as is required at Dundonnell. The proposed regime of regular inspections and a program to rehabilitate roads to the condition identified by the surveys seems adequate to address issues as they arise.

The Panel does not support reference to Council policy of requiring upgrades to roads when there is greater than 150 movements per day. The basis for this policy is not clear – it might make sense as a customer service standard for local roads for residential traffic – but it is not clear how it would be relevant to construction or operational traffic.

The Panel is satisfied with the proposed permit condition wording which is closely follows the condition for the Dundonnell wind farm with some specific changes.

**4.5 Who should approve the Traffic Management Plan**

The proposed permit requires that the Traffic Management Plan *“must be prepared in consultation with Moyne Shire Council, Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning”*. This is the same wording as the current permit.

Moyne Council submitted:

*Council also requests through this amendment process that both Council and VicRoads be designated with role of responsible authority for endorsement of the [Traffic Management Plan] and all other traffic management conditions.*

Council considered it had 'exceptional' local knowledge of the road network in the vicinity of the wind farm site and it *"is in the best position to ensure that traffic management and construction road upgrades are effectual and appropriate in the local context"*. Council is *"wary of the financial implications on Council and its ratepayers if the [Traffic Management Plan] is substandard"*.

The Dundonnell permit states:

*At least eight weeks before construction of the road upgrades referred to in Condition 28 commences (unless a shorter time frame is agree by Moyne Shire Council), a Traffic Management Plan must be prepared to the satisfaction of, and endorsed by, Moyne Shire Council and VicRoads. The Traffic Management Plan is to be prepared in consultation with the Rural City of Ararat if local roads within that municipality are proposed to be used for wind farm construction access. The Traffic Management Plan must be complied with, unless varied by the written consent of Moyne Shire Council and VicRoads.*

The Panel agrees with the Proponent that there is no need to specify a time frame for endorsement before works commence. The Dundonnell permit specifies particular works in Condition 28 and that is not the case for this permit.

The Panel sees merit in Council and VicRoads endorsing the Traffic Management Plan as they are the bodies with the expertise and responsibility. This is the case at Dundonnell.

#### **4.6 Conclusions**

The Panel concludes that the proposed permit conditions are appropriate and provide for:

- A comprehensive Traffic Management Plan for both the construction and operation phases of the wind farm project is prepared by the Proponent to the satisfaction of Moyne Council and VicRoads.
- The monitoring of existing conditions of the roads and road reserve potentially impacted by construction traffic to ensure safe conditions for both the road users and construction vehicles.

Traffic management conditions need to be revised once the Proponent has decided if it intends to construct the wind turbine towers of concrete or steel.

#### **4.7 Recommendations**

The Panel makes the following recommendations:

##### **3. Amend the introduction to Condition 12 to read**

- ***Before the development starts, a traffic management plan must be prepared in consultation with Corangamite Shire Council and the Minister for Planning to the satisfaction of Moyne Shire Council and VicRoads. When approved, the plan will be endorsed and will then form part of this permit.***

## 5 Flora and fauna

### 5.1 Background

In considering the effects wind farms on flora and fauna at a wind farm site and surrounding area, the *WEF Guidelines* require consideration of:

- any impacts on species or communities protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or the *Flora and Fauna Guarantee Act 1988* (FFG Act)
- the sensitivity of any protected species to disturbance
- the potential loss of habitat of species protected under the EPBC Act or the FFG Act
- measures to minimise the impacts on any native species.

#### 5.1.1 Issues

The following issues were raised in submissions:

- the removal of native vegetation
- the presence of Brolga and listed species on the subject site
- the increased impact of the Application on birds and bats
- the appropriate time for monitoring bird strike.

#### 5.1.2 Proposed changes

DELWP recommended a number of changes to conditions, including:

- A new Condition 8(h) to provide that any aviation lighting installed at the wind farm be designed to minimise the attraction of insects (and therefore, potentially bats).
- A new Condition 16(i) requiring the monitoring of the presence of the Southern Bent-wing Bat under the Bat and Avifauna Management (BAM) Plan.
- New Conditions 28 to 33 concerning native vegetation removal, including requirements for offsets and security agreements.
- Deletion of Condition 13(e) (which the Proponent proposed changes to in the Application) regarding the requirements for a native vegetation management plan.
- Updating references to 'DSE' and 'DEPI' to 'DELWP's Environment Portfolio' and 'DEDJTR' as appropriate.

The Proponent has proposed or accepted the following changes to the permit:

- |   |
|---|
| <p>3. The wind energy facility must meet the following requirements:</p> <ul style="list-style-type: none"><li>a) the wind energy facility must comprise no more than <del>5142</del> wind turbines;</li><li>b) the overall maximum height of the wind turbines (to the tip of the rotor blade when vertical) must not exceed <del>144186</del> metres above natural ground level;</li><li>c) wind turbines must be mounted on a tubular tower with a height of no greater than <del>400120</del> metres;</li><li>d) each wind turbine is to have not more than three rotor blades, with <del>each blade having a length of no greater than 41 metres</del> <del>the lowest swept</del></li></ul> |
|---|

height no lower than 18 metres above natural ground level;

**NATIVE VEGETATION REMOVAL**

36. This permit allows for the removal of up to 0.31 hectares of native vegetation.
37. To offset the removal of up to 0.31 hectares of native vegetation, the permit holder must secure a native vegetation offset in accordance with the Permitted clearing of native vegetation – Biodiversity assessment guidelines (DEPI 2013).
38. Before any native vegetation is removed, evidence that the required offset for the project or stage has been secured must be provided to the satisfaction of the Minister for Planning. The offset evidence can be:
- a security agreement signed by both parties, to the required standard for the offset site or sites, including a 10 year offset management plan; and/or
  - an allocated credit extract from the Native Vegetation Credit Register.
39. A copy of the offset evidence will be endorsed by the Minister for Planning and will form part of this permit. Within 30 days of endorsement of the offset evidence by the Minister for Planning, a copy of the endorsed offset evidence must be provided to the Department of Environment, Land, Water and Planning. At the conclusion of the project, offset requirements can be reconciled with agreement by the Minister for Planning.

**BATS AND AVIFAUNA**

19. Before the development starts, a Bat and Avifauna Management Plan (**BAM Plan**) must be prepared in consultation with the Department of Sustainability and DELWP Environment Portfolio to the satisfaction of the Minister for Planning. When approved the plan will be endorsed and will then form part of the permit. The use must thereafter accord with the endorsed plan to the satisfaction of the Minister for Planning.

The BAM Plan must include:

- a) a statement of the objectives and overall strategy for managing and mitigating any significant bird and bat strike arising from the wind energy facility operations;
- b) a monitoring program of at least 52 years duration, either commencing upon the commissioning of the last turbine of the first stage of the approved development and use (if any) or alternatively such other time of commencement as is to the satisfaction of the Minister for Planning.

The monitoring program must include surveys during the breeding and migratory seasons to ascertain:

- the species, number, age and sex (if possible) and date of any bird or bat strike;
- the number and species of birds and bats struck at lit (if aviation obstacle lighting is installed) versus unlit turbines;
- any seasonal and yearly variation in the number of bird and bat strikes;

- whether further detailed investigations of any potential impacts on birds and bats are warranted.

Any such required further detailed investigations are to be undertaken in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) and to the satisfaction of the Minister for Planning;

- c) procedures for the reporting of any bird and bat species listed under the *Environment Protection and Biodiversity Conservation Act 1999* or the *Flora and Fauna Guarantee Act 1988* struck by or colliding with turbines to the [Department of Sustainability and DELWP Environment Portfolio](#) within 7 days of becoming aware of any strike identifying where possible whether the strike was by a lit or unlit turbine;
- d) information on the efficacy of searches for carcasses of birds and bats, and, where practicable, information on the rate of removal of carcasses by scavengers, so that correction factors can be determined to enable calculations of the total number of mortalities;
- e) procedures for the regular removal of carcasses likely to attract raptors to areas near turbines;
- f) procedures for periodic reporting, within agreed timeframes, of the findings of the monitoring to the [Department of Sustainability and DELWP Environment Portfolio](#) and the local community;
- g) recommendations in relation to a mortality rate for specified species which would trigger the requirement for responsive mitigation measures to be undertaken by the operator of the wind energy facility to the satisfaction of the Minister for Planning; ~~and~~
- h) implementation measures developed in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) to offset any impacts detected during monitoring including turbine operation management and on-site or off-site habitat enhancement (including management or improvement of habitat or breeding sites); ~~and~~
- i) [a program for the provision of data on the presence of the Southern Bent-wing Bat to the satisfaction of the Minister for Planning.](#)

20. Following the completion of the monitoring program of at least [52](#) years duration as specified in Condition ~~16(b)~~, [19.b](#), a report must be prepared by the operator of the wind energy facility setting out the findings of the program to the satisfaction of the Minister for Planning. If, after consideration of this report, the Minister for Planning directs that further investigation of potential or actual impacts on birds and bats is to be undertaken, the extent and details of the further investigation must be to the satisfaction of the [Department of Sustainability and DELWP Environment Portfolio](#) and the investigation must be carried out to the satisfaction of the Minister for Planning.

## 5.2 Native vegetation

The August 2016 assessment of the Application included an assessment of the impact on eight small areas of potential remnant native vegetation on roadsides and in a former railway reserve from the construction of access tracks and underground power cabling. Mr Lane confirmed in a subsequent inspection of the site on 16 November 2016 that there is no remnant native vegetation at the eight sites. The Proponent continues to seek approval for native vegetation removal under the Application to retain flexibility in the event that a change of layout under endorsed development plans necessitates native vegetation removal as the project progresses.

The Panel supports this approach. The area that might be removed is relatively small and any native vegetation removed will have to be offset.

## 5.3 Presence of Brolgas and other species

### (i) Evidence and submissions

Concerns were raised about the surveys of birds and avifauna. For example Ms Allen submitted:

*The testing can only be inaccurate, the animals and birds are not studied year round.*

Photos of eagles and Brolgas were shown on the subject land.

Mr Lane gave evidence that:

*Birds most exposed to collision risk from turbines at Mortlake Wind Farm are native and introduced species adapted to agricultural landscapes that are abundant and widespread in south eastern Australia, with no species listed on the FFG Act or EPBC Act as rare or threatened are considered to be at risk. As reported in [Brett Lane and Associates] (2009), the most abundant bird species on the Mortlake South site during the spring 2007 bird utilisation surveys were English Skylark, Australian Magpie, Raven spp. and Common Starling. These four birds accounted for 82 per cent of all birds observed during the survey. There were comparatively few other species on the site.*

Mr Lane advised:

*During the site inspection on 16th November 2016, it was evident that the most abundant bird species throughout the wind farm site were still these four species, with Skylark and Australian Magpie being particularly evident.*

### (ii) Discussion and conclusion

There has been no significant change in the land use since the current permit was issued, and it continues to be a significantly modified landscape with all native habitats removed from the area by longstanding extensive agricultural practices. It is clearly not an area that contains remnant habitat.

Resurveying the site is not warranted because habitats on the site have not changed and hence the species of bird attracted has not changed. The Panel accepts the evidence that there will be the occasional listed bird across the site, but that the site is not preferred habitat for these species.

There is no evidence that the mix of birds is so different from those observed when the current permit was issued that the Application should be refused.

## 5.4 Impact of additional blade area on bird strike

### (i) Evidence and submissions

Brett Lane and Associates prepared a biodiversity impact assessment of the Application in August 2016, which compared the impacts of the current permit and the Application with respect to native vegetation, birds (including the Brolga) and bats (including the Southern Bent-wing Bat).

#### Birds

Mr Lane made an assessment of the potential increase in bird strike.

With respect to birds and bats, Mr Lane considered two turbine scenarios – the ‘largest, highest’ and the ‘largest, lowest’ both with 66 metres long blades as set out in Table 1<sup>21</sup>. The longest blade length actually permitted by the Application is 84 metres, but the Panel has been told that a blade of this length is not proposed to be used.

Table 6: Bird and avifauna assessment assumptions in Brett Lanes evidence

	Current permit	‘Largest, highest’ under Application	‘Largest, lowest’ under Application
<b>Tower height</b>	80 m	120 m	84 m
<b>Blade length</b>	40 m	66 m	66 m
<b>Overall maximum height</b>	120 m	186 m	150 m
<b>Sweep height above ground</b>	40 m	54 m	18 m
<b>Number of turbines</b>	51	42	42

Based on the assumptions Mr Lane used the greatest change in area of RSA arises from the increase in area of the RSA above 40 metres, a zone where only four to six percent of birds are active.

Mr Lane explained that for the purpose of his assessment, the lowest RSA height was assumed to be 20 metres above the ground as bird flights have been recorded at this height in 10 metre increments only. He thought it unlikely that the additional two metre drop to 18 metres above the ground would significantly affect these findings. In total, birds in the 20 to

<sup>21</sup> Brett Lane evidence Page 4

40 metre height zone represent over 33 per cent of all birds recorded during bird surveys, based on an average across ten sites. This represents the greatest difference in potential bird impact between the possible turbine designs.

DELWP considered the inclusion of a lower sweep height to be a positive feature as under the current permit blades could potentially be lower than 18 metres.

The consequence of the possible turbine designs was calculated by assuming that birds fly through the RSA perpendicular to the RSA. For both the lower and higher turbines the same survey area was used (up to 180 metres above the ground) to ensure comparability of estimated flight numbers affected.

This analysis for the 'lowest, largest' possible turbine found an increase in the maximum possible number of birds flying through the RSA of over four times the amount modelled for the current permit.

Mr Lane explained:

*The main reason for this is the drop in RSA height to approximately 20 metres instead of 40 metres above the ground, a zone of greater bird activity. The same analysis for the highest, largest possible turbine, found a decline in the number of birds flying through the RSA to about 85 per cent of that for the original assessed turbine. This was because only about five percent of birds occur within the RSA height of this turbine design.*

Mr Lane did not consider the impacts of the modified turbine design on birds were of conservation concern because the species of birds involved (common native and introduced species) were not listed as rare or threatened. The species most affected are abundant, widespread and not threatened so population-scale consequences from the difference in turbine design are negligible.

The Proponent submitted:

*... the analysis for the 'highest, largest possible' turbine found a decline in the number of birds to about 85 per cent of the original assessed design, because only approximately 5 per cent of birds occur within the RSA height of this design.*

*The same analysis for the 'lowest, largest possible' turbine design found an increase in the maximum possible number of birds flying through the RSA of over four times. However, Mr Lane concluded that the species most affected by the modified design are 'abundant, widespread and not threatened', and therefore not of conservation concern.*

## **Bats**

Bats are surveyed using ultrasonic detectors. Because ultrasonic bat detectors only record the number of bat calls, not the number of individual bats, it is only possible to identify the bat species using the subject site, and not the absolute number of bats in the same way as for birds.

The bat surveys in 2007 used ultrasonic bat detectors deployed at ground level at the subject site. Recording of bat activity above 25 metres above ground level was not undertaken at Mortlake, thus impacts of the change in turbine design were assessed based on pooled bat detector data from recording heights of 25 and 50 metres above the ground from other sites in similar settings in south eastern Australia from Brett Lane and Associates records. As bat detectors generally do not record bat calls beyond about 25 metres and for some species less, a 25 metre height separation can be assumed to be sampling different height zones.

These data show that at 50 metres above the ground bat call numbers are about 15 per cent of the number recorded from ground level. At 25 metres above the ground numbers are about 25 per cent of the number recorded at ground level. The proposed change in turbine height and cross section area occurs in the recording zone sampled at 25 metres and above.

The increased potential collision risk for bats occurs in the zone where 28 per cent of bat activity occurs, indicating that a minority of bat flights would still pass through the revised RSA. The difference between the current permit model and 'largest, lower' is the turbine blades drop into a zone of higher bat activity (that is, between 25 and 50 metres), representing an up to an additional 17 per cent of bat activity occurring within the RSA. The difference between the current permit model and 'largest, higher' puts turbine blades into an additional zone likely to have very little bat activity (that is between 120 and 186 metres).

Mr Lane gave evidence that the species of bats involved were:

- common, widespread species in agricultural landscapes in south eastern Australia and
- not species listed under FFG Act or EPBC Act as rare or threatened)

He concluded that the small additional proportion of bat activity in the larger RSA for the lower design, the added impacts of the 'largest, lower' turbine design are unlikely to lead to effects on bat populations of conservation concern. The difference in impact of the 'largest, highest' design on bats is likely to be negligible given that much of the increased RSA is at a height with very little bat activity.

## **(ii) Discussion and conclusion**

It seems to the Panel that the chance of a bird being hit by a rotor depends on the length of the rotor (the longer the rotor the more chance it will hit a bird) and the speed of the rotor (stationary it will hit no birds, very fast it will hit all birds). Birds do fly between the rotors and so a simple comparison of the RSA may not give a true indication of the chance of striking a bird; however, larger turbines will strike more birds.

The Panel accepts the estimate from Mr Lane that the changed impact in bird strike could range from a 15 per cent decrease to a four-fold increase compared to what was modelled for the current permit.

The issue of the lower sweep height is a tension between what is technically permitted, and what is expected to be built.

Increasing the height of the lower swept of the blades above ground level will reduce the chance of bird strike.

The Panel was told that the intention is to use blades in the order of 66 metres in length which if erected at maximum height (which makes sense from an energy harvesting point of view) gives a lowest swept height of 54 metres. The lower swept height specified in the Application, is as the Panel understands it, is to retain the flexibility to install lower, less expensive turbines rather than allow the possibility of very long turbine blades, although longer blades cannot be ruled out.

As with the case for the visual impact the Panel is concerned that the impact evidence relates to a proposal that is smaller than the maximum proposal permitted by the Application. This does not seem to be a good approach to impact assessment.

The Panel accepts that some flexibility should remain in the permit, but in seeking permission to move to larger turbines the ability to reduce the impact of the turbines on birds relative to the power output of the facility should be taken.

The Panel understands that the majority of birds impacted will be common species, and while there may not be significant ecological impacts from the bird strikes, it would seem good practice to try to reduce them, especially as this is achieved with a more efficient turbine specification. Raising the minimum sweep height (subject to secondary consent) will give clear indication that the amended permit is intended to cater for taller turbines rather than simply bigger turbines, consistent with the expert assessment of impacts.

## **5.5 Bird monitoring**

### **(i) Evidence and submissions**

The Application includes a change to reduce the number of years for birds and bat monitoring in Conditions 19.b) and 20.

It was submitted that two years would be sufficient to establish the number of birds being killed by the turbines.

The Panel does not support the reduction in the monitoring program to two years. Seasonal variation might mean that numbers fluctuate widely, and more than two years be required to understand true impacts. At a broader level, if two year monitoring of wind farms is adopted as the norm then the possibility of gaining a region-wide view of impacts is reduced as the overlap between data series from different facilities is reduced or eliminated. There was discussion at the Hearing that acknowledged that if two year monitoring were adopted that there would be a need to ensure that the monitored years covered representative weather conditions.

## **5.6 Conclusions**

The Panel concludes:

- The permit should provide for the removal of native vegetation.
- There is no need to resurvey the local bird population.
- The fauna impact assessment was based on a smaller turbine than the maximum permitted under the proposed permit.
- An increase minimum rotor sweep height should be specified to reduce the impact of the turbines on birds.

- Bird monitoring should continue for 5 years.

## **5.7 Recommendations**

The Panel makes the following recommendations:

- 4. Retain the five year period for monitoring in the Bat and Avifauna Management Plan in Condition 19.b) and 20.**
- 5. Specify a lowest swept height no lower than 40 metres above natural ground subject to secondary consent.**

## 6 Noise

### 6.1 Background

Assessment of wind farm impacts is based on the *WEF Guideline*. With respect to noise impacts from the wind farm the guidelines require that the wind farm complies with New Zealand Standard NZ6808:2010 *Acoustics – Wind farm noise* (the Noise Standard).

The Noise Standard specifies a general limit for wind farm noise or a noise level increase above the existing background noise level. The Noise Standard also details requirements of wind farm noise prediction methods.

#### 6.1.1 Issues

The following issues were raised in submissions:

- the noise level criteria
- the turbine proposed for the wind farm is a Nordex N131/3000 with a rated power of 3.0 MW and a rotor diameter of 131 metres – the actual turbine design and turbine height to be used at Mortlake South may not be this turbine
- the ground absorption factor used by Marshall Day Acoustics in the modelling of the wind farm noise impacts is  $G=0.5$ ; this assumes mixed ground surface characteristics of 50 per cent hard and 50 per cent porous ground
- noise standard should include the amenity aspect that is discussed in the Noise Standard
- the most recent measurements of the existing background noise conditions were undertaken in July and October 2007 at five properties – noise monitoring should be undertaken by independent parties prior to the commencement of the construction of the wind farm
- noise compliance testing
- noise complaint investigations and the endorsed Complaint Investigation and Response Plan.

#### 6.1.2 Proposed changes

The Proponent has proposed or accepted the following changes to the permit:

##### **NOISE ASSESSMENT**

21. If the turbine hub height is to be increased above 80 metres, new noise predictions for Mortlake South must be undertaken in accordance with relevant standard referenced in the *'Policy and planning guidelines for development of wind energy facilities in Victoria'*, based on the type and hub height of turbines to be used. The results of such assessment should be submitted with an independent peer review (undertaken by a suitably qualified person not otherwise associated with the project) as to its adequacy and conclusions to the Minister for Planning for approval.

##### **NOISE STANDARD**

22. Except as provided below in this condition, the operation of the wind energy

facility must comply with the noise criteria specified in the noise standard referenced in the ['Policy and planning guidelines for development of wind energy facilities in Victoria'](#) NZS 6808:2010 Acoustics-Wind Farm Noise at any dwelling existing on land in the vicinity of the proposed wind energy facility as at the date of the issue of this permit, to the satisfaction of the Minister for Planning.

In determining compliance the following requirements apply:

- a) the sound level from the wind energy facility within 20 metres of any dwelling must not exceed the level specified in the noise standard referenced in the ['Policy and planning guidelines for development of wind energy facilities in Victoria'](#) NZS 6808:2010 Acoustics-Wind Farm Noise, or the background noise level by more than 5 dBA, whichever is the greater;
- b) compliance must be assessed separately for all-time and night time. For the purpose of this requirement, night time is defined as 10.00pm to 7.00am; and
- c) ~~if the noise has anywhere~~ special audible ~~characteristic and measured~~ characteristics, including tonality, impulsive sound or amplitude modulation occur, the noise level ~~must have with the identified special audible characteristics will be modified by applying~~ a penalty of ~~5dBA applied up to + 6dB L90 in accordance with section 5.4 of the NZS 6808:2010 Acoustics-Wind Farm Noise.~~

Any dwelling on the subject land may be exempt from this condition. This exemption will be given effect through an agreement with the landowner that must apply to any occupant of the dwelling and must be registered on title. Such dwellings will be known as host dwellings.

#### NOISE COMPLIANCE

23. Before the development starts a noise compliance testing plan must be prepared by a suitably qualified acoustics expert to the satisfaction of the Minister for Planning.

When approved, the noise compliance testing plan will be endorsed by the Minister for Planning and will then form part of this permit.

The use must be carried out in accordance with the noise compliance testing plan to the satisfaction of the ~~responsible authority~~ Minister for Planning.

The noise compliance testing plan must include:

- a) A determination of the noise limits to be applied during construction using the methodology prescribed in the [Interim Guidelines for the Control of Noise from Industry in Country Victoria, N3/89-Victorian Environment Protection Authority Publication No. 1254 - Noise Control Guidelines \(October 2008\)](#).
- b) A program of compliance testing to be implemented during the construction of the wind energy facility that: ~~is designed by a suitably qualified acoustic expert.~~
  - (i) ~~is designed by a suitably qualified acoustic expert, and~~

~~(ii) — utilises the methodology prescribed in State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No N-1, to demonstrate compliance with the limits determined in (a) above.~~

- c) A prediction, by a suitably qualified acoustic expert, of the area within which the noise level from the wind energy facility during full operation will be 35 dB (A) or greater.
- d) Identification of all dwellings, excluding host dwellings, within the area predicted in ~~(e)paragraph 1.a(i)~~ above and a statement as to whether consent from the owner of each of the identified dwellings for compliance testing has been obtained or refused.
- e) A method or methods of testing compliance with the noise limits prescribed in Condition 20 23 of this permit for each dwellings identified in ~~(d)d~~ above for which consent for the conduct of compliance testing has been obtained.

The compliance testing method must be either:

- (i) the method described in the standard referenced in the ~~'Policy and planning guidelines for development of wind energy facilities in Victoria'~~ NZS 6808:2010 Acoustics-Wind Farm Noise;
- (ii) a method, designed by a suitably qualified acoustics expert, in which measurements of operating and background noise levels are measured with:
- background noise levels being measured with all turbines that, when operating, influence the noise level at the dwelling, shut down, and
  - the wind in the direction from the wind energy facility to the dwelling for at least 50 per cent of the measurement period.
- f) For each dwelling at which compliance testing is to be performed, determination of the maximum monthly proportions of the wind direction distribution that is from the wind energy facility to the dwelling, plus or minus 22.5 degrees.
- g) A schedule for compliance testing under which compliance testing at all identified dwellings for which consent for such testing has been obtained is performed in the 14 months following the commissioning of the last turbine in a section of the wind energy facility or a stage of the wind energy facility, if the development is in stages, and repeated between 10 and 14 months after the first compliance test;
- h) a procedure for the assessment, by a suitably qualified acoustics expert, of the characteristics of the noise from the wind energy facility to determine if that noise has any special audible characteristics that require the ~~addition~~ application of 5 dB(A) a penalty to the measured operating noise levels as shown in Condition ~~19(e)~~ 22.c) of this permit;

and

- i) a procedure under which all results of compliance testing conducted in any month are reported to the Moyne Shire Council and Minister for Planning every six months;
- j) All noise compliance reports must be accompanied by a report from an environmental auditor accredited under the Environment Protection Act 1970 (Vic) with their opinion on the methodology and results contained in the noise compliance testing. If a suitable auditor cannot be engaged, the permit holder may seek written consent to obtain a peer review of the noise report instead.

24. Noise from ancillary infrastructure at the wind energy facility, including the substation, must comply with the recommended noise levels outlined in the Victorian Environment Protection Authority Publication No. 1411 Noise from industry in regional Victoria – Recommended maximum levels from commerce, industry and trade premises in regional Victoria (NIRV).

#### **NOISE COMPLIANCE ENFORCEMENT**

##### **COMPLAINT INVESTIGATION AND RESPONSE PLAN**

- ~~25. Before the use begins the proponent must prepare a detailed noise complaint evaluation and response plan in consultation with the the Environment Protection Authority and the Moyne Shire Council. The plan must be submitted to, and approved by, the Minister for Planning. This plan must include the following elements:~~
25. Before the development starts, the permit holder must prepare a Complaint Investigation and Response Plan to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed by the Minister for Planning and will then form part of this permit. The Complaint Investigation and Response Plan will be designed to respond to all aspects of the wind farm including (but not limited to) operation noise, construction noise, construction impacts, traffic and shadow flicker. The endorsed Complaint Investigation and Response Plan must be made publicly available on the wind farm operator's website.
26. The Complaint Investigation and Response Plan must be prepared in accordance with Australian/New Zealand Standard AS/NZ10002:2014 – Guidelines for complaint management in organisations and shall include:
- a) a process of investigation to resolve a complaint;
  - b) a requirement that all complaints will be recorded in an incidents register;
  - c) a toll free ~~noise complaint~~ telephone ~~service~~ number and email contact for complaints and queries;
  - b) the erection of a sign on site advising of the complaints telephone number;
  - d) details of the appropriate council contact telephone number and email address (where available)

- ~~e) — minimum recording requirements for noise complaints (that is: date, time, noise description and weather conditions at the receptor);~~
- ~~d) — a process for determination whether the noise complaint is a breach of Condition 19~~
- ~~a) — a response protocol for confirmed breaches including, but not limited to:
  - ~~(i) — determination of the meteorological circumstances at the time of the breach and the operational status of the turbine(s) at that time;~~
  - ~~(ii) — noise optimisation of the relevant wind turbine(s) under the same meteorological circumstances as occurred at the time of the breach;~~
  - ~~(iii) — in the event of a further breach the selective shut down of the relevant wind turbine(s) or turbines in the same meteorological circumstances;~~
  - ~~(iv) — where under the same meteorological conditions subsequent confirmed noise breaches occur, the decommissioning of the relevant turbine(s);~~~~
- e) a table outlining complaint information for each complaint received, including:
  - (i) the complainant's name;
  - (ii) any applicable property reference number if connected to a noise background testing location;
  - (iii) the complainant's address;
  - (iv) a receipt number for each complaint which is to be communicated to the complainant;
  - (v) the time, prevailing conditions and description of the complainant's concerns including the potential incidence of special audible characteristics (for a noise complaint);
  - (vi) the process of investigation to resolve the complaint.

27. A report including a reference map of complaint locations, and outlining complaints, investigation and remediation actions is to be provided on an annual basis to the satisfaction of the Minister for Planning.

- ~~f) — a register of complaints, responses and rectifications which may be inspected by the Minister for Planning and the Moyne Shire Council; and~~

28. The register and complaints response process shall continue for the duration of the operation of the wind energy facility and must be made available to the Minister for Planning on request.

- ~~g) — provision for review of the complaint, any necessary improvement and an evaluation process 12 months after commencement of the operation of the wind energy facility.~~

[29. The owner of the wind energy facility must implement and comply with the approved Complaint Investigation and Response Plan for the duration of the operation of the wind energy facility.](#)

**CUMULATIVE NOISE IMPACT**

30. If a turbine or turbines of another wind energy facility are constructed within 3km of any turbine at the Mortlake Wind Energy Facility a cumulative noise management plan must be prepared and implemented to the satisfaction of the Minister for Planning. This plan shall include:
- a) identification of any dwellings likely to be affected by noise from both wind energy facilities;
  - b) an evaluation of the likelihood of the noise criteria in Condition [4922](#) being exceeded by either or both of the wind energy facilities;
  - c) agreed protocols with the other wind energy facility operator for recording and responding to complaints from the identified dwellings in [22\(a\)paragraph a\)](#) above; and
  - d) agreed response measures with the other wind energy facility operator including turbine shutdown or noise management pending resolution of the complaint.

## 6.2 Noise level criteria

### 6.2.1 The relevant standard

#### (i) Evidence and submissions

Evidence and submissions detailed dissatisfaction with the noise criteria adopted by the *WEF Guidelines*, on the basis that criteria adopted did not adequately protect residents.

#### (ii) Discussion and conclusion

The proposed permit sets limits by reference to the Noise Standard. The Noise Standard states:

*As a guide to the limits of acceptability at a noise sensitive location, 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  $L_{A90(10 min)}$ , whichever is the greater.*

The *WEF Guidelines* states:

*A wind energy facility should comply with the noise limits recommended for dwellings and other noise sensitive locations in the New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise (the Standard). The Standard specifies a general 40 decibel limit for wind farm sound levels, or the sound should not exceed the background sound level by more than five decibels, whichever is the greater.*

*Under section 5.3 of the Standard, a 'high amenity noise limit' of 35 decibels applies in special circumstances. All wind farm applications must be assessed using section 5.3 of the Standard to determine whether a high amenity noise limit is justified for specific locations, following procedures outlined in clause C5.3.1 of the Standard. Guidance can be found on this issue in the VCAT determination for the Cherry Tree Wind Farm.*

Although the Noise Standard was drafted in New Zealand it has been adopted as appropriate for Victoria, and is the relevant Victorian standard. The standards or approaches of other jurisdiction are not relevant.

The noise limits at the host residences is permitted at 45 dB  $L_{A90(10 \text{ min})}$ .

## **6.2.2 Local amenity**

### **(i) Evidence and submissions**

With respect to local amenity the *WEF Guidelines* state:

*Under section 5.3 of the Standard, a 'high amenity noise limit' of 35 decibels applies in special circumstances. All wind farm applications must be assessed using section 5.3 of the Standard to determine whether a high amenity noise limit is justified for specific locations, following procedures outlined in clause C5.3.1 of the Standard. Guidance can be found on this issue in the VCAT determination for the Cherry Tree Wind Farm.*

In the Marshall Day Acoustics<sup>22</sup> evidence and submission reference is made to the Noise Standard and the VCAT determination for the Cheery Tree Wind Farm. Section 5.3.1 of NZS 6808:2010 states that the base noise limit of 40 dB LA90 is appropriate for the protection of sleep, health, and amenity of residents at most noise sensitive locations.

The peer review undertaken by Resonate Acoustics considered the assessment criteria used by Marshall Day Acoustics. The application of the high amenity criteria was considered by Resonate Acoustics.<sup>23</sup> Resonate Acoustics concluded that the noise criteria adopted in the Marshall Day Acoustics report are appropriate and are consistent with the *WEF Guidelines* and the Noise Standard.

Mr Huson in his evidence made lengthy comments on the appropriateness of using the high amenity criteria for the Mortlake South Wind Farm. Other submitters made reference to the use of the high amenity criteria to determine the noise criteria for the wind farm.

### **(ii) Discussion and conclusion**

With respect to local amenity the *WEF Guidelines* state:

*Under section 5.3 of the Standard, a 'high amenity noise limit' of 35 decibels applies in special circumstances. All wind farm applications must be assessed using section 5.3 of the Standard to determine whether a high amenity noise limit is justified for specific locations, following procedures outlined in clause C5.3.1 of the Standard. Guidance can be found on this issue in the VCAT determination for the Cherry Tree Wind Farm.*

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<sup>22</sup> Proponent's submission Appendix 10

<sup>23</sup> Document 3

Section 5.3 of the Noise Standard makes no reference to the current land zoning for a proposed wind farm site influencing the rating of the amenity of the proposed site. The amenity of a proposed wind farm site is based on the existing acoustic properties of the site. Clause C5.3.1 of the Noise Standard provides a relatively complex acoustic procedure to determine the difference between the existing evening and night-time noise levels and the future predicted noise levels with the wind farm operating.

No allowance was made in determining the noise level limits for residences being designated high amenity. Following guidance in the VCAT determination for the Cherry Tree Wind Farm leads to the conclusion that the proposal is not in an area where the 'high amenity noise limit' would apply, and the effect of the proposed permit condition would be to apply a limit of 40 dB  $L_{A90(10\text{ min})}$ , in this area which has low background noise levels.

The proposed conditions refer to the Noise Standard but the Panel considers it would be more straight forward to simply specify the decibel level

## **6.3 Modelled wind turbine noise levels**

### **6.3.1 Background noise measurements**

#### **(i) Evidence and submissions**

In the Marshall Day evidence, there is reference to the background noise monitoring and that was undertaken between July and October 2007 at five properties in the vicinity of the Mortlake South Wind Farm. There is no evidence in the Marshall Day evidence and submission that more recent background noise measurements have been undertaken. The details of the 2007 noise measurements were not presented in the Marshall Day evidence.

In the expert witness statement of Mr Huson, it is indicated that he has undertaken background noise measurements at five residences and that the background noise levels are of the order of 22 dBA  $L_{A90(10\text{ min})}$ .

Other submitters commented on the background noise measurements having been attempted at various locations in the project area since the previous panel hearing. The submitters concerns were that the measurements were of limited use in determining the existing background noise levels.

#### **(ii) Discussion and conclusion**

Condition 22 provides for the Noise Compliance Testing Plan must be approved before the development starts. Measurements of the existing background noise levels are important as the measured noise levels inform the planning process and establish the existing noise environment.

The compliance testing requirement in the permit requires either:

- the method described in the standard referenced in the noise standard or
- on-off testing,

Potentially, the background noise levels can be established during the operation of the WEF if the measurement method in paragraph 23.e)(ii) of the permit is followed.

The Panel does not see the need for additional testing at this stage.

### 6.3.2 Ground Absorption Factor

#### (i) Evidence and submissions

The Marshall Day Acoustics evidence discussed the application of ground absorption between the noise source and the receivers. Marshall Day Acoustics':

*... experience is that in rural areas, with varied ground conditions, it is appropriate to assign a mixed ground characteristic with 50 per cent hard and 50 per cent porous ground. A ground factor of  $G=0.5$  has therefore been used in the predictions.*

In the submission from Ms Allen<sup>24</sup> it was suggested that  $G=0.5$  factor used by Marshall Day Acoustics is more suitable for ground conditions that are soft and spongy all year round. And that:

*We, in Australia have very different ground surface for about 7 months of the year – we have ground that is hard, which will mean the sound will be amplified ... we think it should be the  $G=0$  to suit our Australian environment.*

In the submission from Mr McMahon (Wind Industry Reform Victoria Inc.)<sup>25</sup> it was suggested that the assumption that  $G=0.5$  is entirely inappropriate for western Victoria where the ground conditions are very hard with little grass cover for half the year.

*It is important that wind farm projects are designed per the noisiest part of the year, not the average conditions.*

Mr Huson gave evidence that that it would be not unreasonable to use a 50/50 mixed ground terrain (50 per cent soft/50 per cent hard) value of  $G=0.5$  for an ISO9613 noise model in the UK:

*However, in Victoria this model input parameter is not considered appropriate.*

Evidence was given to the Hearing by Marshall Day Acoustics that a change of the ground absorption factor from  $G=0.5$  to  $G=0$  would increase the noise levels from the wind farm by 3 dBA. Also, a change of the ground absorption factor from  $G=0.5$  to  $G=1.0$  would decrease the noise levels from the wind farm by 3 dBA.

Mr Huson in his evidence discussed at great length the use of the ground absorption factor, and he contended that:

*The noise model used in the Application is from ISO9613-2. This noise model has limitations and has been used incorrectly by inputting overly optimistic ground absorption levels ( $G=0.5$ ) causing the noise model to underestimate the actual sound levels from the project. A ground absorption value of  $G=0$  is recommended for conditions in Victoria, rather than those used in the UK. This will increase the predicted sound levels by approximately 4 dB.*

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<sup>24</sup> Document 16

<sup>25</sup> Document 21

**(ii) Discussion and conclusion**

It was made apparent to the Panel that in the ISO9613-2 standard, hard ground includes concrete, water and other surfaces having lower porosity. Porous or soft ground includes treed areas, grass and farming areas that are cultivated. Mixed ground consists of a surface area containing both hard and porous surfaces.

The ultimate test is that the wind farm has to meet the specified noise limits when it is operational. The modelling is an early check that compliance is likely to be achieved, but it does not avoid the need for compliance.

The Panel is of the opinion that the value assigned to the ground absorption factor for the modelling of wind farm noise, where the ground is a mix of absorption types, is left to the judgement and the experience of the acoustician undertaking the modelling.

**6.3.3 Modelled levels**

**(i) Evidence and submissions**

In the evidence and submission from the Proponent, the turbine proposed for the wind farm is a Nordex N131/3000 with a rated power of 3.0 MW, a rotor diameter of 131 metres and a hub height of 114 metres. The guaranteed sound power level ( $L_{WA}$ ) at hub height is 104.5 dBA for a wind speed of 10.2 m/s. It was noted that the actual turbine design and turbine height to be used at the subject site may not be this type of turbine.

Twenty three residential properties have been identified by the Proponent to be within 1.5 kilometres of the proposed wind farm, of which 13 are host residences.

The evidence presented by Marshall Day Acoustics indicates that with the revised turbine layout and reduction in the turbine numbers from 51 to 42, the predicted noise levels do not exceed the noise limit of 40 dB  $L_{A90}$  (10min) at any residence including the host residences for all wind speeds.

Mr Huson extensively detailed concerns about the wind farm noise modelling in his submission.

In his witness statement Mr Huson argued that the differences in the noise levels between the approved turbine layout and the Application is not solely due to the changes in the turbine layout and the reduction in the number of turbines. Mr Huson contended that the difference in the predictive noise models used for the approved wind farm and the Application may be contributing to the reduction in predicted noise levels indicated by Marshall Day Acoustics.

Mr Huson stated:

*It is customary in the design of a wind farm to take account of the distances between wind turbines to minimise noise emissions and to maximise efficiency. An outline of such design considerations can be found in 'NSW Wind Energy Handbook 2002': Sustainable Energy Development Authority of NSW (SEDA).*

*From page 53 of the SEDA document:*

- *A wind-farm layout must take into account that turbines have substantial 'wakes', which interfere with each other depending on wind direction and spacing. The general rule of thumb for spacing (the '5r-8r rule') is five times rotor diameter abreast and eight times rotor diameter downwind.*

Mr Delaire advised that the key point is the predicted noise levels at neighbouring dwellings which are the result of the combined influence of a number of turbines. A change in the emission characteristic of any individual turbine would generally not give rise to an equivalent change in the total operational noise level of the wind energy facility. The balance of slight increases and decreases in turbine emissions across the wind energy facility reduces the likelihood of variations of any individual turbine's emissions translating to an equivalent variation in the total combined noise level of the wind energy facility.

## **(ii) Discussion and conclusion**

The Noise Standard states in section 6.1.3 *'Prediction Methods'* that there is not a standardised sound propagation calculation method applicable to wind turbines. It states that ISO 9613-2 provides a good balance between accuracy and completeness on one hand, and the effort of obtaining data to enter into the model on the other. Other prediction methods that can be shown to be appropriate for a given situation may be used, provided the details, assumptions, and limitations of the model are stated.

Many of the issues raised by Mr Huson are not issues that relate to the change between the current permit and the Application. Wake turbulence effects might change with larger turbines but impact of these changes is not definitive.

No allowance was made for any tonality in the wind farm noise because there is no tonal component from the Nordex turbine noise. The permit conditions include a condition to apply a 'penalty' if the actual turbine noise has special audible characteristics.

The Panel accepts the evidence presented by Marshall Day Acoustics that with the revised turbine layout and reduction in the turbine numbers from 51 to 42, the predicted noise levels do not exceed the noise limit of 40 dB  $L_{A90(10min)}$  at any residence including the host residences for all wind speeds.

In Table 2 of the Marshall Day Acoustics report shows the 23 houses with the highest predicted noise levels. The results show that the predicted noise levels range between 35 to 36 dB  $L_{A90(10 min)}$  at six of the non-host noise sensitive residences. The predicted noise levels at the remaining four non-host residences are 34 dB  $L_{A90(10 min)}$  or less. Potentially, the wind farm noise levels are within 1 dBA of the high amenity noise limit of 35 dB  $L_{A90(10min)}$  at six of the non-host residences and less than this limit at the remaining four non-host residences.

Furthermore, the modelled noise levels at seven of the host residences are predicted to be 35 dB  $L_{A90(10 min)}$  or less, while the remaining 6 host residences have predicted noise levels of 38 dB  $L_{A90(10 min)}$  or less.

## **6.4 Noise compliance testing**

### **(i) Evidence and submissions**

The *WEF Guidelines* state:

*Planning permit conditions should require post installation noise compliance to be monitored and demonstrated to the satisfaction of the responsible authority. Refer to the model permit conditions in Attachment B.*

*Certification of whether a wind energy facility complies with the Standard and other applicable noise requirements must be undertaken by an acoustic engineer. The wind energy facility operator must provide the responsible authority with appropriate documentation signed by an independent, appropriately qualified and experienced person. The certifier must be able to demonstrate to the responsible authority appropriate independence, qualifications and experience to carry out the task. Measurement and compliance assessment methods are set out in the Standard.*

In its submission the Department of Environment, Land, Water and Planning stated:

*Wind farm noise compliance must be established by testing and reporting by specialist noise and acoustic consultants familiar with the application of the applicable standards and requirements.*

Moyne Shire Council believed it would be useful for the Panel to seek a review of the Noise Compliance Testing Plan having regard to the nature of the changes sought and the implementation (successes and failures) of similar conditions on operational wind farms.

Mr Huson in his evidence made several relevant comments about compliance testing.

Several submissions expressed concerns about the achieving the wind farm compliance requirements. The current planning permit requires a noise compliance testing plan be developed and approved before the wind farm development begins. The plan must be approved by the Minister for Planning and will form part of the planning permit for the wind farm.

Mr Huson In his evidence indicated that compliance testing had not been addressed by Marshall Day Acoustics. Mr Huson also indicated that he had recently reviewed a compliance testing assessment approach using on off testing from the UK where the testing was done by setting all of the wind turbines on the windfarm are to turn on and off at predetermined times throughout the monitoring at noise sensitive locations. This compliance testing methodology allows the background set of measurements to be completed at the same time as the wind farm noise is determined. Mr Huson recommended a condition in the permit requiring on/off testing to be included as part of the compliance testing requirements.

### **(ii) Discussion and conclusion**

Many of the concerns raised do not relate to the change in impact between the current permit and the Application. The current permit conditions provides for on/off testing as an option.

The Panel prefers that the noise compliance testing involves the measurement of noise from the WEF using the on/off measurement technique described in section 23.e)(ii) of the permit so that the background noise levels without the influence of the wind farm noise can be determined.

The Panel is of the opinion that Condition 23 of the revised permit which sets out the noise compliance assessment requirements will adequately address the concerns raised at the Hearing.

Furthermore, the Noise Compliance Testing Plan will address the issue of non-compliance of the noise limits if this occurs during the compliance testing. The Plan will need to demonstrate a strategy for rectifying the non-compliance issues for the life of the project.

## **6.5 Noise complaint management**

### **(i) Evidence and submissions**

Various submitters had concerns regarding the current response by the Proponent to complaints about the proposed wind farm and expressed concern about the proposed noise complaint system.

### **(ii) Discussion and conclusion**

The Panel notes that in the current permit conditions the Proponent is required to develop a Complaint Investigation and Response Plan.

The proposed conditions provide a comprehensive reworking of the condition for Complaint Investigation and Response Plan to be prepared in accordance with Australian/New Zealand Standard AS/NZ10002:2014 – *Guidelines for complaint management in organisations*.

The Panel considers that the revised condition will provide for a robust complaints management regime.

## **6.6 Construction noise**

### **(i) Evidence and submissions**

The *WEF Guidelines* highlight construction noise as being an issue of windfarm developments, however, does not detail amelioration measures.

There is no mention of construction noise requirements in the Proponent or Marshall Day Acoustics evidence or submission other than that mentioned in the existing permit.

Mr Blain, in his submission and evidence at the Hearing, indicated that he was concerned about the potential noise, dust and truck traffic from a sand stone quarry across the road from his house during the construction process.

### **(ii) Discussion and conclusion**

The Interim Guidelines for the Control of Noise from Industry in Country Victoria, N3/89, have been superseded by Environment Protection Authority (EPA) guidelines *Noise from industry in regional Victoria, Recommended maximum noise levels from commerce, industry*

*and trade premises in regional Victoria*, Publication 1411, October 2011. Construction noise is specifically not covered by these guidelines.

EPA *Noise Control Guidelines*, Publication 1254, October 2008, detail the requirements for construction and demolition sites, in particular industrial and commercial premises. The guidelines specify noise limits and the hours of application for these limits. The Noise Control Guidelines also specify noise measurement techniques and measurement procedures. These guidelines are included in the updated planning permit of the wind farm.

Noise from associated wind farm construction activities such as truck routes on non-arterial roads where the existing traffic is relatively small will also be a condition of the updated permit. Also, if local resources are used for the construction of the wind farm then the hours of operation conditions specified in the guidelines will also apply to these activities for the duration of the construction period.

## **6.7 Conclusions**

The Panel concludes:

- The Proponent will need to remodel the wind farm noise impacts once the final turbine design has been chosen and report the modelling to the Minister for Planning approval.
- Marshall Day Acoustics noise modelling for the Proponent indicates that the potential noise levels will be less than the limit of 40 dB  $L_{A90(10min)}$  specified in the Noise Standard.
- Marshall Day Acoustics noise modelling for the Proponent indicates that the potential noise levels will be within 1 dBA or less of the high amenity limit of 35 dB  $L_{A90(10min)}$  at most of the noise sensitive residences (non host) identified.
- The Panel prefers that the noise compliance testing involves the measurement of noise from the WEF using the on/off measurement technique described in section 23.e)(ii) of the permit so that the background noise levels without the influence of the wind farm noise can be determined.
- Noise from associated wind farm construction activities such as truck routes on non-arterial roads where the existing traffic is relatively small and the use of local resources such as quarries be managed by the hours of operation and permitted noise levels specified in the EPA Noise Control Guidelines.

## **6.8 Recommendations**

The Panel makes the following recommendations:

- 6. Amend Condition 22.a) to specify the actual noise limit in decibels.**

## 7 Other issues

### 7.1 Corrections and changes

The revised permit contains a number of revision and corrections including the land to which it applies, and the changes in department names. These changes are not contentious.

### 7.2 Who is the responsible authority?

#### (i) Evidence and submissions

Council's proposed amendments include a change that provides that the Minister is the responsible authority for administration and enforcement of the planning permit, rather than Council.

Under the provisions of Clause 61.01-1 of the Moyne Planning Scheme the Minister for Planning is the responsible authority for a WEF (except for permits for a WEF issued before to 2 April 2015 under Division 6 of Part 4 of the *Planning and Environment Act 1987* (P&E Act), and Council is responsible authority for endorsement, administration and enforcement of a WEF planning permit, subject to the operation of Section 97H of the P&E Act which deals with

- any matters which the permit specifies to be done by, approved by or done to the satisfaction of the Minister
- any extension of time under section 69 in relation to the permit
- the correction of any error
- the amendment of the permit.

Moyne submitted that:

*The existing permit is heavily weighted towards the Minister for Planning in its current form and structure. There are only three obvious instances where the permit references the responsible authority rather than the Minister being:*

- *Condition 5 (d) where landscape works as shown on the endorsed off-site landscape plan (endorsed by Minister) must be completed to the satisfaction of the responsible authority.*
- *Condition 20 – Noise Compliance – third paragraph specifies the use must be carried out in accordance with the noise compliance testing plan to the satisfaction of the responsible authority*
- *Condition 24 – Blade Shadow Flicker – use must be carried out in accordance with approved process and alleged breaches identified by this process must be addressed to the satisfaction of responsible authority.*

Based on the operation of Section 97H of the P&E Act, and as the current planning permit states that the Minister for Planning is responsible for approving and endorsing extensive secondary consent matters, Council submitted there is merit in the Minister being the responsible authority for the entire permit other than traffic management conditions where the expertise for these conditions exists with VicRoads and Moyne Shire Council.

The Proponent noted:

*The mechanism in section 114 of the Planning and Environment Act allows 'any person' to take enforcement action with respect to contraventions of the Act or a permit condition.*

**(ii) Discussion and conclusion**

The effect of Clause 61 of the Planning Scheme together with section 97H of the *Planning and Environment Act* is that Council is the responsible authority for enforcement. This cannot be changed by altering the permit.

The Panel has some sympathy for Council but does not see how it is an issue that can be effectively addressed by the Application. The Panel's understanding is that it would require changes to the planning scheme.

### **7.3 Aviation lighting**

**(i) Background**

The precise wording of conditions around aviation lighting was subject to negotiation after the Hearing.

**(ii) Proposed changes**

The Proponent has proposed or accepted the following changes to the permit:

8. If consent to install aviation obstacle lighting is obtained it must be installed under the following conditions:
- a) the aviation obstacle lighting must be installed such that it is activated only:
    - (i) if at night, when an aircraft is in the immediate vicinity of the wind energy facility;
    - (ii) during low visibility daytime conditions such as the existence of smoke and fog;
- unless the technology that enables the requirements of paragraphs (i) and (ii) above to be met is not proven or ~~generally~~ available ~~for sale and use in Australia~~, in which case the lighting system installed must be to the satisfaction of the Minister for Planning;

This issue relates to the detailed drafting of the condition around aviation lighting. The current condition is not clear and the department suggested:

*... unless the technology that enables the requirements of paragraphs (i) and (ii) above to be met is not proven or ~~generally~~ available ~~for sale and use in Australia~~, and the Minister for Planning provides his written consent, ~~in which case~~ an alternative lighting system must be installed to the satisfaction of the Minister for Planning*

The Proponent advised:

*We have deleted the words “and the Minister for Planning provides his written consent” from the condition. We note DELWP’s concern that the Minister should have the power to determine whether the remotely activated technology is “proven and available”. In our view, the words “to the satisfaction of the Minister for Planning” at the end of the condition already confer on the Minister the power to determine whether the technology is proven and available, in addition to approving the lighting system. Accordingly, the extra words regarding the Minister’s written consent are not required, and we suggest they should be removed.*

**(iii) Conclusion**

The Panel is satisfied that the revised form of words provides an adequate framework for resolving this issue, should it arise.

## Appendix A Submitters to the Amendment

No.	Submitter
1	Ray Anderson
2	Peter Molan on behalf of WA Molan & Sons
3	James Law
4	Donald Thomas
5	Sarah and Greg Jenz
6	Grant & Michele Holmes
7	Melanie Askew
8	Peter M
9	Richard Buxton
10	Pamela Bell
11	Bradley Castle
12	Chris Moore
13	Phillip Reid
14	Paul Bryant
15	Robert Justin
16	Gary Kenna
17	James Calvert
18	Andrew & Neil Chard
19	Peter Allen
20	Marg Allen
21	Sigrid Macleod
22	Lisa Allen
23	Shelley McDonald
24	Tim Clingan on behalf of Earth Water Technologies
25	Tim Clingan on behalf of Earth Water Technologies
26	Noel McConnell on behalf of NPM architects
27	Hamish Cumming
28	Heather Hicks
29	Bernard Conheady

30	Edward, Geraldine, William, Laura, Joseph Conheady
31	Ian Charles
32	Moyne Shire Council
33	Greg and Kelli Abbott
34	Neil Blain
35	John McMahon on behalf of Wind Energy Reform Victoria Inc.
36	Noel Dean
37	Bruce Allen and Georgie Knight on behalf of Allen and Knight

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## Appendix B Parties to the Panel Hearing

Submitter	Represented by
The Minister for Planning as Responsible Authority	Hugh Griggs of DELWP
Acciona Energy Australia Global Pty Ltd	Michelle Quigley QC instructed by Emily Johnstone of Allens and calling evidence in: <ul style="list-style-type: none"><li>- Flora and Fauna (Brett Lane)</li><li>- Acoustics (Christophe Delaire)</li><li>- Landscape and Visual Impact (Adam Kiekebosch)</li><li>- Traffic (John Kiriakidis)</li></ul>
Moyne Shire Council	Aaron Moyne assisted by Michelle Grainger
Shelley McDonald	
Peter and Lisa Allen	Calling expert evidence in: <ul style="list-style-type: none"><li>- Acoustics (Les Huson)</li></ul>
Tim Clingan	
Neil Blain	
Gregory and Kelli-Jane Abbott	
Geraldine Conheady	
Wind Industry Forum Victoria Inc.	John McMahon
Donald Thomas	
WA Molan and Sons	Peter Molan

## Appendix C Document list

No.	Date	Description	Tabled by
1	28/11/16	Draft Planning Permit conditions (dated 26/11/16)	Proponent
2	28/11/16	Submission on behalf of the Minister for Planning	DELWP
3	28/11/16	Submission of behalf of Applicant Acciona Energy Australia Global Pty Ltd	Proponent
4	28/11/16	Transport evidence	GTA Consultants
5	28/11/17	Landscape and Visual Impact Assessment evidence	SMEC
6	28/11/16	Ms Shelly McDonald submission	Ms McDonald
7	29/11/16	Flora and Fauna evidence	Brett Lane and Associates
8	29/11/16	Applying the Rural Zones Planning Practice Note 42	Proponent
9	29/11/16	Comparison of Planning Controls (2010 vs 2016)	Proponent
10	29/11/16	VCAT Hearing – Bestway Group Pty Ltd v Monash City Council	Proponent
11	29/11/17	VCAT Hearing – Cherry Tree Wind Farm Pty Ltd V Mitchell Shire Council	Proponent
12	29/11/16	VicRoads Letter – Traffic Management Plan	Proponent
13	29//11/16	Consultation Summary of Proposed Changes	Proponent
14	29/11/16	Marshall Day Acoustics evidence	MDA
15	30/11/16	Bird survey results - height distribution	Proponent
16	30/11/16	Moyne Shire Council submission	MSC
17	30/11/16	Ms Lisa Allen submission	Ms Allen
18	30/11/16	Mr Peter Allen submission	Mr Allen
19	30/11/16	Mr Neil Blain submission	Mr Blain
20	30/11/16	Ms Geraldine Conheady submission	Ms Conheady
21	1/12/16	Wind Industry Reform Victoria submission	Mr McMahan
22	1/12/16	Draft Planning Permit conditions (dated 30/11/16)	Proponent
23	1/12/16	Ms Geraldine Conheady submission (addendum)	Ms Conheady
24	1/12/16	The Sisters Wind Farm Pty Ltd v Moyne Shire Council and others, proposed orders	Proponent
25	1/12/16	Resonate Acoustics evidence	Proponent

## Appendix D Permit

### Panel Version of Documents

[Tracked Added](#) ~~[Tracked Deleted](#)~~ show the changes agreed to by the Proponent at the end of the Hearing

[Tracked Added](#) ~~[Tracked Deleted](#)~~ show the changes from the Proponents preferred position as recommended by the Panel

### PLANNING PERMIT

**Permit No:** 2008/0538

**Planning Scheme:** Moyne

**Responsible Administration and Authority Enforcement of this Permit:** Moyne Shire Council

### ADDRESS OF THE LAND:

Land generally described south of Mortlake as:

The land bounded by Mortlake Framlingham Road to the west, Hinkleys Lane and Terang-Mortlake Road to the north, ~~Tapers~~[Tapps](#) Lane to the east and Londrigans Lane to the south, inclusive of:

Allotment 57A, Parish of Kolora

Allotment 47A, Parish of Kolora

Lot 1 PS 405742

Lot 2 PS 4057 42

Lot 45 LP4049

Lot 44 LP 4049

Lot 1 LP [9454994569](#)

Lot 2 LP [9454994569](#)

Lot 1 TP 535872

Lot 1 TP 118582

Lot 2 TP 395362

Lot 1 TP 395362

Lot 2 LP 209050

~~Lot 1 TP 341828~~

Allotment 17, Parish of Kolora

Allotment 18, Parish of Kolora

Lot 1 TP 173596

Lot 2 TP 173596

Lot 1 TP 173678

Allotment 18A, Parish of Kolora

Allotment 76, Parish of Kolora

Lot 1 LP 89265

[Allotment 1B, Section 21 \(pt\) Parish of Kolora](#)

Lot 1 PS 412947

Lot 2 PS 412947

Lot 3 PS 412947

Lot 4 PS 412947

Lot 1 TP 204033

Lot 16B LP 4049

Allotment 19A, Parish of Kolora

Allotment 20A, Parish of Kolora

Allotment 7A, Section 3, Parish of Kolora

[Allotment 1A, Section 2, Parish of Kolora](#)

Allotment 2A, Section 2, Parish of Kolora

[Lot 1 TP 741556](#)

Lot 1 TP 338652

Lot 1 TP 868762

[Lot 1 TP 126572](#)

[Lot 1 TP 128301](#)

[Lot 1 TP 412906](#)

[Lot 1 TP 376172](#)

Lot 1 TP 761875

Lot 2 [Section 2](#)-LP 80636

[Allotment 33A, Parish of Kolora](#)

Lot 1 [Section 2 LP 80636 \(Pt\)-TP 402137](#)

[Lot 1 TP 892099](#)

[Lot 1 TP 946667](#)

[Lot 8 TP 422981](#)

[Lot 9 TP 422981](#)

[Lot 7 TP 422981](#)

[Lot 6 TP 422981](#)

[Allotment 2004, Parish of Kolora](#)

[Lot 4 TP 422981](#)

[Allotment 2002, Parish of Kolora](#)

[Lot 3 TP 422981](#)

[Lot 5 TP 422981.](#)

**THE PERMIT ALLOWS:**

Use and development of land for a wind energy facility, comprising [5142](#) wind turbines and associated infrastructure (including the construction of access tracks, electrical cabling, two substations, control and maintenance facility, three permanent anemometers, temporary construction facilities, business identification signage, car parking and bicycle facilities) as described in those portions of the "Mortlake Wind Farm" planning permit application report relating to the "Mortlake South" component [and the removal of native vegetation](#).

Alterations to an existing access point to a Road Zone Category 1 (Terang – Mortlake Road).

**THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT:**

**DEVELOPMENT PLANS**

1. Before the development starts, development plans must be prepared to the satisfaction of the Minister for Planning. When approved, the plans will be endorsed by the Minister for Planning and will then form part of this permit. The plans must be drawn to scale with dimensions and three (3) copies must be provided.

The plans must show:

- a) the location, setbacks to property boundaries, layout and dimensions of all on-site buildings and works including all wind turbines, access tracks, underground cables, temporary concrete batching plant, the sub-station(s), the switchyard, landscaping, any designated car parking areas, and ancillary works, such as construction compounds, fire fighting infrastructure and water tanks, as well as off-site road works;
- b) at least a 50 metre setback of turbines from designated waterways;
- c) global positioning system coordinates using WGS84 datum for each turbine;
- d) details of the model and capacity of the wind turbines to be installed;
- e) dimensions, elevations, materials and finishes of the wind turbines and other buildings and works;
- f) any directional signage and any required safety signage;
- g) business identification signage including dimensions, details, colours and graphics; and
- h) any staging of development.

The plans must be generally in accordance with [the Mortlake South Planning Panel Layout Plan 1D \(file reference \MOR\\_PLP\\_004\\_04A dated 26/02/10 as tabled at the Directions Hearing](#)

[MLS\\_LAY\\_071\\_02A as tabled in 'Mortlake South Wind Farm Planning Permit Amendment Application April 2016'](#).

2. The use and development as shown on the endorsed plans must not be altered or modified without the written consent of the Minister for Planning; except that the micro-siting of wind turbines and consequential micro-siting of associated tracks and reticulation lines as defined below, does not require consent and will be viewed generally in accordance with the endorsed plans.

For the purpose of this condition, micro-siting of wind turbines:

- is where the siting of a wind turbine is altered by not more than 100 metres, but is not relocated closer to a nearby boundary of a non-stakeholder property than shown on the endorsed plans;
- ensures any micro-siting does not move a turbine closer than 1,005 metres to a non-stakeholder dwelling;
- ensures no turbine is located within 5075 metres of a title boundary of a non-stakeholder or a public road;
- includes any consequential changes to access tracks and electricity reticulation lines; and
- is only allowed where the Minister for Planning is satisfied that the relocation of the turbine(s) and associated access track(s) and reticulation lines(s) will not give rise to an adverse change to assessed landscape, vegetation, cultural heritage, visual amenity, shadow flicker, noise, fire risk or aviation impacts when compared to the site shown on the endorsed plans.

To this end any request for confirmation of the Minister's satisfaction must be accompanied by supporting material addressing the above matters as relevant.

Note: For the purpose of this condition, a non-stakeholder means the land holder of an abutting property without a contract for the installation of the permitted wind turbines on that person's property.

#### **SPECIFICATIONS**

3. The wind energy facility must meet the following requirements:
- a) the wind energy facility must comprise no more than 5142 wind turbines;
  - b) the overall maximum height of the wind turbines (to the tip of the rotor blade when vertical) must not exceed 144186 metres above natural ground level;
  - c) wind turbines must be mounted on a tubular tower with a height of no greater than 100120 metres;
  - d) each wind turbine is to have not more than three rotor blades, with ~~each blade having a length of no greater than 41 metres~~ each blade having a length of no greater than 73 metres and with the lowest swept height no lower than ~~48~~ 40 metres above natural ground level unless the written consent of the Minister for Planning has been obtained for a longer blade or lower sweep height or both;
  - e) the transformer associated with each wind generator must be located beside each tower and pad mounted, or be enclosed within the tower structure;

- f) the wind turbine towers, nacelles and rotor blades must be of a colour or have such markings that minimise ground level impact to the satisfaction of the Minister for Planning;
- g) the colours and finishes of all other buildings and ancillary equipment must be such as to minimise the impact of the development on landscape to the satisfaction of the Minister for Planning;
- h) access tracks within the site are to be sited and designed to minimise impacts on overland flows, soil erosion, the landscape value of the site, environmentally sensitive areas and, where appropriate, the farming activities on the land to the satisfaction of the Minister for Planning;
- i) new on-site electricity reticulation lines associated with the wind energy facility must be placed under the ground, except, with the written consent of the Minister for Planning;
- j) on-site fire fighting infrastructure must be provided in accordance with Condition ~~13(f)~~; [16.f](#); and
- k) business identification signage on the wind farm must not exceed 3m<sup>2</sup> in total.

#### LANDSCAPE/VISUAL AMENITY

4. Before the development starts, an on-site landscape plan must be prepared to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed and will then form part of this permit. The plan may be submitted in stages, if required. The plan must include:
- a) a statement outlining the design intentions of the plan;
  - b) landscaping or building works to screen the substation, switchyard and associated buildings other than the turbines;
  - c) details of plant species proposed to be used in the landscaping, including installation size, numbers, height and spread at maturity;
  - d) a timetable for implementation of all landscaping works;
  - e) a maintenance, replacement and monitoring program; and
  - f) arrangements for surfacing of access tracks in a manner which does not unduly contrast with the landscape and the rehabilitation of track margins.
- The landscaping as shown on the endorsed on-site landscaping plan must be completed to the satisfaction of the Minister for Planning in accordance with the implementation timetable.
5. Within 6 months of the date of endorsement of the development plan under Condition 1:
- a) a program of voluntary landscape mitigation works to the satisfaction of the Minister for Planning must be made available to the owners of dwellings within 3.0 kilometres plus 20 metres for every metre the overall maximum turbine height exceeds 141 metres, of the nearest turbine;
  - b) if a program of voluntary landscape mitigation works is accepted by one or more owners under Condition 5.a), as part of that program, an off-site landscaping plan must be prepared in consultation with the landowners specified in Condition 5.a) to the satisfaction of the Minister for Planning. When approved the plan will be endorsed and will then form part of this permit.

The plan must provide details of planting or other treatments that will be used to reduce the visual impact of the wind turbines at the dwellings of the participating landowners.

The off-site landscape plan must include:

- (i) the design intention of the plan;
  - (ii) details of the plant species to be used, including the height and spread of plants at maturity and their suitability in terms of;
    - appropriateness for local conditions (may include indigenous and exotic species) and fire safety (low combustibility)
    - impact on native vegetation (weed propensity, overshadowing of remnants on roadsides)
  - (iii) use of a mix of tubestock and advanced planting with good survival potential to provide immediate and long term screening;
  - (iv) reinforcement planting for existing senescent vegetation likely to die within the project lifespan;
  - (v) maintenance of landscaping for at least three years; and
  - (vi) a timetable for implementation of the landscaping works to ensure planting is undertaken at a seasonally appropriate time.
- c) The availability of offsite landscaping to those owners identified in Condition 5.a) must remain in place until 12 months after the commissioning of the last turbine.
- d) The landscape works as shown on the endorsed off-site landscape plan must be completed to the satisfaction of the ~~responsible authority~~ [Minister for Planning](#) within the timetable provided in the plan.

#### **LIGHTING INCLUDING AVIATION OBSTACLE LIGHTING**

6. Except in the case of an emergency or any operational call-out, no external lighting of infrastructure associated with the wind energy facility, other than low-level, low-intensity security lighting and aviation lighting in accordance with Condition 8 below, may be installed or operated without the further written consent of the Minister for Planning.
7. Aviation obstacle lighting must not be installed unless the written consent of the Minister for Planning has been obtained.
8. If consent to install aviation obstacle lighting is obtained it must be installed under the following conditions:
  - a) the aviation obstacle lighting must be installed such that it is activated only:
    - (i) if at night, when an aircraft is in the immediate vicinity of the wind energy facility;
    - (ii) during low visibility daytime conditions such as the existence of smoke and fog;

unless the technology that enables the requirements of paragraphs (i) and (ii) above to be met is not proven or ~~generally available for sale and use in Australia~~, [in which case the](#) lighting system [installed](#) must be to the satisfaction of the Minister for Planning;

- b) for each lit turbine, the lighting must consist of a pair of lights mounted above the nacelle so that one is visible from an aircraft approaching from any direction;
- c) each light must be a red medium intensity, flashing light as defined by Civil Aviation Safety Authority (CASA). Each light must be shielded so as to restrict the vertical spread of light to not more than 3 degrees and light spread below the horizontal to not more than 1.0 degree;
- d) all lights must flash in unison;
- e) the duration of the light flash must be the minimum period recommended by CASA and the duration of the period between the flashes must be the maximum period recommended by CASA;
- f) the lights are to switch on and off at times of ambient lighting conditions as recommended by CASA; ~~and~~
- g) before the wind farm is commissioned, a lighting maintenance plan must be prepared to the satisfaction of the Minister for Planning; ~~and~~
- h) the lights are designed to minimise their attraction to insects and therefore potentially bats.

#### AVIATION SAFETY CLEARANCES

- 9. Within 14 days of approval, copies of the endorsed development plans must be provided to CASA, the Department of Defence (RAAF Aeronautical Information Service), Airservices Australia, any aerodrome operator within 15 km, the Aerial Agriculture Association of Australia and to any organisation responsible for providing air ambulance services in the area; to enable details of the wind energy facility to be shown on aeronautical charts of the area.

#### TRAFFIC MANAGEMENT

- 10. Prior to the development of a traffic management plan an accurate reassessment of vehicle numbers for over dimensional, heavy duty and light vehicles must be undertaken in consultation with Moyne Shire Council, Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning.
- 11. Prior to the commencement of construction of wind turbine footings, crane hardstand, internal access roads and substation, the road construction works as shown on the plan(s) endorsed under Condition 12 must be completed by the permit holder and assessed by the Road Quality Auditor, in consultation with Moyne Shire Council and VicRoads to the satisfaction of the Minister for Planning.
- 12. Before the development starts, a traffic management plan must be prepared in consultation with ~~Moyne Shire Council~~, Corangamite Shire Council and ~~VicRoads~~ the Minister for Planning to the satisfaction of ~~the Minister for Planning Moyne Shire Council and VicRoads~~. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:
  - a) an existing conditions survey of public roads ~~to the satisfaction of Moyne Shire Council, Corangamite Shire Council and VicRoads (as relevant)~~ that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads;

- b) the designation of appropriate construction and transport vehicle routes to the wind energy facility site;
- c) the designation of operating hours and speed limits for trucks on routes accessing the site so as to avoid school bus routes and school bus times where relevant, and to provide for resident safety;
- d) the identification and timetabling of any required pre-construction works;
- e) the designation of all vehicle access points to the wind energy facility from surrounding roads. The location and detailed design of the connection between the internal access tracks and the public roads must ensure safe sight distances, turning movements, and avoid potential through traffic conflicts;
- f) recommendations on the need for road and intersection upgrades to accommodate any additional traffic or site access requirements, whether temporary or on-going and the timing of when these upgrades are to be undertaken. This is to include engineering plans demonstrating how truck movements can be accommodated on sealed roadways. The plan must include details of any required road construction works, including consideration of works at Terang-Mortlake Road and Tapps Lane;
- g) measures to be used to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads;
- h) a program of regular inspections to be carried out during the construction period to identify maintenance works necessary as a result of construction traffic;
- i) a program to rehabilitate roads to the condition identified by the surveys required ~~above~~ by Condition ~~11(a), 12.a)~~ above; ~~and~~
- j) if required by Moyne Shire Council and/or Corangamite Shire Council, the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the traffic management plan. Such security deposit or bond is to be applied to road works not completed under the Traffic Management Plan or to be released at the end of that period;
- k) consideration of road sealing, the construction of gravel shoulders and associated drainage works at:
  - (i) Tapps Lane;
  - (ii) Grinters Lane;
  - (iii) Chamallak Lane; and
  - (iv) depending on anticipated traffic volumes and composition of vehicle movements, any other roads required for construction of the wind energy facility.

Plans prepared under this condition must include cross-sections showing their formation, depth, drainage and surface levels to the satisfaction of the Minister for Planning. Any variation to the width of the road widening to avoid native vegetation must be indicated on the plans.

- l) the scope of the expertise, duties and role of the nominated Road Quality Auditor engaged under Condition 14, including inspection frequency and reporting requirements;

- m) the number and type of anticipated vehicle movements and the time of day when local roads will be used;
  - n) 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 and turning movements, and to avoid potential through traffic conflicts;
  - o) the designation of appropriate pre-construction, construction and transport vehicle routes to and from the wind energy facility site;
  - p) provision of designated areas for loading zones;
  - q) measures to be undertaken to record traffic volumes on the nominated road network during the construction of the wind energy facility;
  - r) proposed measures to ensure workers enter and exit the wind energy facility site from the designated side entrance at Tapps Lane;
  - s) proposed measures to ensure construction vehicles are easily identifiable;
  - t) proposed measures to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads; and
  - u) a program to rehabilitate existing public roads within agreed timeframes to the condition identified in the surveys carried out under Condition 12.a) or to the condition to which the roads have been upgraded, whichever is relevant.
13. Where there is:
- a) a significant increase in 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 updated to the satisfaction of the Minister for Planning in consultation with Moyne Shire Council and VicRoads within 28 days of the event described in paragraph a) or b).
14. Before the endorsement of the Traffic Management Plan, the permit holder and Moyne Shire Council must agree and submit to the Minister for Planning for approval the identity of a suitably qualified engineer, independent of the permit holder's traffic advisor, who will undertake 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.
15. The traffic management and road upgrade and maintenance works associated with the wind energy facility must be carried out in accordance with the traffic management plan to the satisfaction of the Minister for Planning and the cost of any works including maintenance are to be at the expense of the permit holder.

#### **ENVIRONMENTAL MANAGEMENT PLAN**

16. Before the development starts, an environmental management plan must be prepared to the satisfaction of the Minister for Planning, in consultation with the Department of Sustainability, Environment, Land, Water and Planning – Environment, Portfolio (DELWP)

[Environment Portfolio](#)), Moyne Shire Council, Country Fire Authority and other agencies as specified in this condition or as further directed by the Minister for Planning. The environmental management plan may be prepared in sections or stages. When approved, the plan will be endorsed by the Minister for Planning and will then form part of this permit.

The environmental management plan must include the following:

- a) A **construction and work site management plan** which must include:
  - (i) procedures for access, noise control, dust emissions, spills and leaks from the handling of fuels and other hazardous materials and pollution management. Such construction and work site procedures are to be in accordance with the Environment Protection Authority Publication 480, *Environmental guidelines for major construction sites* and any other EPA requirements;
  - (ii) the identification of all potential contaminants stored on site;
  - (iii) the identification of all construction and operational processes that could potentially lead to water contamination;
  - (iv) the identification of appropriate storage, construction and operational methods to control any identified contamination risks;
  - (v) the identification of waste re-use, recycling and disposal procedures;
  - (vi) appropriate sanitary facilities for construction and maintenance staff in accordance with the Environment Protection Authority Publication 891.1 *Septic Tanks Code of Practice*;
  - (vii) a timetable, where practicable for the construction of turbine bases, access tracks and power cabling during warmer months to minimise impacts on ephemeral wetlands, local fauna and sediment mobilisation;
  - (viii) procedures to ensure that construction vehicles and equipment use designated tracks and works areas to avoid impacts on native vegetation;
  - (ix) the covering of trenches and holes at night time and to fill trenches as soon as practical after excavation, to protect native fauna; and
  - (x) the removal of works, buildings and staging area on completion of construction of the project.
  
- b) A **sediment, erosion and water quality management plan**. This plan must be prepared in consultation with the Corangamite Catchment Management Authority, the Environment Protection Authority and other authorities as may be directed by the Minister for Planning. The plan must include:
  - (i) procedures to ensure that silt from batters, cut-off drains, table drains and road works is retained on the site during and after construction and replaced as soon as possible. To this end:
    - all land disturbances must be confined to a minimum practical working area;
    - soil to be removed must be stockpiled and separate soil horizons must be retained in separate stockpiles and not mixed and replaced as soon as possible in sequence; and

- stockpiles must be located away from drainage lines;
  - (ii) criteria for the siting of any temporary concrete batching plant associated with the development of the wind energy facility and the procedure for its removal and reinstatement of the site once its use finishes. The establishment and operation of any such temporary concrete batching plant must be designed and operated in accordance with the Environment Protection Authority Publication 628 *Environmental Guidelines for the Concrete Batching Industry*;
  - (iii) the installation of geo-textile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive run-off from disturbed areas;
  - (iv) procedures to suppress dust from construction-related activities. Appropriate measures may include water spraying of roads and stockpiles, stabilising surfaces, temporary screening and/or wind fences, modifying construction activities during periods of heightened winds and revegetating exposed areas as soon as practicable;
  - (v) procedures to ensure that steep batters are treated in accordance with Environmental Protection Authority Publication 275 *Construction Techniques for Sediment Pollution Control*;
  - (vi) procedures for waste water discharge management;
  - (vii) a process for overland flow management to prevent the concentration and diversion of waters onto steep or erosion prone slopes;
  - (viii) pollution management measures for stored and stockpiled materials including waste materials, litter, contaminated run-off and any other potential source of pollution to ground or surface waters;
  - (ix) incorporation of pollution control measures outlined in Environment Protection Authority Publication 480 *Environmental Guidelines for Major Construction Sites*;
  - (x) siting of concrete batching plant and any on-site wastewater and disposal and disposal treatment fields at least 100 metres from any watercourse;
  - (xi) appropriate capacity and an agreed program for annual inspection and regular maintenance of any on-site wastewater management system constructed to service staff, contractors or visitors; and
  - (xii) a program of inspection and remediation of localised erosion within a specified response time.
- c) A **blasting plan**. *This plan is only required if blasting is proposed to be undertaken at the site as part of the construction of the wind energy facility.* The plan must include the following:
- (i) name and qualification of the person responsible for blasting;
  - (ii) a description of the location of where the explosives will be used, and the location of every licensed bore on any property with an adjoining boundary within 1km of the location of the blasting;

- (iii) a requirement for the identification and assessment of any potentially sensitive site within 1km of the location of the blasting, including the procedure for pre-blast and post-blast qualitative measurement or monitoring at such site;
  - (iv) the procedure for site clearance and post blast reoccupation;
  - (v) the procedure for the storage and handling of explosives;
  - (vi) a requirement that blasting only occur after at least 48 hours prior notification in writing of the intention to undertake blasting has been given to the occupants of the properties which are located in whole or in part within 1km of the location of the proposed blasting; and
  - (vii) a requirement that blasting only be undertaken between the hours of 8am and 4pm.
- d) A **hydrocarbon and hazardous substances plan**. The plan must include:
- (i) procedures for any on-site, permanent post-construction storage of fuels, lubricants or waste oil to be in bunded areas; and
  - (ii) contingency measures to ensure that any chemical or oil spills are contained on-site and cleaned up in accordance with Environment Protection Authority requirements.
- e) A flora and fauna management plan to be prepared in consultation with the Department of Sustainability and Environment. This plan must include:
- (i) measures to protect native vegetation in the site area including application of the Native Vegetation Management Framework principles ~~(removal of such vegetation is not approved by this permit);~~
  - (ii) measures to protect native fauna during construction and operation of the wind farm; and
  - (iii) procedures for the rehabilitation of construction zones with appropriate pasture species.
- f) A **wildfire prevention and emergency response plan** prepared to the satisfaction of the Minister for Planning in consultation with the Country Fire Authority, the ~~Department of Sustainability and~~ DELWP Environment [Portfolio](#) and Moyne Shire Council. This plan must include and consider:
- (i) constructed roads should be a minimum of (4) four metres trafficable width with a four metre (4m) vertical clearance for the width of the formed road;
  - (ii) roads should be constructed to a standard so that they are accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width;
  - (iii) the average grade of should be no more than 1 in 7 (14.4 per cent) (8.1°) with a maximum of no more than 1 in 5 (20 per cent) (11.3°) for no more than 50 metres;
  - (iv) dips in the road should have no more than a 1 in 8 (12.5 per cent) (7.1 °) entry and exit angle;

- (v) water access points shall be located in safe easily identifiable areas, accessible in all weather conditions;
  - (vi) water access points should be designed, constructed and maintained for a load limit of at least 15 tonnes;
  - (vii) a turning point with a minimum radius of 10 metres is required for fire appliances at all water access points;
  - (viii) fire brigade appliances should be able to park within four (4) metres of the water supply outlet on a hard standing area;
  - (ix) bulk static water storages (22500 Litre) should be provided adjacent to main access tracks for fire fighting. Locations should be determined in consultation with CFA Fire safety officers and with operational staff;
  - (x) all tanks should be manufactured with at least one (preferably two) 64mm, 3 thread/25mm x 60 mm nominal bore British Standard Pipe (BSP) round male coupling 50 mm from their base. Outlets should be a minimum of two (2) metres apart;
  - (xi) water access points are to be marked by appropriate signage as per CFA's *Guidelines for Identification of Street Hydrants for Fire Fighting Purposes*;
  - (xii) grass should be no more than 100mm in height and leaf litter no more than 10mm deep for a distance of (30) thirty metres around constructed buildings and viewing platforms;
  - (xiii) a fuel reduced area of (4) four metres should be maintained around the perimeter of electricity compounds and sub station type facilities;
  - (xiv) there should be no long grass or deep leaf litter in areas where plant and heavy equipment will be working;
  - (xv) all plant and heavy equipment should carry at least one 9 Litre Water Stored pressure fire extinguisher with a minimum rating of 3A;
  - (xvi) internal fire protection systems, where appropriate, to assist with fire suppression;
  - (xvii) lighting protection devices, where appropriate, installed on each wind farm;
  - (xviii) dedicated monitoring systems within each wind turbine that detect temperature increases in turbines and shuts them down when the threshold temperature is reached;
  - (xix) construction of the wind farm outside the fire season where possible;
  - (xx) a program of training of volunteer and paid CFA personnel in fire suppression in and around the wind energy facility.
- g) A **pest animal management plan** to be prepared in consultation with the [Department of Sustainability and DELWP](#) Environment [Portfolio](#) and the Department of [Primary Industries Economic Development, Jobs, Transport and Resources](#), to the satisfaction of the Minister for Planning. This plan must include:
- (i) procedures for the control of pest animals, particularly by avoiding opportunities for the sheltering of pests; and

- (ii) follow-up pest animal control for all areas disturbed by the wind energy facility construction works for a period of two years following the completion of the wind energy facility.
  - h) A **pest plant management plan** to be prepared in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) and the Department of Primary Industries, to the satisfaction of the Minister for Planning. This plan must include:
    - (i) procedures to prevent the spread of weeds and pathogens from earth moving equipment and associated machinery including the cleaning of all plant and equipment before transport to the site and the use of road making material comprising clean fill that is free of weeds;
    - (ii) revegetation of disturbed areas; and
    - (iii) a protocol to ensure follow-up weed control is undertaken on all areas disturbed through construction of the wind energy facility for a minimum period of 2 years following completion of the works.
  - i) A **training program** for construction workers and permanent employees or contractors at the wind energy facility site including a site induction program relating to the range of issues addressed by the Environmental Management Plan.
  - j) A **program for reporting** including a register of environmental incidents, non-conformances, complaints, corrective actions and advice on to whom the reports should be made.
  - k) A **timetable for implementation** of all programs and works identified in a plan referred to in Conditions ~~13(a) to 13(j), 16.a) to 16.j)~~ above.
17. The environmental management plan must be reviewed and if necessary amended in consultation with the Moyne Shire Council to the satisfaction of the Minister for Planning every five (5) years to reflect operational experience and changes in environmental management standards and techniques and must be submitted to the Minister for Planning for re-endorsement.
18. The use and development must be carried out in accordance with the endorsed environmental management plan to the satisfaction of the Minister for Planning.

#### **BATS AND AVIFAUNA**

19. Before the development starts, a Bat and Avifauna Management Plan (**BAM Plan**) must be prepared in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) to the satisfaction of the Minister for Planning. When approved the plan will be endorsed and will then form part of the permit. The use must thereafter accord with the endorsed plan to the satisfaction of the Minister for Planning.
- The BAM Plan must include:
- a) a statement of the objectives and overall strategy for managing and mitigating any significant bird and bat strike arising from the wind energy facility operations;
  - b) a monitoring program of at least ~~5~~<sup>25</sup> years duration, either commencing upon the commissioning of the last turbine of the first stage of the approved development and use (if any) or alternatively such other time of commencement as is to the satisfaction of the Minister for Planning.

The monitoring program must include surveys during the breeding and migratory seasons to ascertain:

- the species, number, age and sex (if possible) and date of any bird or bat strike;
- the number and species of birds and bats struck at lit (if aviation obstacle lighting is installed) versus unlit turbines;
- any seasonal and yearly variation in the number of bird and bat strikes;
- whether further detailed investigations of any potential impacts on birds and bats are warranted.

Any such required further detailed investigations are to be undertaken in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) and to the satisfaction of the Minister for Planning;

- c) procedures for the reporting of any bird and bat species listed under the *Environment Protection and Biodiversity Conservation Act 1999* or the *Flora and Fauna Guarantee Act 1988* struck by or colliding with turbines to the [Department of Sustainability and DELWP Environment Portfolio](#) within 7 days of becoming aware of any strike identifying where possible whether the strike was by a lit or unlit turbine;
  - d) information on the efficacy of searches for carcasses of birds and bats, and, where practicable, information on the rate of removal of carcasses by scavengers, so that correction factors can be determined to enable calculations of the total number of mortalities;
  - e) procedures for the regular removal of carcasses likely to attract raptors to areas near turbines;
  - f) procedures for periodic reporting, within agreed timeframes, of the findings of the monitoring to the [Department of Sustainability and DELWP Environment Portfolio](#) and the local community;
  - g) recommendations in relation to a mortality rate for specified species which would trigger the requirement for responsive mitigation measures to be undertaken by the operator of the wind energy facility to the satisfaction of the Minister for Planning; ~~and~~
  - h) implementation measures developed in consultation with the [Department of Sustainability and DELWP Environment Portfolio](#) to offset any impacts detected during monitoring including turbine operation management and on-site or off-site habitat enhancement (including management or improvement of habitat or breeding sites); ~~);~~  
[and](#)
  - i) [a program for the provision of data on the presence of the Southern Bent-wing Bat to the satisfaction of the Minister for Planning.](#)
20. Following the completion of the monitoring program of at least ~~5~~<sup>25</sup> years duration as specified in Condition ~~46(b), 19.b)~~, a report must be prepared by the operator of the wind energy facility setting out the findings of the program to the satisfaction of the Minister for Planning. If, after consideration of this report, the Minister for Planning directs that further investigation of potential or actual impacts on birds and bats is to be undertaken, the extent and details of the further investigation must be to the satisfaction of the [Department of Sustainability and DELWP](#)

Environment [Portfolio](#) and the investigation must be carried out to the satisfaction of the Minister for Planning.

#### NOISE ASSESSMENT

21. If the turbine hub height is to be increased above 80 metres, new noise predictions for Mortlake South must be undertaken in accordance with relevant standard referenced in the '*Policy and planning guidelines for development of wind energy facilities in Victoria*', based on the type and hub height of turbines to be used. The results of such assessment should be submitted with an independent peer review (undertaken by a suitably qualified person not otherwise associated with the project) as to its adequacy and conclusions to the Minister for Planning for approval.

#### NOISE STANDARD

22. Except as provided below in this condition, the operation of the wind energy facility must comply with the noise criteria specified in the noise standard referenced in the '[Policy and planning guidelines for development of wind energy facilities in Victoria](#)' [NZS 6808:2010 Acoustics-Wind Farm Noise](#) at any dwelling existing on land in the vicinity of the proposed wind energy facility as at the date of the issue of this permit, to the satisfaction of the Minister for Planning.

In determining compliance the following requirements apply:

- a) the sound level from the wind energy facility within 20 metres of any dwelling must not exceed:

~~the level specified in the noise standard referenced in the '[Policy and planning guidelines for development of wind energy facilities in Victoria](#)' [NZS 6808:2010 Acoustics-Wind Farm Noise](#), or the background noise level by more than 5 dBA, whichever is the greater~~

~~• 40 dB  $L_{A90(10min)}$  for a dwelling not on the subject land, or where the background sound level is greater than 35 dB  $L_{A90(10 min)}$ , the noise limit will be the background sound level  $L_{A90(10 min)}$  plus 5 dB;~~

~~• 45 dB  $L_{A90}$  for a dwelling on the subject land;~~

- b) compliance must be assessed separately for all-time and night time. For the purpose of this requirement, night time is defined as 10.00pm to 7.00am; and
- c) ~~if the noise has a~~ special audible ~~characteristic and measured~~ characteristics, including tonality, impulsive sound or amplitude modulation occur, the noise level ~~must have~~ with the identified special audible characteristics will be modified by applying a penalty of ~~5dBA applied up to + 6dB  $L_{90L_{A90}}$~~  in accordance with section 5.4 of the [NZS 6808:2010 Acoustics-Wind Farm Noise](#).

Any dwelling on the subject land may be exempt from this condition. This exemption will be given effect through an agreement with the landowner that must apply to any occupant of the dwelling and must be registered on title. Such dwellings will be known as host dwellings.

#### NOISE COMPLIANCE

23. Before the development starts a noise compliance testing plan must be prepared by a suitably qualified acoustics expert to the satisfaction of the Minister for Planning.

When approved, the noise compliance testing plan will be endorsed by the Minister for Planning and will then form part of this permit.

The use must be carried out in accordance with the noise compliance testing plan to the satisfaction of the ~~responsible authority~~ [Minister for Planning](#).

The noise compliance testing plan must include:

- a) A determination of the noise limits to be applied during construction using the methodology prescribed in the [Interim Guidelines for the Control of Noise from Industry in Country Victoria, N3/89-Victorian Environment Protection Authority Publication No. 1254 - Noise Control Guidelines \(October 2008\)](#).
- b) A program of compliance testing to be implemented during the construction of the wind energy facility that: ~~is designed by a suitably qualified acoustic expert.~~
  - ~~(i) is designed by a suitably qualified acoustic expert, and~~
  - ~~(ii) utilises the methodology prescribed in State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No N-1, to demonstrate compliance with the limits determined in (a) above.~~
- c) A prediction, by a suitably qualified acoustic expert, of the area within which the noise level from the wind energy facility during full operation will be 35 dB (A) or greater.
- d) Identification of all dwellings, excluding host dwellings, within the area predicted in [paragraph c\), Condition 23.c\)](#) above and a statement as to whether consent from the owner of each of the identified dwellings for compliance testing has been obtained or refused.
- e) A method or methods of testing compliance with the noise limits prescribed in Condition ~~20~~ [23.22](#) of this permit for each dwellings identified in [Condition 23.d\)](#) above for which consent for the conduct of compliance testing has been obtained.

The compliance testing method must be either:

- (i) the method described in the standard referenced in the ['Policy and planning guidelines for development of wind energy facilities in Victoria' NZS 6808:2010 Acoustics-Wind Farm Noise](#);
  - (ii) a method, designed by a suitably qualified acoustics expert, in which measurements of operating and background noise levels are measured with:
    - background noise levels being measured with all turbines that, when operating, influence the noise level at the dwelling, shut down, and
    - the wind in the direction from the wind energy facility to the dwelling for at least 50 per cent of the measurement period.
- f) For each dwelling at which compliance testing is to be performed, determination of the maximum monthly proportions of the wind direction distribution that is from the wind energy facility to the dwelling, plus or minus 22.5 degrees.
  - g) A schedule for compliance testing under which compliance testing at all identified dwellings for which consent for such testing has been obtained is performed in the 14 months following the commissioning of the last turbine in a section of the wind energy facility or a stage of the wind energy facility, if the development is in stages, and repeated between 10 and 14 months after the first compliance test;

- h) ~~A~~ procedure for the assessment, by a suitably qualified acoustics expert, of the characteristics of the noise from the wind energy facility to determine if that noise has any special audible characteristics that require the ~~addition~~application of ~~5-dB(A)~~a penalty to the measured operating noise levels as shown in ~~Condition 19(e), 22.c)~~of this permit; and
  - i) a procedure under which all results of compliance testing conducted in any month are reported to the Moyne Shire Council and Minister for Planning every six months;
  - j) All noise compliance reports must be accompanied by a report from an environmental auditor accredited under the Environment Protection Act 1970 (Vic) with their opinion on the methodology and results contained in the noise compliance testing. If a suitable auditor cannot be engaged, the permit holder may seek written consent to obtain a peer review of the noise report instead.
24. Noise from ancillary infrastructure at the wind energy facility, including the substation, must comply with the recommended noise levels outlined in the Victorian Environment Protection Authority Publication No. 1411 Noise from industry in regional Victoria – Recommended maximum levels from commerce, industry and trade premises in regional Victoria (NIRV).

#### **~~NOISE COMPLIANCE ENFORCEMENT~~**

#### **~~COMPLAINT INVESTIGATION AND RESPONSE PLAN~~**

25. ~~Before the use begins the proponent must prepare a detailed noise complaint evaluation and response plan in consultation with the the Environment Protection Authority and the Moyne Shire Council. The plan must be submitted to, and approved by, the Minister for Planning. This plan must include the following elements:~~
25. Before the development starts, the permit holder must prepare a Complaint Investigation and Response Plan to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed by the Minister for Planning and will then form part of this permit. The Complaint Investigation and Response Plan will be designed to respond to all aspects of the wind farm including (but not limited to) operation noise, construction noise, construction impacts, traffic and shadow flicker. The endorsed Complaint Investigation and Response Plan must be made publicly available on the wind farm operator's website.
26. The Complaint Investigation and Response Plan must be prepared in accordance with Australian/New Zealand Standard AS/NZ10002:2014 – Guidelines for complaint management in organisations and shall include:
- a) a process of investigation to resolve a complaint;
  - b) a requirement that all complaints will be recorded in an incidents register;
  - c) a toll free ~~noise complaint~~ telephone ~~service~~ number and email contact for complaints and queries;
  - b) ~~the erection of a sign on site advising of the complaints telephone number;~~
  - d) details of the appropriate council contact telephone number and email address (where available)
  - e) ~~minimum recording requirements for noise complaints (that is: date, time, noise description and weather conditions at the receptor);~~
  - d) ~~a process for determination whether the noise complaint is a breach of Condition 19~~

- a) ~~a response protocol for confirmed breaches including, but not limited to:~~
    - ~~(i) determination of the meteorological circumstances at the time of the breach and the operational status of the turbine(s) at that time;~~
    - ~~(ii) noise optimisation of the relevant wind turbine(s) under the same meteorological circumstances as occurred at the time of the breach;~~
    - ~~(iii) in the event of a further breach the selective shut-down of the relevant wind turbine(s) or turbines in the same meteorological circumstances;~~
    - ~~(iv) where under the same meteorological conditions subsequent confirmed noise breaches occur, the decommissioning of the relevant turbine(s);~~
  - e) a table outlining complaint information for each complaint received, including:
    - (i) the complainant's name;
    - (ii) any applicable property reference number if connected to a noise background testing location;
    - (iii) the complainant's address;
    - (iv) a receipt number for each complaint which is to be communicated to the complainant;
    - (v) the time, prevailing conditions and description of the complainant's concerns including the potential incidence of special audible characteristics (for a noise complaint);
    - (vi) the process of investigation to resolve the complaint.
27. A report including a reference map of complaint locations, and outlining complaints, investigation and remediation actions is to be provided on an annual basis to the satisfaction of the Minister for Planning.
- ~~f) a register of complaints, responses and rectifications which may be inspected by the Minister for Planning and the Moyne Shire Council; and~~
28. The register and complaints response process shall continue for the duration of the operation of the wind energy facility and must be made available to the Minister for Planning on request.
- ~~g) provision for review of the complaint, any necessary improvement and an evaluation process 12 months after commencement of the operation of the wind energy facility.~~
29. The owner of the wind energy facility must implement and comply with the approved Complaint Investigation and Response Plan for the duration of the operation of the wind energy facility.

#### **CUMULATIVE NOISE IMPACT**

30. If a turbine or turbines of another wind energy facility are constructed within 3km of any turbine at the Mortlake Wind Energy Facility a cumulative noise management plan must be prepared and implemented to the satisfaction of the Minister for Planning. This plan shall include:
- a) identification of any dwellings likely to be affected by noise from both wind energy facilities;
  - b) an evaluation of the likelihood of the noise criteria in Condition [4922](#) being exceeded by either or both of the wind energy facilities;

- c) agreed protocols with the other wind energy facility operator for recording and responding to complaints from the identified dwellings ~~in 22(a) paragraph a)~~ above; and
- d) agreed response measures with the other wind energy facility operator including turbine shutdown or noise management pending resolution of the complaint.

#### **BLADE SHADOW FLICKER**

31. Shadow flicker from the wind energy facility must not exceed 30 hours per annum at any dwelling existing prior to the planning permit application date.

This condition does not apply to any dwelling on land on which part of the wind energy facility is erected. (This exemption will be given effect through an agreement with the landowner that will apply to any occupant of the dwelling).

32. Before the use starts, details of a complaint evaluation and response process must be submitted to and approved by the Minister for Planning to assess any alleged breach of Condition ~~23-31~~. Thereafter, the use must be carried out in accordance with the approved process and alleged breaches identified by this process must be addressed to the satisfaction of the ~~responsible authority~~ Minister for Planning.

#### **TELEVISION AND RADIO RECEPTION AND INTERFERENCE**

33. A pre-construction survey must be carried out to the satisfaction of the Minister for Planning to determine television and radio reception strength at selected locations within 5 km of any wind turbine including non-stakeholder dwellings. The location of such monitoring is to be determined to the satisfaction of the Minister for Planning by an independent television and radio monitoring specialist appointed by the operator under this permit.

Note: For the purpose of this condition, a non-stakeholder means the land holder of an abutting property without a contract in respect of the installation of associated wind turbines on that person's property.

34. If, following commencement of the operation of the wind energy facility, a complaint is received regarding the wind energy facility having an adverse effect on television or radio reception at the site of any dwelling in the area which existed at the date of the pre-construction survey, a post-construction survey must be carried out at the dwelling.
35. If the post-construction survey establishes any increase in interference to reception as a result of the wind energy facility operations, the wind energy facility operator must undertake measures to mitigate the interference and return the affected reception to pre-construction quality at the cost of the wind energy facility operator and to the satisfaction of the Minister for Planning.

#### **NATIVE VEGETATION REMOVAL**

36. This permit allows for the removal of up to 0.31 hectares of native vegetation.
37. To offset the removal of up to 0.31 hectares of native vegetation, the permit holder must secure a native vegetation offset in accordance with the Permitted clearing of native vegetation – Biodiversity assessment guidelines (DEPI 2013).
38. Before any native vegetation is removed, evidence that the required offset for the project or stage has been secured must be provided to the satisfaction of the Minister for Planning. The offset evidence can be:

- [a security agreement signed by both parties, to the required standard for the offset site or sites, including a 10 year offset management plan; and/or](#)
- [an allocated credit extract from the Native Vegetation Credit Register.](#)

39. [A copy of the offset evidence will be endorsed by the Minister for Planning and will form part of this permit. Within 30 days of endorsement of the offset evidence by the Minister for Planning, a copy of the endorsed offset evidence must be provided to the Department of Environment, Land, Water and Planning. At the conclusion of the project, offset requirements can be reconciled with agreement by the Minister for Planning.](#)

#### **SECURITY**

40. All site and wind turbine access points and electrical equipment must be locked when not in use and made inaccessible to the general public to the satisfaction of the Minister for Planning. Public safety warning signs must be located on all towers and all spare parts and other equipment and materials associated with the wind energy facility must be located in screened, locked storage areas that are inaccessible to the public to the satisfaction of the Minister for Planning.

#### **PRELIMINARY INVESTIGATIVE WORKS**

41. For the purposes of this permit, the carrying out of preliminary investigative works, including geotechnical investigations, for the purposes of gathering data or making other assessments necessary or desirable in order to prepare the development plan or other plans specified in this permit, is not considered to be commencement of the development.

#### **DECOMMISSIONING**

42. The wind energy facility operator must, no later than 2 months after any or all wind turbines have permanently ceased to generate electricity, notify the Minister for Planning in writing of the cessation of the use. Within a further 12 months of this date, the wind energy facility operator, or in the absence of the operator, the owner of the land on which the relevant turbine(s) is/are located, must undertake the following to the satisfaction of the Minister for Planning within such ~~timeframe~~[timeframe](#) as may be specified by the Minister:

- a) remove all above ground non-operational equipment;
- b) remove and clean up any residual spills or contamination;
- c) rehabilitate all storage, construction, access tracks and other areas affected by the project closure or decommissioning, if not otherwise useful to the on-going management of the land associated with the use, development and decommissioning of the wind energy facility;
- d) submit a decommissioning traffic management plan to the Minister for Planning and, when approved by the Minister for Planning, implement that plan; and
- e) submit a post-decommissioning revegetation management plan, including a timetable of works to the Minister for Planning and, when approved by the Minister for Planning, implement that plan.

#### **STAGING**

43. The use and development authorised by this permit may be completed in stages as shown on the endorsed development plan(s) to the satisfaction of the Minister for Planning, and any corresponding obligation arising under this permit (including compliance with plans or other

requirements including noise monitoring, but not including the preparation and approval of the development plan under Condition 1) may be similarly completed in stages or parts.

**EXPIRY**

44. This permit will expire if one of the following circumstances applies:

- (i) the development is not started within 3 years of the date of this permit;
- (ii) the development is not completed within 6 years of the date of this permit.

The Minister for Planning may extend the periods referred to if a request is made in writing before the permit expires, or within three months afterwards.

Date Issued: \_\_\_\_\_

Signature for the Minister