Planning and Environment Act 1987

Panel Report

Inverleigh Wind and Solar Farm

11 April 2019

VICTORIA State Government | Planning Panels Victoria

Planning and Environment Act 1987

Panel Report pursuant to section 97E(4) of the Act

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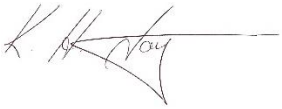
Sarah Carlisle, Chair

Ian Harris, Member



Ken Joyner, Member

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Glossary and abbreviations

Act	*Planning and Environment Act 1987*
ALA	Aircraft Landing Area
BAM Plan	Bat and Avifauna Management Plan
Brolga Guidelines	*Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population* (Department of Sustainability and Environment, 2011, Revision 2012)
CASA	Civil Aviation Safety Authority
CHMP	Cultural Heritage Management Plan
Community Engagement and Benefit Sharing Guide	*Community Engagement and Benefit Sharing in Renewable Energy Development: A Guide for Renewable Energy Developers* (DELWP, 2017)
Council	Surf Coast Shire Council
DELWP - Environment	Department of Environment, Land, Water and Planning – Environment Division
DELWP - Planning	Department of Environment, Land, Water and Planning – Planning Division
draft Solar Farm Guidelines	*Draft Solar Energy Facilities – Design and Development Guidelines* (DELWP, 2018)
EMI	electromagnetic interference
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPHC Guidelines	draft *National Wind farm Development Guidelines* (Environment Protection and Heritage Council, July 2010)
ERSA	En Route Supplement Australia, published by Airservices Australia
FFG Act	*Flora and Fauna Guarantee Act 1988*
IAP2	*Public Participation Spectrum*, Sydney, International Association for Public Participation (2014)
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
kV	kilovolt
LH circuit	left hand circuit
MW	megawatt

Native Vegetation Guidelines	*Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017)
New Zealand Standard	New Zealand Standard *NZS6808:2010 Acoustics – Wind farm noise*
NHMRC	National Health and Medical Research Council
NIRV	EPA Publication 1411 *Noise from Industry in Regional Victoria,* October 2011
Noise Assessment	Environmental Noise Assessment prepared by Resonate Acoustics dated 24 January 2018
OLS	Obstacle Limitation Surface
PPF	Planning Policy Framework
Proponent	Inverleigh Wind Farm Pty Ltd
RH circuit	right hand circuit
Rural Land Use Strategy	*Surf Coast Rural Land Use Strategy,* 1997
Rural Strategy	*Surf Coast Shire Rural Strategy*, September 2007
RWY06, RWY24	Runway 06 and Runway 24 at the Gnarwarre ALA
T#	turbine number #, as shown on the development plans accompanying the permit applications
VCAT	Victorian Civil and Administrative Tribunal
VFR	Visual Flight Rules
Wind Farm Guidelines	*Development of Wind Energy Facilities in Victoria: Policy and Planning Guidelines* (DELWP, October 2018)

Overview

Wind farm permit application summary	
Permit Application	Permit Application No. PA1800340
Brief description	Wind energy facility of 16 turbines with a maximum blade tip height of 200m and associated infrastructure Native vegetation removal Business signage
Subject land	270 Peels Road, Winchelsea 250 Mount Pollock Road, Buckley 480 Peels Road, Inverleigh 575 Gnarwarre Road, Inverleigh
The Proponent	Inverleigh Wind Farm Pty Ltd
Responsible Authority	Minister for Planning
Public notice	18 July – 20 August 2018
Submissions	Number of Submissions: 93 Opposed: 79

Solar farm permit application summary	
Permit Application	Permit Application No. 18/0356
Brief description	55,000 solar panels and associated cabling and infrastructure. The solar farm will share some wind farm infrastructure
Subject land	480 Peels Road, Inverleigh
The Proponent	Same as the Wind farm
Responsible Authority	Surf Coast Shire Council (called in by the Minister for Planning)
Public notice	August 2018
Submissions	Number of Submissions: 19 Opposed: 19

Panel process	
The Panel	Sarah Carlisle (Chair), Ian Harris and Ken Joyner
Directions Hearing	Surf Coast Shire Council, 29 November 2018
Panel Hearing	Surf Coast Shire Council, 4, 5, 6, 7, 18, 19, 20 and 21 February 2019
Site inspections	Unaccompanied, 30 January 2019 (itinerary at Document 14) Unaccompanied, 6 February 2019 (itinerary at Document 32)

Appearances	Refer to Appendix B
Citation	PCI PA1800340/18/0356 [2019] PPV
Date of this Report	11 April 2019

Executive summary

The project

The proposed Inverleigh Wind and Solar Farm (the project) is a co-located wind and solar farm consisting of 16 turbines with a maximum blade tip height of 200m and 55,000 solar panels. Together, the wind and solar farms could produce in the order of 80 to 87MW of electricity, saving an estimate of up to 220,000 tonnes of greenhouse gases per year.

The project requires a permit for the wind farm component, and a permit for the solar farm component. The Proponent lodged an application for the wind farm with the Minister for Planning on 16 February 2018, and an application for the solar farm with Surf Coast Shire Council on 13 August 2018. The Minister called in both permit applications on 8 October 2018 and referred the submissions to the Panel.

A permit was granted in 2008 for a smaller wind farm on the site known as the Winchelsea Wind Farm. That project did not involve a solar component. The Winchelsea Wind Farm permit was not acted on, and expired in 2014.

Submissions

Some submissions supported the project, noting the need for increased renewable energy generation, a reduction in carbon emissions and the need to combat climate change. Supporting submissions also highlighted that the project would provide for a diversified use of the land while allowing continued agricultural use. Other benefits of the project noted in supporting submissions included local jobs, reduced power prices and the Community Benefit Fund.

However, the vast majority of submissions opposed the project. Submitters were not opposed to renewable energy, but felt that the site is the wrong location for a wind and solar farm. Key issues raised in objecting submissions included:

- visual and landscape impact, particularly from the turbines, and from the infrastructure required to connect the project to the national electricity grid
- noise impacts of both the wind and solar farm components
- flora and fauna impacts, particularly on Brolga, raptor species and bats, both from the presence of the project infrastructure (including collision risk) and the removal of potential native vegetation or habitat
- aviation safety impacts, particularly on users of the Gnarwarre airfield
- impacts on agricultural production, including a loss of productive agricultural land on the site and adverse impacts on neighbouring agricultural land uses
- concerns that the project may impede the future growth of the nearby Winchelsea and Inverleigh townships
- concerns over the use of neighbouring properties as a 'buffer' (ie within 1 kilometre of a turbine) and impacts on the neighbours' ability to use or develop this land
- operational and management concerns including increased bushfire risk, responsibility for decommissioning and uncertain commitments to ongoing environmental management
- stormwater, flooding and drainage concerns

- impacts on local roads and traffic
- other amenity impacts, including shadow flicker, blade glint and vibration impacts from the wind farm, glint and glare from the solar farm, and electromagnetic interference with telecommunication and data services
- a lack of consultation and engagement with the community
- a lack of local benefits and negative impacts on local businesses
- health and wellbeing impacts (physiological and psychological)
- historic heritage and cultural heritage impacts.

Engagement with the community

The project has raised some significant concerns for the local community. These concerns have been exacerbated by the Proponent's poor approach to community consultation and engagement, which falls well short of industry standards and Government expectations. Poor engagement with surrounding communities generates risk not only for the project concerned and its social licence to operate, but for the renewable industry more broadly.

The Panel understands the community's concerns, and has carefully considered all the submissions it received, both in relation to the permit applications and at the Hearing. It has carefully considered the expert evidence provided, and the submissions of the Proponent and government agencies, in reaching its findings and conclusions.

Overall assessment

On balance, the Panel considers that permits should be granted for both the wind farm and the solar farm. Renewable energy projects have strong policy support, and the Panel is satisfied that using and developing the site for a wind and solar farm can, subject to appropriate conditions, harmoniously achieve agricultural production and renewable energy policy objectives. The project will not unacceptably impact on the agricultural operations in the surrouding area, or permanently remove high quality agricultural land.

The project is likely to have an overall positive effect on the environment. The project will make some contribution toward achieving the State's renewable energy targets, and reducing greenhouse gases. The precise amount of that contribution is unclear and will depend on the overall efficiency of the project, including the efficiency of the turbines that are ultimately selected. With the possible exception of Brolga, the project is unlikely to significantly impact listed and threatened flora and fauna species, native vegetation or local water or soil quality.

The Proponent's estimates of the indicative economic benefits of the project are likely to be overstated. That said, the Panel was not persuaded that the project will generate an economic disbenefit, or will harm the local or broader economy.

The social impacts of the project are concerning. The Panel is in no doubt that the project has caused significant levels of stress in the surrounding community, and entrenched community division. Some submitters told deeply personal stories about how the previous wind farm application had destroyed families and long-standing friendships, and impacted on mental health. Others described very traumatic events in their lives, and the solace that they gained from their properties. For these submitters, their homes are a critical part of their sense of family and security. They are genuinely concerned that the wind farm will

undermine, or even destroy, the solace and security they gain from their homes and properties.

Contrary to the Proponent's submissions, the Panel considers that these are effects of the project, not the application process. The Proponent's inadequate consultation and engagement has contributed to these effects. Unless the Proponent (or the ultimate operator of the project) radically alters its approach to community consultation, engagement and benefit sharing, these impacts are likely to continue into the future, to the detriment of the surrounding community.

The social impacts of the project must be balanced against the other impacts and benefits of the project. When weighed as part of an objective and balanced assessment, the Panel considers that the social impacts of the project are not so severe as to justify refusing the permits.

That said, the Panel urges the Proponent in the strongest terms to rethink the approach taken to date on consultation and engagement and benefit sharing. The Proponent must engage more constructively and respectfully with the surrounding community going forward. It must consider a more suitable and comprehensive community benefit sharing program, including neighbourhood benefit payments and compensation packages for the most affected non-stakeholder landowners. The community will also need to approach its ongoing relationship with the Proponent (or the ultimate operator of the project) with an open mind.

The Panel also considers that the permit should expire if construction has not commenced within three years, and been completed within six years, to reduce the extent of the period of impact on the community.

The Panel's key findings in relation to other impacts of the project are summarised below.

Landscape and visual impacts

The Panel has some significant concerns with particular aspects of the methodology and findings of the Landscape and Visual Impact Assessment, and considers that the Assessment has likely underestimated the visual impacts of the project, particularly on private dwellings. In particular:

- The Assessment should have included consultation and engagement with the community in relation to the local landscape, what it means to them, what the perceived impacts of the project may be on the local landscape values, and how they might be mitigated through project design.
- The value of Mount Pollock as an element in the landscape, especially when viewed from the east, may be somewhat higher than 'moderate'. The value of the Barrabool Hills is higher than 'moderate'.
- Landscape value has not been appropriately factored into the assessment of visual impact.
- Impacts on private dwellings should have been assessed directly, rather than extrapolating from photomontages at nearby roadsides or driveways. The assessment of visual impacts on non-stakeholder dwellings should have extended further than 3kms from a turbine.

The Panel does not accept that off-site landscape mitigation is not warranted, or that it should be limited to within 2kms of a turbine. Off-site landscape mitigation should be offered to non-stakeholder dwellings within 5kms of the nearest turbine.

The transmission infrastructure required to connect the project to the national grid could potentially have significant visual impacts. However transmission lines will require a separate permit now that Amendment VC157 has come into effect. While other aspects of the project, including the substation and the solar panels, will have visual impacts, the Panel is satisfied that these can be acceptably managed with on-site landscape screening.

Noise impacts

The Panel is satisfied that the noise modelling undertaken to date demonstrates that the project can meet the noise limits set out in the New Zealand Standard, although some further assessment will be required prior to works commencing. If non-compliances are detected once the project is operating, adjustments can be made to the operation of the turbines to ensure that the project is brought into compliance. The Panel is satisfied that permit conditions can provide a robust framework to manage noise impacts, and the community will not be left with a legacy of noise non-compliance.

Aviation impacts

The project will impact on the use of the private landing strip at the Gnarwarre airfield. However, the Panel does not consider that these impacts are unreasonable. The Panel is satisfied that, with some adjustments to operating procedures at the airfield, it can continue to be used for its current purposes, provided Turbine 10 is removed and the proposed anemometer mast is relocated. Conditions should be included on the wind farm permit requiring the wind farm developer to agree appropriate notification and operational protocols with local aerial agricultural operators before development starts.

Biodiversity impacts

Potential impacts on Brolga have not been properly assessed. However on the material before the Panel, there is no basis for refusing either the wind farm or solar farm permit arising from possible impacts on Brolga. Due to the deficiencies of the Brolga assessments undertaken to date, future monitoring of possible Brolga mortality and implementation of subsequent mitigation and offsetting measures (if required) must be a priority.

The project is likely to have impacts on some raptor species, including the Wedge-tailed eagle. It may also have impacts on bats. Mortality monitoring and mitigation measures should be required to minimise impacts on these species.

The Panel is satisfied that the project footprint has been designed to avoid patches of remnant native vegetation or scattered trees. It is unlikely to adversely impact on any flora species or communities listed under the EPBC Act or FFG Act, or habitat for listed fauna species. If native vegetation needs to be removed in association with road upgrades, further permits will need to be obtained.

Health impacts

The Panel has no reason to doubt the genuine concern that submitters have expressed about the possible health effects of wind farms. There is a considerable amount of

anecdotal information about these possible effects, and it is not surprising that the community is concerned about them. However, decisions about whether to grant a permit for a wind farm should be based on the best available, scientifically reliable information and research. According to the best available research, there is no consistent evidence that wind farms cause adverse health effects. The National Health and Medical Research Council has concluded that there are no significant effects on physical or mental health at distances greater than 1,500m from wind farms. While more research may be warranted within 1,500m of a wind farm, the research to date does not demonstrate that health effects within 1,500m are likely.

Traffic impacts

While the project will impact on local traffic, particularly during construction and decommissioning, those impacts can be appropriately managed through permit conditions. The Panel supports the proposed conditions put forward by DELWP and Council to manage traffic impacts, but considers that permit conditions should also require the Proponent to repair any damage done to Mount Pollock Road.

Other amenity impacts

Based on the shadow flicker assessment provided with the application, no non-stakeholder dwellings will be exposed to shadow flicker. Blade glint should not be an issue provided the blades are coated with a non-reflective finish. Conditions should be included on the solar farm permit requiring a glare, glint and light spill management plan, and requiring the solar panels and supporting structures to be constructed of non-reflective materials. The proposed conditions requiring an Environment Management Plan will otherwise appropriately deal with amenity impacts of the project.

Drainage impacts

The Panel acknowledges the concerns of DELWP and some submitters that the project, particualrly the solar panels, could impact local drainage patterns. However the solar panels do not represent 26.6ha of impervious surface. The Panel is not persuaded that it is likely to have off-site impacts in relation to stormwater runoff or drainage, and does not consider that a hydrology report is necessary. The Panel notes that any changes to the rate of flow or discharge point of water across the property boundary, or changes in the discharge of saline groundwater, will trigger a permit under the Farming Zone. This will allow for any possible impacts to be properly assessed.

Cultural heritage impacts

Since the Hearing concluded, the Minister for Aboriginal Affairs has directed the Proponent to prepare a Cultural Heritage Management Plan for the project. Permits cannot be issued, and the project cannot proceed, unless a Cultural Heritage Management Plan is approved. The Panel is satisfied that this process will allow for any impacts on Aboriginal cultural heritage to be properly identified and considered. The project is unlikely to impact on any site of historic (non-Aboriginal) cultural heritage significance.

Operational and decommissioning impacts

The Panel does not consider that the construction of the wind or solar farm would lead to increased risk of fire on the site. The measures proposed for turbine shut down outlined in the draft Fire and Emergency Response Plan prepared for the wind farm should address any fire risk that may arise from turbine malfunction. The Panel accepts that there is a possibility that turbines could constrain aerial fire suppression on the site, however no evidence or information was presented to the Panel about the extent to which aerial firefighting facilities are used in the area, or may be used in the area in future. The Country Fire Authority did not object to the project or raise any concerns in relation to its impacts on aerial firefighting operations.

Based on the limited information available to the Panel, blasting may be required on the site to consruct turbine foundations. The wind farm permit should include conditions requiring blasting impacts to be appropriately managed through a Blasting Management Plan.

Decommissioning can be dealt with through appropriately drafted permit conditions, to ensure that the land can be transitioned back to agricultural use once the project is complete.

Scope of permission

The Panel finds that the applications did not include battery storage or a temporary quarry. Although the applications did, on balance, include a temporary concrete batching plant, insufficient information was provided in relation to the nature and operation of the temporary concrete batching plant for the Panel to support this. If the Proponent wishes to pursue any of these elements, separate permission will need to be obtained. References in the development plans to battery storage and a temporary concrete batching plant must be deleted.

If option 2 for connecting the project to the national grid is pursued, off-site transmission lines will be required. These will also require a separate permit, now that Amendment VC157 has come into effect.

Consolidated recommendations

Based on the reasons set out in this Report, the Panel makes the following primary recommendations:

1. **Issue planning permit PA1800340 for a wind energy facility of no more than 15 turbines and associated infrastructure, native vegetation removal and business signage, subject to the conditions contained in Appendix D.**
2. **Issue planning permit 18/0356 for a renewable energy facility (solar farm) and associated cabling and infrastructure, subject to the conditions contained in Appendix E.**

The Panel makes the following recommendations in relation to the conditions on the wind farm permit:

3. **Include a condition requiring references to battery storage and a temporary concrete batching plant to be removed from the development plans.**

4. **Include conditions requiring:**
   a) **a plan accurately identifying all non-stakeholder dwellings within 5kms of a turbine, to the satisfaction of Surf Coast Shire Council**
   b) **off-site landscape mitigation to be offered to affected non-stakeholder dwellings within 5kms of the nearest turbine, to the satisfaction of the Responsible Authority**
   c) **landscape screening of the substation and other buildings to the satisfaction of the Responsible Authority.**

5. **Include conditions requiring pre-construction noise monitoring to be conducted at the locations described as House A, House B and House C in the Environmental Noise Assessment prepared by Resonate Acoustics dated 24 January 2018 as a minimum, subject to approval from the property owners. Background noise monitoring must meet the following requirements:**
   a) **at least 4,032 valid data points must be collected for each background noise monitoring site**
   b) **background noise levels must be separately determined for both all-time periods and for the night time period (10 pm to 7 am).**

6. **Include conditions requiring:**
   a) **Turbine 10 to be deleted from the development plans**
   b) **the position of the anemometer mast must be reviewed by a suitably qualified person to ensure use of the Gnarwarre Aircraft Landing Area will be able to continue safely without significant impact from the anemometer mast, to the satisfaction of the Responsible Authority**
   c) **prior to construction commencing, the wind farm operator must develop an agreed set of protocols with local aerial agricultural operators for all relevant notification and operational issues, to minimise the impacts of the turbines on local aerial agricultural operations, to the satisfaction of the Responsible Authority.**

7. **Include conditions requiring monitoring and reporting of Brolga mortality, and implementation of mitigation and offsetting measures, that are generally consistent with those proposed by the Department of Environment, Land, Water and Planning.**

8. **Include conditions requiring a Bat and Avifauna Management Plan that are generally consistent with those proposed by the Department of Environment, Land, Water and Planning, but modified to address the following:**
   a) **a desktop survey of possible Southern Bent-Wing Bat roost sites within 20kms of the site prior to construction commencing**
   b) **bat mortality monitoring once the project becomes operational**
   c) **monitoring of mortality of Wedge-tailed eagles, and the implementation of mitigation measures where practicable.**

9. **Include conditions requiring a Construction Environment Management Plan and other measures to address the avoidance of native vegetation that could provide suitable habitat for listed or threatened species.**

10. **Include a condition requiring a comprehensive assessment of potential electromagnetic interference by an independent, suitably qualified person prior to construction commencing. The assessment must include a baseline survey of all relevant services, including mobile phone services and GPS guidance systems used for precision agronomy.**
11. **Extend the conditions proposed by Surf Coast Shire Council and the Department of Environment, Land, Water and Planning requiring surveys of, and repair of any damage to, Inverleigh-Winchelsea Road, Peels Road and Gnarwarre Road to include Mount Pollock Road.**
12. **Include a condition requiring a single Fire and Emergency Response Plan to be prepared and approved for both the wind farm and the solar farm.**
13. **Include a condition requiring a single Environment Management Plan to be prepared and approved for both the wind farm and the solar farm, generally consistent with the conditions proposed by the Department of Environment, Land, Water and Planning.**
14. **Include a condition requiring a blasting management plan to be approved and implemented to the satisfaction of the Responsible Authority (if required).**
15. **Include a condition that the permit expires if construction is not commenced within three years, and completed within six years.**

The Panel makes the following recommendations in relation to the conditions on the solar farm permit:

16. **Include a condition requiring references to battery storage and a temporary concrete batching plant to be removed from the development plans.**
17. **Include a condition requiring landscape screening of the solar panels and other structures to the satisfaction of the Responsible Authority.**
18. **Include a condition requiring:**
    a) **a Construction Environment Management Plan and other measures to address the avoidance of native vegetation that could provide suitable habitat for listed or threatened species**
    b) **a Wildlife Management Plan to outline how the operator would mitigate, if necessary, the impact of white cockatoos on the solar panels or any other infrastructure by use of non-lethal control methods.**
19. **Include conditions requiring:**
    a) **a Glint, Glare and Light Spill Management Plan to be prepared and implemented to the satisfaction of the Responsible Authority**
    b) **the solar panels and supporting structures to be constructed of non-reflective materials.**
20. **Include a condition requiring a single Environment Management Plan to be prepared and approved for both the wind farm and the solar farm, generally consistent with the conditions proposed by the Department of Environment, Land, Water and Planning.**

21. **Include a condition requiring a single Fire and Emergency Response Plan to be prepared and approved for both the wind farm and the solar farm.**

22. **Include a condition that the permit expires if construction is not commenced within three years, and completed within six years.**

1 Introduction

1.1 The Project

(i) Project description

The project is a co-located wind and solar farm consisting of 16 turbines and 55,000 solar panels. The Proponent is Inverleigh Wind Farm Pty Ltd (the Proponent).

The project includes:

- 16 wind turbines with a maximum blade tip height of 200m, a clearance height of 42m and a rotor diameter of 158m
- 55,000 low reflective photovoltaic solar panels in 8 blocks. The panels are constructed on a fixed support structure and tilt throughout the day to track with the sun. At their maximum height, they reach just over 2m
- associated infrastructure including a substation, operations and maintenance building, cabling, water tanks and a laydown area
- new and upgraded access tracks.

Together, the wind and solar farms would produce in the order of 80 to 87MW of electricity, saving an estimate of up to 220,000 tonnes of greenhouse gases per year.

The project has an estimated 12 month construction period, and 20 year operating life.

The Proponent lodged two separate permit applications for the project:

- Permit Application PA1800340 was lodged with the Minister for Planning (who is Responsible Authority for the wind farm component) on 16 February 2018
- Permit Application 18/0356 was lodged with Surf Coast Shire Council (who is Responsible Authority for the solar farm component) on 13 August 2018.

The wind farm permit application also seeks permission for native vegetation removal and business signage.

The Proponent has indicated it intends to provide a community benefit fund of $40,000-$50,000 per year donated to local environmentally, economically or socially sustainable initiatives.

The Minister for Planning called in both permit applications on 8 October 2018 and referred the submissions received in respect of both applications to the Panel under sections 97E(1)(a) and (b) of the *Planning and Environment Act 1987* (the Act).

(ii) The site

The site consists of four parcels of land located in the Surf Coast Shire, approximately 5.5kms south of Inverleigh and 5.4kms north east of Winchelsea[1]. The four parcels are:

[1] According to Damian Iles' evidence, these are the distances between the site boundary at its closest point, and land in the Township Zone (in Inverleigh) and the Low Density Residential Zone (in Winchelsea).

- 270 Peels Road, Winchelsea
- 250 Mount Pollock Road, Buckley
- 480 Peels Road, Inverleigh
- 575 Gnarwarre Road, Inverleigh.

The solar farm component will only be located on 480 Peels Road. No project infrastructure is proposed to be located on 250 Mount Pollock Road.

Figure 1 The site

Source: Damian Iles Expert Witness Statement, Document 16

The topography rises towards the east, while the land to the north, west and south is largely flatter terrain typical of the Victorian Volcanic Plains.

The site is in the Farming Zone, and is used for cropping and grazing. It contains one dwelling near the south-western boundary. The Mount Pollock Historic Site 1 is in the north-eastern corner of the site, and contains a bluestone wall remaining from what may have been a small farmhouse, stopover for stockmen or a school. It is listed on the Victorian Heritage Inventory (ref. H7721- 0428), but is not subject to a Heritage Overlay or included on the Victorian Heritage Register.

A 220kV transmission line runs through the site from the southern boundary to the north-eastern boundary.

Parts of the south-east corner of the site are affected by a Land Subject to Inundation Overlay, although no works are proposed in this area and no permit is required under the Overlay.

The surrounding area is mostly in the Farming Zone, with some areas of Township Zone, Low Density Residential Zone and General Residential Zone in and around Inverleigh and Winchelsea. Surrounding properties are a mix of broadacre farming and smaller lifestyle properties. The RAMSAR-listed Lake Murdeduke Wildlife Reserve is located about 12kms to the west of the site, while the Lake Dubban Wildlife Reserve, Lake Modewarre and Lake Gherang are all within 4-8kms to the south.

There are 4 non-stakeholder dwellings within 1-2kms of a proposed wind turbine and 7 non-stakeholder dwellings within 2-3kms of a proposed wind turbine, as shown in Figure 2. The closest non-stakeholder dwelling is House A at 85 Mount Pollock Road, which is located roughly 1.2kms from Turbine 15.

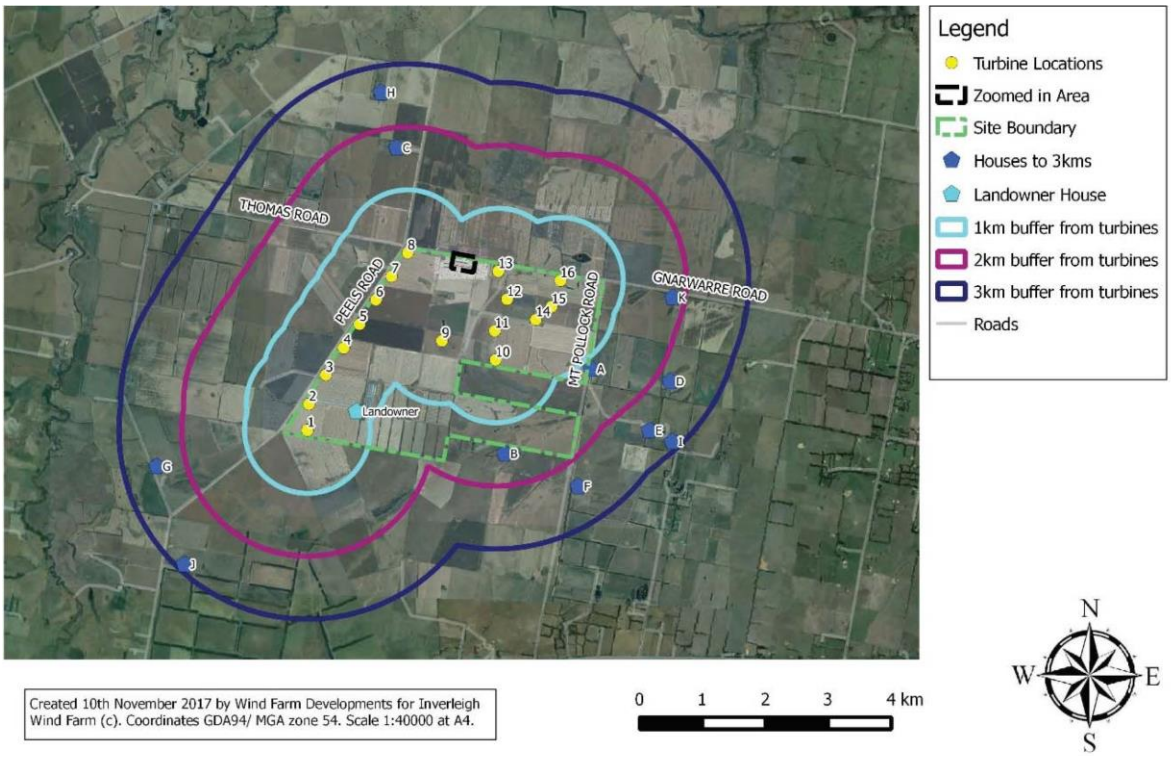

Figure 2 Dwellings within 3kms of turbines

Source: Inverleigh Wind Farm Planning Permit Application, Hansen Partnership, Feb 2018 revised May 2018

1.2 Background

(i) Previous permit

Winchelsea Wind Farm was approved on the site in 2009 (Permit 08/0039), following an objector appeal to the Victorian Civil and Administrative Tribunal (VCAT)[2]. That proposal

[2] *Russell v Surf Coast Shire Council* [2009] VCAT 1324

consisted of 14 turbines with a blade tip height of approximately 130m. It did not have a solar component. Permit 08/0039 expired in 2014.

(ii) Other wind farms in the vicinity

Several approved wind farms are located within 50kms of the site, as shown in Table 1.

Table 1 Wind farms near the site

Wind farm	Location	Turbines	Status
Mount Gellibrand	20km to the south-west	44 turbines	Built and operational
Golden Plains	25km to the north-west	228 turbines	Approved, not constructed
Mount Mercer	40km to the north-west	64 turbines	Built and operational
Berrybank	50km to the north-west	79 turbines	Approved, not constructed
Lal	50km to the north-west	60 turbines	Under construction
Yaloak South	50km to the north-east	14 turbines	Built and operational
Moorabool	50km to the north-east	107 turbines	Under construction

1.3 Summary of issues raised in submissions

The Part A submission from the Department of Environment, Land, Water and Planning (DELWP) provided the following summary of the issues raised in opposing submissions:

- Noise impacts
  - Excessive noise emissions from the turbines.
  - Unwarranted noise emissions from the solar panels and their associated infrastructure.
  - Inadequate and inaccurate assessment of potential noise levels and impacts.
  - Lack of consideration of infra-sound and associated impacts.
- Visual and landscape impact
  - Excessive visual prominence of turbines from private and public viewpoints.
  - Landscape character impacts, including on the regionally significant Barrabool Hills.
  - Photomontages are unrepresentative (taken from inappropriate locations) and inaccurate.
  - Inability of off-site landscaping to mitigate visual impacts.
- Flora and fauna impacts
  - Impacts on aerial fauna, particularly Brolga, raptor species and bats.
  - Lack of Level 2 Brolga Assessment.
  - Impacts on wetland habitat on the site and wetland fauna species in the surrounds.
  - Native vegetation impacts.
- Aviation impacts
  - Aviation safety impacts.

  - Impact on the ability of the Gnarwarre Aircraft Landing Area (ALA) to continue operating.
  - Interference with air ambulance, aerial firefighting services and aerial agricultural activities.
- Traffic impacts
  - Disruptions and safety concerns from construction traffic.
  - Impacts on condition of roads from heavy vehicles.
  - Local roads are unsuitable for over-dimensional and heavy vehicles.
- Operational and management concerns
  - Increased bushfire risk.
  - The eventual decommissioning of the project is unclear (ie whose responsibility).
  - Uncertain commitments to ongoing environmental management.
- Community, social and economic impacts
  - Lack of consultation and engagement and high levels of community opposition.
  - Use of neighbouring properties as a 'buffer' and impact on ability to use or develop this land.
  - Proposal sited too close to townships, growing populations and subdividable land.
  - Lack of local benefits and negative impacts on local businesses.
- Amenity impacts
  - Shadow flicker, blade glint and vibration impacts from the wind farm.
  - Glint and glare from the solar farm
  - Electromagnetic interference impacts (television, radio, mobile phone and data signals).
- Health and wellbeing impacts (physiological and psychological)
- Historic heritage and cultural heritage impacts
- Other/general:
  - Proposal is an inappropriate use of the land and is inconsistent with relevant planning policies.
  - Location, scale and nature of associated transmission infrastructure is unclear.
  - The application plans and documents are inaccurate and generally of poor quality.
  - There are better alternative locations for the proposal.
  - The turbines are excessive in size.
  - The Proponent will not develop the proposal but will on-sell to another person.
  - The proposed setbacks from dwellings are deficient and should be increased.
  - Creation of micro-climate and impacts on neighbouring land activities such as cropping.
  - Loss of productive agricultural land.
  - Lack of information on suggested battery storage.
  - Stormwater, flooding and drainage concerns.
  - Impacts on property values.

DELWP Planning summarised the issues in the neutral or supporting submissions for the wind farm application as follows:

- Support the principle of renewable energy generation.

- The proposal will assist in reducing carbon emissions and combatting climate change.
- The proposal will provide for a diversified use of the land but for continued agricultural use.
- Local benefits, including jobs and the community fund to be established.
- Reduction in power prices.

1.4 Without prejudice drafting discussion

On the final day of the Hearing, the Panel held a without prejudice discussion on the drafting of permit conditions (in other words, not pre-supposing that permits would be granted). Several parties provided suggested drafting, including DELWP (Documents 85 and 86), Council (Documents 76 and 77), the Proponent (Documents 53 and 54), the Gnarwarre Community Association (Documents 83 and 109) and several individual submitters (Documents 60, 80, 81, 82, 83A, 83B, 83C and 84).

1.5 The Panel's approach

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

This Report deals with the issues under the following headings:

- Planning context
- Threshold strategic and policy issues
- Visual and landscape impacts
- Noise impacts
- Aviation safety
- Biodiversity impacts
- Social impacts
- Amenity impacts
- Other issues.

In Chapter 11, the Panel provides an integrated assessment of the permit applications, balancing the benefits and impacts of the project with the principles of net community benefit and sustainable development.

2 Planning context

2.1 Planning policy framework

Victorian planning objectives

Section 4 of the Act contains the objectives of planning in Victoria that guide all planning decisions, including decisions on whether to issue a planning permit. They include:

- providing for the fair, orderly, economic and sustainable use, and development of land
- providing for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity
- securing a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria
- conserving and enhancing areas or places of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value
- balancing the present and future interests of all Victorians
- ensuring the effects on the environment are considered, with explicit consideration of social and economic effects when decisions are made about the use and development of land.

Clause 12 (Environmental and landscape values)

Clause 12 seeks to protect the health of ecological systems and the biodiversity they support, and conserve areas with identified environmental and landscape values. Planning:

- must implement environmental principles for ecologically sustainable development that have been established by international and national agreements, including the National Greenhouse Strategy
- should protect, restore and enhance sites and features of nature conservation, biodiversity, geological or landscape value.

Clause 12.01 seeks to assist in the protection and conservation of Victoria's biodiversity. It seeks to ensure that decision making considers the impacts of land use and development on Victoria's biodiversity, including consideration of cumulative impacts and the fragmentation of habitat.

Clause 13 (Environmental risks and amenity)

Clause 13 provides that planning should (among other things):

- aim to avoid or minimise natural and human-made environmental hazards, environmental degradation and amenity conflicts
- identify and manage the potential for the environment and environmental changes to impact on the economic, environmental or social wellbeing of society
- prepare for and respond to the impacts of climate change.

Clause 13.01 (Climate change impacts) seeks to minimise the impacts of natural hazards and adapt to the impacts of climate change through risk-based planning.

Clause 13.05-1S (Noise) seeks to assist the control of noise effects on sensitive land uses.

Clause 14 (Natural resource management)

Clause 14 seeks to assist in the conservation and wise use of natural resources to support environmental quality and sustainable development. Planning should ensure agricultural land is managed sustainably, while acknowledging the economic importance of agricultural production. Clause 14.01-1S seeks to protect the state's agricultural base by preserving productive farmland. Clause 14.01-2R seeks to support new opportunities in farming and fisheries in the G21 region (of which the Surf Coast Shire forms part).

Clause 15.02-1S (Energy and resource efficiency)

Clause 15.02-1S seeks to encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.

Clause 18.04 (Airports)

Clause 18.04 seeks to strengthen the role of Victoria's airports and airfields within the state's economic and transport infrastructure, and protect their ongoing operation.

Clause 19 (Infrastructure)

Clause 19 states that planning should minimise the impact of use and development on the operation of major infrastructure, including communication networks and energy generation and distribution systems.

Clause 19.01-1S (Energy supply) seeks to facilitate appropriate development of energy supply infrastructure. Strategies include:

- support the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to industry and the community
- support transition to a low-carbon economy with renewable energy and greenhouse emission reductions including geothermal, clean coal processing and carbon capture and storage
- facilitate local energy generation to help diversify the local economy and improve sustainability outcomes.

Clause 19.01-2S (Renewable energy) seeks to promote renewable energy in a manner that ensures appropriate siting and design considerations are met. Strategies include:

- facilitate renewable energy development in appropriate locations
- develop appropriate infrastructure to meet community demand for energy services
- consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment
- recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year.

Clause 21 (the Municipal Strategic Statement)

Clause 21 contains Council's Municipal Strategic Statement, which sets out key strategic directions for settlement, built environment and heritage, environmental management, tourism, agriculture, landscape and rural residential living.

Clause 21.03 (Environmental management) outlines environmental issues facing the municipality.

Clause 21.05 (Agriculture) notes the growing economic value of agriculture, and that inappropriate small lot excisions and construction of dwellings unrelated to farming are key issues. It also notes that increased pressure exists for tourism and other development in rural areas, which adversely impacts on environmental, landscape, social and agricultural values.

Clause 21.06 (Rural landscape) shows the municipality divided into five landscape units. The site is within the Winchelsea Plains unit. The Barrabool Hills precinct is directly to the east.

Clause 21.07 (Rural residential living) states that Torquay/Jan Juc, Winchelsea and Moriac are three areas identified as having potential for future residential development and rural living development.

Clause 21.09 (Winchelsea Strategy) notes that the *Great Ocean Road Region Strategy* (DSE, 2004) directs urban growth to Winchelsea as one of the region's townships capable of accommodating growth. The clause lists several issues facing the township, with objectives and strategies listed under the themes of settlement, built environment and heritage, environment, economic activity and infrastructure. A Framework Map shows potential future low density growth areas located to the east, south, and southwest of the township.

Clause 22 (local planning policies)

Of Council's local policies, Clause 22.01 (Rural tenement policy) and Clause 22.04 (Scenic landscapes and environmental assets) are particularly relevant.

The rural tenement policy applies to all land in the Farming Zone and Rural Conservation Zone. It aims to help ensure the long term protection of the Shire's rural land for agricultural purposes. Tenement provisions have limited the number of houses built in the rural areas and encouraged rural landholdings to be retained.

The rural tenement policy has been implemented through (among other things) minimum lot sizes in the Farming Zone. The site is within the Winchelsea Plains area where the minimum land size is 80ha. Directly south of the site, in the Thompsons Creek Catchment area, the minimum lot size is 60ha. The Barrabool Hills area, to the east of the site, has a minimum land size of 40ha.

The scenic landscapes and environmental assets policy notes that the south-west coast and the Great Ocean Road Region are characterised by locally, nationally and internationally significant landscapes. The policy seeks to preserve these landscapes, and to protect the diverse and unique remnant vegetation communities present within the landscapes.

2.2 Other relevant planning policies and strategies

Victoria's Regional Statement

Victoria's Regional Statement – *Your Voice, Your Region, Your State* acknowledges the contribution regional Victoria makes to Victoria's economic strength and way of life. It acknowledges the significant job opportunities to emerge in the new energy industries that will drive the transition of Victoria to a low-carbon economy.

G21 Regional Growth Plan

The *G21 Regional Growth Plan (April 2013)* applies to the municipal areas of Colac Otway, Golden Plains, Greater Geelong, Queenscliffe and Surf Coast. Principles and directions under the G21 Regional Growth Plan include:

- maintain productive agricultural areas
- maintain and enhance natural assets
- provide land and infrastructure for existing and future employment nodes across the region to enable people to work within close proximity to home, promote economic growth and support the development of agriculture and tourism.

The G21 Plan identifies agricultural land uses as a key regional asset, and highlights the importance of protecting the essential character of the region's natural, landscape and heritage setting with the right balance between economic, environmental and social considerations.

The G21 Plan states as follows in relation to energy infrastructure (at page 22):

> Energy infrastructure – Our existing energy infrastructure with ongoing upgrades and maintenance will not be a barrier to growth of the region to 500,000 people (by 2050). Renewable resource mapping and investigations suggest that the region's strength is in geothermal power.

Rural Strategies

The *Surf Coast Rural Land Use Strategy* 1997 (the Rural Land Use Strategy) sets out a long term vision for the Shire's rural areas focused on providing for agricultural use of the land and preservation of significant rural landscape values. Key strategic directions include:

- Support agricultural activities and associated rural industries that will maintain and build on the economic base of the Shire.
- Do not prejudice the ability of future generations to productively farm the land.
- Strongly discourage fragmentation and non-productive uses of agricultural land and additional dwellings unrelated to the agricultural use of the land.
- Refuse inappropriate subdivisions or land uses that take rural land out of agricultural production.

There have been significant changes in rural land use since the Rural Land Use Strategy was prepared in 1997. In 2007, Council conducted a review of the Rural Land Use Strategy, which resulted in the *Surf Coast Shire Rural Strategy*, September 2007 (the Rural Strategy). The updated Rural Strategy identifies a shift toward more intensive farming, farming for lifestyle and demand for additional uses other than agriculture, including tourism. Key findings of the updated Rural Strategy include:

- Agriculture continues to grow as an economic sector in the Shire, with a continuing shift from traditional broadacre farming to more intensive agricultural land uses such as piggeries being the most economically significant. Farming and agriculture are particularly important and valued in the northern part of the Shire.
- Planning controls are necessary to support the ongoing use of land for agriculture, including larger minimum lot sizes in the Farming Zone and the Shire's tenement controls.

- While lifestyle farming is an acknowledged land use in the Shire's agricultural areas, there is no need to facilitate the supply of additional rural residential land. Agricultural land is a finite resource, and rural living is more appropriately addressed in township structure plans.
- Although tourism has traditionally focused on the coast, opportunities exist for tourism development, particularly in the farmed rural hinterland. However, these opportunities should not come at the expense of environmental, landscape, social and agricultural values.

Draft Surf Coast Hinterland Strategy

In 2018, Council invited submissions on Council's draft *Surf Coast Hinterland Strategy* (May 2018), which provides a vision, five key objectives and 38 priority actions to provide clear strategic directions for the Shire's rural areas. The Strategy aims to support existing agricultural uses, and to develop agri-food, agri-tourism and tourism opportunities in the hinterland that are in line with its rural landscape and environmental values.

The Hinterland Strategy shows the site located within an area designated for intensive commercial farming focus and notes a higher soil quality in the general location of the site.

Council explained at the Hearing that the draft Hinterland Strategy is yet to be revised to reflect the outcomes of the consultation exercise, and at this point has no formal status in the policy framework.

Surf Coast Landscape Assessment North of the Princes Highway

In 2003, Planisphere was commissioned by the then Department of Sustainability and Environment to undertake a landscape character assessment of the Great Ocean Road Region, south of the Princes Highway. In 2007, the Shire commissioned Planisphere to undertake an assessment of the landscape character and significance of the Shire's areas north of the Princes Highway, to complete the assessment of the Shire's landscapes.

Planisphere's *Background Report, Landscape Assessment North of the Princes Highway,* March 2007 identifies the western portion of the study area (which roughly equates to the Winchelsea Plains area, and includes the site) as part of Precinct 1.1 identified in the Great Ocean Road Study, and the eastern portion as part of Precinct 1.2. The Panel understands that the background report was accompanied by more detailed precinct packages for Precincts 1.1 (Winchelsea Plains) and 1.2 (Barrabool Hills).

The background report notes a trend toward increased rural living and hobby farming developments in the study area, and makes recommendations including changes to the local policy framework to better and more clearly identify and protect the landscape values of the area.

Council Plan

The Council Plan sets Council's strategic direction for the next four years. It sets goals for many highly valued priorities such as infrastructure, renewable energy, transport corridors, digital technology, customer service and financial responsibility

Council established a Renewable Energy Task Force as a partnership between Council and the community which has the following objective:

> To provide direction and leadership for the municipality that assists the achievement of the State Government target of at least 25% renewable energy by 2020.

The Council Plan includes a theme on Environmental Leadership, which includes:

- a strategic objective "*Drive the use of renewable energy*"
- an Outcome "*Surf Coast Shire is a state leader in the take up of renewable energy*"
- Strategies to "*Implement the Renewable Energy Road Map*" and "*Support the work of the Renewable Energy Task Force*".

The Plan notes that growth has put pressure on existing infrastructure, and that agricultural features of rural areas are playing a significant role in the development of the Shire's economy.

2.3 Renewable energy policy

The Climate Change Act

The *Climate Change Act 2017* provides a foundation to manage climate change risks and support Victoria's transition to a net zero emissions climate resilient economy. It states:

> The Parliament of Victoria recognises that some changes in the earth's climate are inevitable, despite all mitigation efforts. Victoria is particularly vulnerable to the adverse effects of climate change. Natural disasters are increasing in frequency and severity as a result of the changing climate. Impacts are felt differently and to different extents across individual regions and communities.
>
> Although responding to climate change is a responsibility shared by all levels of government, industry, communities and the people of Victoria, the role of subnational governments in driving this transition cannot be understated. Through decisive, long-term action to reduce greenhouse gas emissions, the Victorian government can help Victoria achieve an orderly and just transition to a net zero greenhouse gas emissions economy and remain prosperous and liveable. It will also enable Victoria to benefit from the global trend towards decarbonisation.

Section 20 of the *Climate Change Act 2017* requires the Victorian Government to ensure that its decisions appropriately take climate change into account:

> ***20 Decision and policy making***
>
> The Government of Victoria will endeavour to ensure that any decision made by the Government and any policy, program or process developed or implemented by the Government appropriately takes account of climate change if it is relevant by having regard to the policy objectives and the guiding principles.

The policy objectives are set out in section 22, along with six guiding principles.

Victoria's Climate Change Framework

Victoria's Climate Change Framework was prepared under the Climate Change Act. It identifies four pillars that underpin the transition to a climate resilient and net zero emissions Victoria by 2050. The pillar of particular relevance to the project is:

> Move to a clean electricity supply by increasing renewable energy generation.

Victoria's Renewable Energy Action Plan

The Victorian Government has adopted renewable energy generation targets of 25 percent by 2020 and 40 percent by 2025, which are legislated under the *Renewable Energy (Jobs and*

Investment) Act 2017. *Victoria's Renewable Energy Action Plan* (2017) outlines government actions to assist in achieving the targets, encourage investment in the energy sector and ensure Victorians benefit from a renewable, affordable and reliable energy system. Relevant actions include Action 1 – Setting and delivering on ambitious and achievable renewable energy targets and Action 6 – Streamlining renewable energy projects processes and approvals.

The Victorian Renewable Energy Auction Scheme was established to support achieving the target. The action scheme called for bids from renewable energy projects through a formal process. Six successful projects have been selected so far, and the Victorian Government has entered into 'Support Agreements' with the successful bidders.

Victoria's Renewable Energy Roadmap

In August 2015 the Victorian Government released *Victoria's Renewable Energy Roadmap: Delivering jobs and a clean energy future*. It outlines the Government's objective to accelerate development of renewable energy generation in Victoria to reduce emissions, create jobs, and reduce energy prices. The Roadmap sets out Government policy to re-establish Victoria as a leader in renewable energy development:

> The Victorian Government is committed to sustainable development and to decreasing Victoria's reliance on non-renewable sources of energy. This commitment is important in addressing the environmental consequences of climate change and is also vital for the future of job creation and economic development in Victoria. Transforming our energy generation sector towards renewable energy provides important opportunities for new businesses and jobs in Victoria.

The Roadmap identifies four priorities:

- transformation in the wholesale electricity market toward renewable energy
- reducing barriers to continued development of distributed generation and energy storage
- encouraging household and community development of renewable generation, products and services
- government support for renewable energy development, with a focus on job creation in Victoria.

2.4 Planning scheme provisions

(i) Zones and overlays

The land is in the Farming Zone. The purposes of the Zone are:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To provide for the use of land for agriculture.
- To encourage the retention of productive agricultural land.
- To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.
- To encourage the retention of employment and population to support rural communities.
- To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

- To provide for the use and development of land for the specific purposes identified in a schedule to this zone.

Parts of the land are subject to the Land Subject to Inundation Overlay, but as noted above, no works are proposed in these areas and no permit is required under the Overlay.

(ii) Particular provisions

The purpose of Clause 52.32 (Wind energy facilities) is:

> To facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area.

Clause 53.13 applies to renewable energy facilities other than wind farms and geothermal energy extraction. It applies to the solar farm component of the project. The purpose of Clause 53.13 is:

> To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area.

The purposes of Clause 52.17 (Native vegetation) are:

> To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017):
>
> 1. Avoid the removal, destruction or lopping of native vegetation.
> 2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
> 3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.
>
> To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.

(iii) General provisions

Clause 65 states:

> Because a permit can be granted does not imply that a permit should or will be granted. The Responsible Authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines of this clause.

Clause 71.02-3 requires a Responsible Authority to take an integrated approach, and to balance competing objectives in favour of net community benefit and sustainable development when determining a permit application.

(iv) Amendment VC157

Amendment VC157 came into effect on 15 March 2019, after the conclusion of the Hearing. The Amendment makes changes to all Victorian planning schemes to require a permit for transmission lines or substations directly associated with an energy generation facility (which includes wind and solar farms). The new rules do not apply to projects approved before 15 March 2019. The new rules will, therefore, apply to the Inverleigh Wind and Solar Farm.

According to the Minister for Planning[3]:

> This change will ensure that developers take into account visual aspects and traffic safety issues, while also ensuring the public have the chance to make submissions as part of the permit application process.

2.5 Guidelines

(i) Wind Farm Guidelines

Development of Wind Energy Facilities in Victoria: Policy and Planning Guidelines (DELWP, October 2018) (the Wind Farm Guidelines) is a reference document under the Planning Scheme for planning permit applications for wind energy facilities. The Guidelines set out a framework for a consistent and balanced approach to the assessment of wind farms, including consistent operational performance standards and guidance on how planning permit application requirements might be met.

(ii) Draft Solar Farm Guidelines

The Victorian Government has developed the *Draft Solar Energy Facilities – Design and Development Guidelines* (DELWP, 2018) (the draft Solar Farm Guidelines) to help outline the assessment and development process for large-scale solar energy facilities in Victoria. They are informed by guidelines and best practice standards applied interstate and internationally.

The draft Solar Farm Guidelines include requirements for planning and assessing new solar farm proposals. They state that regulatory authorities should consider relevant government policy, appropriate site location, regulatory requirements, best practice design and development features, as well as early and effective community engagement. They direct that solar energy facility proposals must reflect the Victorian Government's key policy directions, including renewable energy, water, regional development, agriculture, and biodiversity.

The draft Solar Farm Guidelines were open for comment until 1 March 2019. They will be finalised through community and industry consultation, with the aim of providing clear and technically robust advice on establishing well located, best practice facilities. DELWP submitted that the Panel should consider the draft Solar Farm Guidelines notwithstanding that they have not yet been finalised.

(iii) Community Engagement and Benefit Sharing Guide

The *Community Engagement and Benefit Sharing in Renewable Energy Development: A Guide for Renewable Energy Developers* (DELWP, 2017) (the Community Engagement and Benefit Sharing Guide) sets out the Victorian Government's expectations in relation to

[3] Press release, Department of Premier and Cabinet, 5 March 2019 https://www.premier.vic.gov.au/planning-for-renewable-energy-transformation/

community engagement and benefit sharing for the renewable energy industry. It is referenced in the Wind Farm Guidelines.

The Guide describes factors that contribute to better practice community engagement, discusses benefit sharing and why it is important, and presents tools, frameworks and other resources for enhancing engagement and benefit sharing practices. It identifies a number of key factors that consistently contribute to positive social outcomes and strong community support for renewable energy projects (at page 7):

- starting engagement early in the development process
- integration of the development with local landscape values and local identity (tailoring to local context)
- completing a social feasibility analysis
- community (especially local) participation in decision-making and design (fair process)
- sharing the benefits from the development in an equitable way (fair outcomes)
- building trust and relationships between stakeholders
- regular and face-to-face engagement
- prioritising an accessible complaints management process
- managing community engagement for legacy projects.

The Guide describes how the Victorian Government will assess the community engagement and benefit sharing aspects of projects applying under the Government's reverse auction scheme (discussed at Chapter 2.3), but it is not limited to projects participating in the reverse auction process.

3 Threshold strategic and policy issues

This chapter addresses threshold policy and strategic matters. The rest of the Report goes on to consider the likely impacts of the project, whether those impacts are acceptable, and whether permits should be granted.

3.1 The threshold issues

The threshold issues are:

- the scope of the applications
- whether the site meets the locational criteria for a wind farm
- whether the project could constrain the future growth of Inverleigh and Winchelsea
- whether there is overall policy support for the project
- the key policy tension between encouraging renewable energy and protecting agriculture.

3.2 Scope of applications

(i) Discussion

One of the threshold questions the Panel must determine is the scope of the permit applications – in other words, what the Proponent is seeking a permit for. The application forms seek permission to:

- use and develop the whole of the land for a wind energy facility
- use and develop the parcel of land at 480 Peels Road for the purposes of a renewable energy facility (solar farm)
- erect and display a business identification sign
- remove native vegetation.

It is relatively clear that the project also includes a substation, access tracks, underground cabling, an anemometer mast, water tanks, an operations and maintenance building, a temporary laydown area and a temporary batching plant. These elements are shown on the development plans, and described as 'associated works' in the Planning Report prepared by Hansen Partnership submitted with the permit applications.

Concrete batching plant

On balance, the Panel finds that the applications include a temporary concrete batching plant, given it is included in the Planning Report's description of 'associated works', and shown on the development plans. However, apart from an indicative footprint on the development plans, no detail is provided in relation to what is proposed, and no assessment has been made of the potential impacts of the batching plant. The Panel does not support permission being granted for a concrete batching plant, due to insufficient information being provided in the application documents. If permits are issued, references to the batching plant should be removed from the development plans.

Battery storage

Battery storage is a section 2 use requiring permission under the Farming Zone. One of the development plans includes an area identified as 'substation 2 and battery storage', but no further detail of the battery storage is provided in the application forms or the supporting documents. The Planning Report makes no mention of battery storage forming part of the project, or whether this is within the scope of approval sought. Nor is battery storage mentioned in any of the other reports accompanying the permit applications, apart from a passing reference in the Indicative Economic Impact Assessment to the potential economic benefits of battery storage.

The Panel finds that on balance, the applications do not include a battery storage facility. If the Proponent wishes to include battery storage, it will need to obtain separate permission.

Temporary quarry

A quarry is a section 2 use requiring permission under the Farming Zone. The Traffic Impact Assessment submitted with the applications includes a passing reference to an on-site quarry, but no detail is provided. No quarry is shown on the development plans, or mentioned in the Planning Report as forming part of the project, or whether it is within the scope of approval sought. No assessment has been made of its potential impacts.

The Panel finds that on balance, the applications do not include a quarry. If the Proponent wishes to include a quarry, it will need to obtain separate permission.

Transmission lines to connect to the national grid

The applications contemplate two ways in which the project could be connected to the national grid – directly into the 220kV transmission line traversing the site (option 1), or an off-site connection into 66kV transmission lines in the vicinity of the site (option 2). Option 2 would require off-site transmission lines.

As noted in Chapter 2.4(iv), following Amendment VC157 coming into effect, a permit is now required for transmission lines or substations directly associated with a renewable energy project. The applications seek permission for a substation, but they do not include any transmission lines required to connect the project to the grid. If option 2 is pursued, the necessary transmission lines to connect into the grid will require a separate permit.

(ii) Conclusions and recommendation

The Panel concludes:

- While the permit applications include a temporary concrete batching plant, the Panel does not support the concrete batching plant as insufficient information has been provided about the plant or its potential impacts.
- The permit applications do not include battery storage or a quarry.
- If permits are issued for the project, references to the battery storage and temporary batching plant should be removed from the development plans.
- Following the introduction of Amendment VC157, separate permission will be required for off-site transmission lines required to connect the project to the national grid.

The Panel recommends:

> **If permits for the wind farm or the solar farm issue, include a condition requiring references to battery storage and a temporary concrete batching plant to be removed from the development plans.**

3.3 Locational criteria

(i) Evidence and submissions

The Proponent called Mr Iles to give planning evidence. Mr Iles addressed the threshold question of whether the site is an appropriate location for a wind and solar farm. He noted that the wind farm application meets the requirements of Clause 52.32 in that none of the turbines are within 1km of a dwelling where the written consent of the land owner has not been obtained. The site is also not within any of the areas referred to in the schedule to Clause 52.32 or the Wind Farm Guidelines where wind farms are prohibited:

- national parks and other land subject to the *National Parks Act 1975*
- RAMSAR wetlands
- Yarra Valley and Dandenong Ranges, the Bellarine and Mornington Peninsulas, and the Macedon and McHarg Ranges
- land within 5kms of the high water mark along much of Victoria's southern coast
- land west of the Hume Freeway and the Goulburn Valley Highway
- land within 5kms of various regional centres, including Colac and Geelong.

Many submitters said that the surrounding area, particularly the Barrabool Hills, should be properly characterised as a rural lifestyle area rather than a broadacre farming area. They felt that, irrespective of the zoning of the surrounding land (which is largely Farming Zone), much of the area now consists of smaller rural lifestyle lots. Many of the surrounding landowners rely on off-farm sources of income. They submitted that a rural lifestyle area is not an appropriate location for a wind farm. For example, Mr Barry suggested that there are plenty of other more sparsely populated rural areas in Victoria that would be more suitable locations for wind farms.

(ii) Discussion

The Panel is satisfied that the site meets the locational criteria in the Planning Scheme for a wind farm. It is not in an area in which Clause 52.32 or the Wind Farm Guidelines prohibit or discourage a wind farm. The Panel accepts the Proponent's advice that the wind resources in the area are suitable for a wind farm.

Renewable energy projects require relatively large sites to accommodate large arrays of solar panels and wind turbines. They must be located in areas with reliable sun and wind resources, with access to the national electricity grid. It is clear from existing and proposed wind and solar farms in Victoria that renewable energy projects of this nature are most likely to be located in rural areas, given the size of land needed and other physical attributes.

While the Panel acknowledges that many of the surrounding properties rely on off-farm income and could, on one view, be regarded as rural lifestyle properties, the area is in a Farming Zone. It is not in a Rural Living Zone, or a Rural Conservation Zone. The Farming

Zone sets the expectations for the types of land uses and developments in the area. Renewable energy facilities are allowed in the Farming Zone, provided a permit is obtained. Industry is also allowed in the Farming Zone, subject to obtaining a permit.

The purposes of the Farming Zone are to (among other things) encourage the retention of productive agricultural land, and ensure non-agricultural uses do not adversely affect the use of land for agriculture. They also encourage employment and population to support rural communities. There is nothing in the purposes or the provisions of the Farming Zone that suggest that the Farming Zone is an inappropriate location for renewable energy facilities. That said, there is some tension between policy support for renewable energy facilities, and policy support (and the purposes of the Farming Zone) that seeks to protect agricultural land. This policy tension is discussed in detail in Chapter 3.6.

(iii) Conclusions

The Panel concludes:

- The site, generally speaking, meets the locational criteria for a potential wind farm.

3.4 Potential constraint on future growth of townships

(i) Evidence and submissions

Council noted that Clause 21.09 (Winchelsea Strategy) directs urban growth to Winchelsea as one of the region's townships capable of accepting growth. It noted that the site is around 6kms from the Low Density Residential Zone at Winchelsea Township, and while Clause 21.09 identifies future low density residential areas around Winchelsea, these are not close to the site.

Mr Iles did not think the project would constrain the future growth of Inverleigh or Winchelsea. He noted that short term growth opportunities were identified to the north and west of Inverleigh (on the Inverleigh Structure Plan in Clause 21.07 of the Golden Plains Planning Scheme), and that the southern expansion of the township (toward the site) is constrained by the floodplains of the Barwon and Leigh Rivers. The Winchelsea Structure Plan (in Clause 21.09) identifies some potential for future low density residential growth on the eastern side of the township, but Mr Iles considered that there was no potential for future land use conflicts with the project due to the distance to the site (roughly 5.5kms).

(ii) Discussion

The Panel accepts Council's submission and Mr Iles' evidence that the project is unlikely to pose any constraints for the future growth of the Shire, including the townships of Inverleigh and Winchelsea.

(iii) Conclusion

The Panel concludes:

- The project will not constrain the future growth of the Inverleigh and Winchelsea townships in line with the expectations set out in the Planning Policy Framework.

3.5 Overall policy support

(i) Evidence and submissions

Mr Iles' evidence was that there was strong policy support for renewable energy projects in the Planning Policy Framework, both at a State and local level. He noted the State Government's renewable energy targets, and that the key messages from the Council Plan include achieving a 25 per cent renewable energy usage by 2020, and seeing the Shire become a State leader in renewable energy.

Council submitted that it supports large scale renewable energy projects in the Shire, and that (if approved) this would be the first and only large scale renewable energy project planned. It submitted:

> Surf Coast Shire Council is committed to creating sustainable communities, and by sustainable, meaning:
>
> > "The principle of ensuring our actions today do not limit the range of economic, social and environmental options open to future generations."
>
> The wind farm and solar farm represent an innovative and sustainable practice that is consistent with Councils vision and will assist with long-term environmental benefit by generating renewable energy and mitigating impacts of climate change.

Council submitted that the site is not identified as having significant environmental values and that the project will have minimal impact on natural resources. Council further noted that the proposal will generate renewable energy, which will mitigate against further loss to natural resources, consistent with Clause 21.03 (Environmental management) of Council's Municipal Strategic Statement. Council requested DELWP to pay particular attention to environmental considerations, and include appropriate conditions on any permits for the Proponent to monitor and report on the impacts on flora and fauna.

(ii) Discussion

The Panel accepts the evidence of Mr Iles and the submissions of Council that the project does not present any fundamental inconsistencies with the policy framework. It is clear from an analysis of the policy context, zone controls and particular provisions outlined in Chapter 2 that renewable energy projects have strong policy support.

The project is consistent with the purposes of Clauses 52.32 and 53.13, which seek to facilitate the establishment and expansion of renewable energy facilities. It is not inconsistent with the purposes of the Farming Zone that seek to encourage the retention of productive agricultural land, and encourage use and development based on comprehensive and sustainable land management practices and infrastructure provision.

Policy support for renewable energy projects is not, however, unqualified. Impacts on surrounding land uses, landscape and natural and cultural values must also be considered and balanced. These are addressed in the following chapters.

(iii) Conclusion

The Panel concludes:

- Renewable energy projects have strong policy support, and there are no fundamental policy reasons preventing the project from proceeding.

3.6 The key policy tension

(i) Evidence and submissions

Mr Iles' evidence identified a fundamental tension in the Planning Policy Framework between supporting and encouraging renewable energy, and the protection of agriculture and agricultural land. He noted the strategies in Clause 14.01, including protecting productive farmland of local or regional significance, and noted that the G21 Regional Growth Plan identifies agricultural land uses as a regional strategic asset, and locates the site within an area where productive agriculture is to be maintained.

Mr Iles acknowledged that the project would temporarily remove parts of the site from agricultural production, but noted that these parts could be returned to agricultural use after the project is decommissioned. Other parts of the site could continue to be used for grazing, cropping and animal farming during the life of the project. He concluded:

> In my view the environmental and economic benefits of the wind and solar farm to the community, as outlined earlier in my statement, should outweigh any impacts associated with the temporary removal of parts of the review site from agricultural production.

Council noted that Clause 21.05 (Agriculture) of the Municipal Strategic Statement identifies the growing economic value of agriculture as a key issue in the Shire. It submitted that the construction of the project will temporarily disrupt agriculture on the site, and acknowledged that project infrastructure, particularly the solar panels, will remove land from agricultural production, or at least reduce opportunity for agricultural uses, for the life of that facility. However a substantial area of the site can continue to be used for agriculture during the life of the project, thereby protecting the ability for future generations to productively farm the land. Council submitted that:

> … based on established wind farm and solar farms in agriculture areas, it is anticipated the loss of surrounding agricultural productivity associated with land use conflicts will be low and the proposal will have minimal impact on surrounding agricultural uses. The economic benefit to the host properties may assist improvement in agricultural production at the subject site.

One of the key concerns raised by submitters was the lack of detail provided in relation to the eventual decommissioning of the site at the end of the life of the project and its return to agricultural use. They were concerned about whether redundant project infrastructure both above and below ground would be removed, who would be responsible for doing so, and how decommissioning obligations could be guaranteed and enforced. Mr and Mrs Campbell contrasted the project with a quarry proposal, submitting that a quarry would require a detailed site restoration plan to be approved up front, and a fund to be set aside to secure the future restoration works. Others, for example Mr Tucker, highlighted concerns around turbine footings creating contamination, particularly if they were not required to be removed when the project was decommissioned.

(ii) Discussion

The Panel agrees with Mr Iles that the key tension to be resolved is the competing policy objectives supporting and encouraging renewable energy, and those that seek to protect strategically significant productive farmland.

The Panel acknowledges the importance of agricultural production in both the State and local provisions of the Planning Policy Framework. Clause 14.01-1S requires that productive agricultural land is not permanently removed from the State's agricultural base without considering its economic importance for the agricultural production and processing sectors. The Rural Strategy acknowledges the importance of agriculture to the Shire's economy, and encourages the ongoing protection of agricultural land against non-agricultural uses and fragmentation.

The policy framework identifies the area in which the site is located as productive agricultural land, suitable for intensive agriculture. While it is not identified as State significant agricultural land, the Rural Strategy describes it as significant, at least for the Shire.

The Panel heard from one of the site owners, Colin Peel, that he has put considerable effort into farming his land efficiently and sustainably, with a view to the future. He, like many of his neighbours, has adopted innovative farming techniques, including participating in successful trials of raised bed cropping techniques to better retain water on site and manage runoff. He noted that his farm is not large, and that the project will provide additional income to help him continue to farm the balance of the land sustainably.

The Panel is satisfied that the project will not permanently remove the site from the State's agricultural land base. The project will inevitably impact on the agricultural use of the site, and possibly surrounding agricultural uses, during the construction phase. However, the Panel is satisfied that those impacts should be relatively minor and short-lived, and can be managed with permit conditions and a robust Construction Environment Management Plan and Traffic Management Plan. Farming can continue on much of the site during the operational phase, although the capacity to use the 26ha occupied by the solar farm for agricultural production will be limited.

In terms of decommissioning, DELWP's without prejudice draft wind farm permit conditions (Document 85) require removal of all infrastructure, plant, equipment and access tracks that are no longer required for the ongoing use or decommissioning of the wind farm, and reinstatement of the site to the condition it was in prior to the commencement of development. DELWP's proposed solar farm permit conditions (Document 86) require a Decommissioning Management Plan to be approved which identifies structures to be removed, including all solar panels, substation, buildings (if they are not useful for ongoing use) and electrical infrastructure, and details of how the land will be rehabilitated to allow it to be used for agricultural purposes (or proposed alternative uses). Both proposed permit conditions require the Environment Management Plan to address impacts of decommissioning, and a Decommissioning Traffic Management Plan to be prepared to address the traffic impacts of decommissioning works.

On balance, the Panel agrees with Council and Mr Iles that the tension between renewable energy production and protection of agricultural land can be resolved if the project were to proceed. The proposed decommissioning conditions allow for the land to be transitioned back to agricultural use once the project is complete. They contemplate the removal of all infrastructure, which would include turbine foundations and other below ground infrastructure such as electrical cabling. Nothing was put to the Panel which suggests that removing the project infrastructure would cause substantial disturbance to the land or jeopardise its future use for agricultural purposes.

Some drafting changes are required to the decommissioning conditions to improve their consistency (as between the wind and solar farms) and to generally improve their operational efficiency. The Proponent submitted that some flexibility should be built into the conditions to allow infrastructure such as access tracks to be retained at the site owners' request. The Panel considers that this is appropriate.

(iii) Conclusions

The Panel concludes:

- Using and developing the site for a wind and solar farm can, subject to appropriate permit conditions, achieve agricultural production and renewable energy policy objectives.
- Decommissioning can be dealt with through appropriately drafted permit conditions, to ensure that the land can be transitioned back to agricultural use once the project is complete.

Having concluded that these fundamental threshold issues can be resolved, the Panel goes on to consider in the rest of this Report whether the impacts of the project can be acceptably managed, and whether permits should be granted.

4 Visual and landscape impacts

Wind farms can have significant landscape and visual impacts, primarily through the turbines which are a large element in the landscape. Ancillary infrastructure such as terminal stations and overhead powerlines can also have visual impacts.

4.1 The issues

The issues are:

- methodology of the Landscape and Visual Impact Assessment, including accuracy of the photomontages
- appropriateness of the assessment of landscape value
- whether impacts on private dwellings have been accurately and appropriately assessed
- cumulative impacts with other wind farms in the area
- visual impact of associated infrastructure, including connections to the national grid, should the project proceed
- landscape mitigation, including whether and at what distance off-site mitigation is justified, should the project proceed.

4.2 Relevant policies, strategies and studies

(i) Clause 12.05-2S

Clause 12.05-2S (Landscapes) seeks to protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments. Strategies include:

- ensuring that development does not detract from the natural qualities of significant landscape areas
- recognising the natural landscape for its aesthetic value and as a fully functioning system
- ensuring important natural features are protected and enhanced.

(ii) Clause 21.06

Clause 21.06 (Rural landscape) recognises that the Shire's landscapes make an important contribution to amenity, enhancing the lifestyle of residents and adding value to the tourism economy. It acknowledges the importance for economic and social reasons of ensuring that new land use and development is complementary to the highly valued rural landscapes. Its objectives include:

- protect and enhance the landscape values of the precincts
- protect and maintain open and uncluttered rural landscapes, including vistas from main road corridors.

Clause 21.06 maps five landscape units. The site is located in the Winchelsea Plains precinct and is just to the west of the Barrabool Hills precinct, as shown in Figure 3 below. Noted features of the Winchelsea Plains unit include Lake Murdeduke and Mount Pollock, the

agricultural capability of the land, and a limited extent of rural living. The Barrabool Hills unit (which is described as "*this precinct and west to Mount Pollock*") is noted as a scenic corner of the municipality, classified as regionally significant by the National Trust.

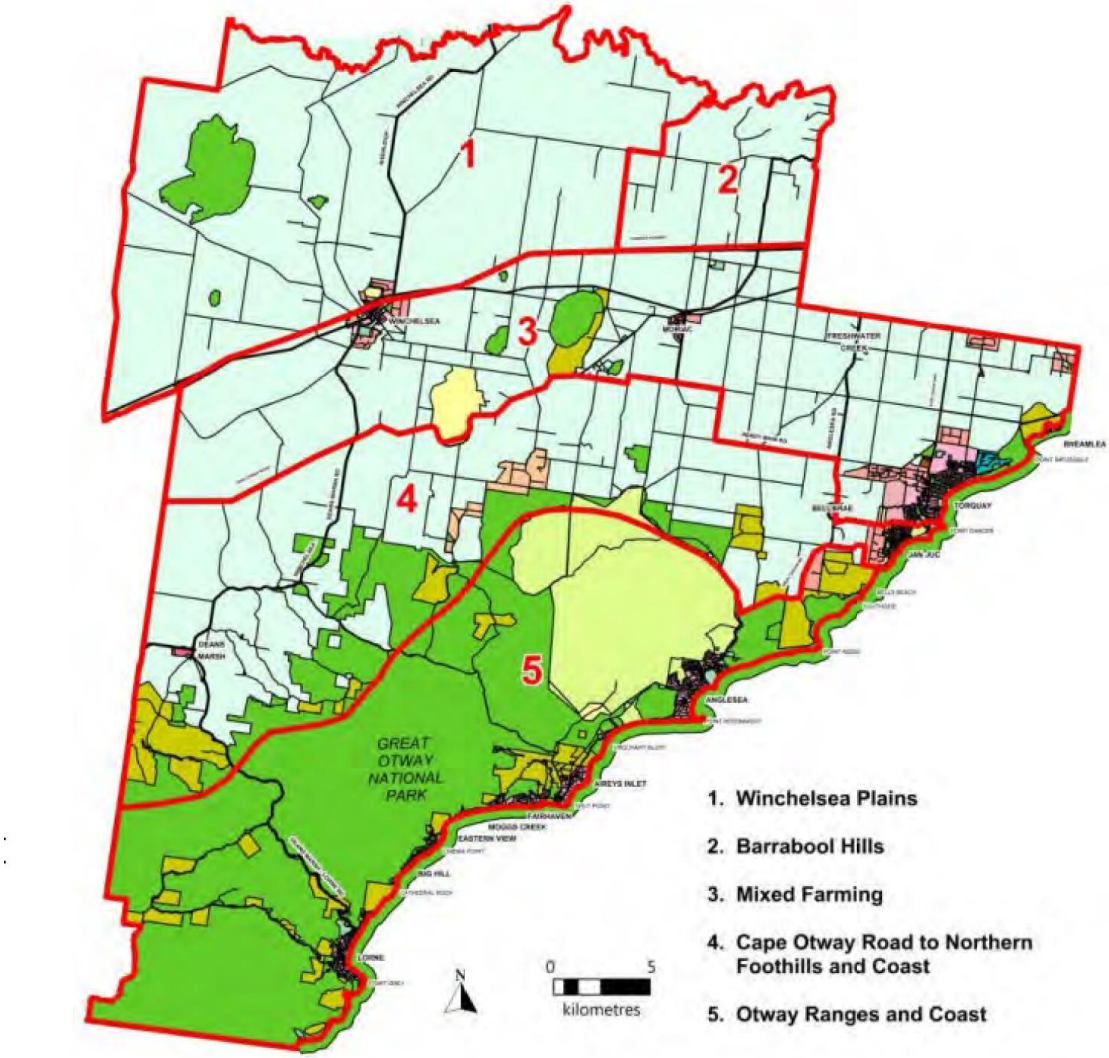

Figure 3 Landscape units map from Clause 21.06 of the Surf Coast Planning Scheme

Relevant strategies in Clause 21.06 include:

- encourage the siting and design of new buildings to complement existing farm structures, avoid locating on hilltops and ridges and to nestle into the landscape where possible
- ensure new buildings are sited and designed in the Barrabool Hills to foster the historic rural landscape qualities of the area
- encourage new development, including intensive animal industries and dwellings, to adopt a clustered development pattern rather than being dispersed throughout the landscape.

Clause 21.06-4 provides the following guidance for the exercise of discretion under the Scheme:

- In considering any application for a non-agricultural land use and/or development apply the following development principles:

- Buildings should be of modest scale and nestle into the landscape
- Buildings should be subservient to the landscape so as not to detract from its visual qualities
- Proposals should include net gain environmental outcomes
- Development should be self-sufficient in the provision of infrastructure and associated costs.

Further strategic work identified in Clause 21.06 includes investigating the need for further protection of the landscape qualities of the Barrabool Hills as requested by the National Trust.

(iii) The National Trust classification of the Barrabool Hills

In 2009, the National Trust classified the Barrabool Hills across to Mount Pollock as significant at a regional level for their aesthetic qualities, geological and geomorphological properties.[4] The classification identifies a number of significant features and landscape values of the area, including its scenic quality, intactness and associations with Indigenous and non-Indigenous people. It describes the historic connections of the area to Captain Joseph Pollock, after whom Mount Pollock is named. It states:

> The most outstanding aspect of the Barrabool Hills is the scenic quality, including views towards and from the hills in all directions, as well as fine pastoral views internally (See photographs in Appendix 2 A-F). They are the dominant element of the landscape in the region west of Geelong.

(iv) Rural Strategy

The Rural Strategy describes the key characteristics of the landscape precincts in the Shire, and sets out landscape objectives and strategies for each precinct. Those for the Winchelsea Plains and Barrabool Hills precincts have generally been translated into Clause 21.06, discussed above.

(v) Surf Coast Landscape North of the Princes Highway

Planisphere's *Background Report, Landscape Assessment North of the Princes Highway,* March 2007 (Document 48) makes recommendations including changes to the local policy framework to better and more clearly identify and protect the landscape values of the area. It does not recommend applying the Significant Landscape Overlay to land north of the Highway. The report is referenced in Clause 21.06 of the Planning Scheme.

(vi) Clause 52.32

The application requirements in Clause 52.32-4 of the planning scheme for a wind energy facility include:

- a site and context analysis which includes the landscape of the site, and views to and from the site including from existing dwellings and key vantage points

[4] National Trust of Australia (Victoria) Classification Report, L10294, Barrabool Hills, attached to the National Trust's submission (Document 95).

- a design response which includes:
  - accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points
  - a description of how the proposal responds to any significant landscape features for the area identified in the planning scheme
  - an assessment of the visual impact of the proposal on the surrounding landscape and any abutting RAMSAR wetland or coastal area.

The decision guidelines in Clause 52.32-5 require the Responsible Authority to consider the impact of the development on significant views, including visual corridors and sightlines.

(vii) Clause 35.07

The decision guidelines in Clause 35.07-6 of the Farming Zone require the Responsible Authority to consider design and siting issues, including impacts on:

- the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts
- the character and appearance of the area, features of architectural, historic or scientific significance, or features of natural scenic beauty or importance.

(viii) Wind Farm Guidelines

Section 5.1.3 of the Wind Farm Guidelines recognises that wind farms will have visual impacts.

> A Responsible Authority needs to determine whether or not the visual impact of a wind energy facility in the landscape is acceptable. In doing so, they should consider planning scheme objectives for the landscape, including whether the land is subject to an Environmental Significance Overlay, Vegetation Protection Overlay, Significant Landscape Overlay or a relevant strategic study that is part of the relevant planning scheme.

Section 5.1.3 lists a number of matters that must be considered by decision-makers. These are largely reflected in the requirements of Clause 52.32, discussed above. Section 5.1.3 also lists a range of mitigation measures to reduce the visual impacts of a wind farm.

(ix) The Community Engagement and Benefit Sharing Guide

The Community Engagement and Benefit Sharing Guide recognises the importance of landscapes to local communities, and the importance of engaging with the community in relation to landscape impacts. It states (at page 10):

> It is common for people to have long-term and deep personal attachments to landscapes. Landscape change is a dominant factor in explaining social concerns around renewable energy development. In Australia, researchers found that perceptions of "spoiling a sense of place is a primary cause of enduring social conflict"[5]. This is not simply about visual impact, but how well or poorly a renewable energy development integrates with or augments local perceptions of what is important and appropriate.

The Guide identifies a number of key factors which contribute positive social outcomes and strong community support for renewable projects. They include integrating the development with local landscape values and local identity, and tailoring it to the local

context. The Guide encourages proponents to consider what local landscapes are important to Aboriginal and non-Aboriginal people, and highlights the importance of allowing the community to share their thoughts on the local landscape, what it means to them, and what the perceived impacts of the project may be.

4.3 Evidence and submissions

(i) The Landscape and Visual Impact Assessment

The wind farm permit application was accompanied by a Landscape and Visual Impact Assessment dated May 2018 prepared by Hansen Partnership. The Assessment was authored by Mr Schutt, who was called by the Proponent to give expert evidence at the Hearing (Document 19).

The Assessment assessed the visual and landscape impacts of the wind farm from seven representative viewpoints in the public domain, including through photomontages. It also assessed the impact on 10 non-stakeholder dwellings within 3kms of the nearest turbine, based on assumptions drawn from the photomontages. No photomontages were prepared for private viewpoints, and no private dwellings were inspected by Hansen Partnership in the preparation of the Landscape and Visual Impact Assessment.

The Assessment identified several different landscape character types within 20kms of the site, as shown on Figure 4 below. It ascribed a landscape value for each of these landscape character types – 'moderate' for Volcanic Plain, Volcanic Uplands, River Valley, Undulating Pastoral and Townships, and 'high' for Volcanic Cones.

The Assessment identified the lower lying land on the site has having a Volcanic Plains landscape character and Mount Pollock as having a Volcanic Uplands landscape character, both of which had 'moderate' landscape value. Mr Schutt considered that the site, including Mount Pollock, sat outside the Barrabool Hills landscape character unit described in Clause 21.06 and classified as regionally significant by the National Trust.

The Panel asked Mr Schutt whether he had considered the impact of the project on views to and from the high value Volcanic Cones landscape units to the west of the site shown in Figure 4 below. He said that while none of the photomontages in the Landscape and Visual Impact Assessment explicitly addressed views including the Volcanic Cones, the nearest cones were located some 15kms from the site, and that at this distance the turbines would not unreasonably impact on those high value landscapes.

Figure 4 Landscape character types in the vicinity of the site

Source: Landscape and Visual Impact Assessment Figure 8

The Landscape and Visual Impact Assessment set out criteria for assessing visual impacts, using a grading system extracted in the following table.

Table 2 Categories of landscape and visual impact

Category	Description
Extreme	Entailing close proximity in an exposed location incapable of effective mitigation where in principle the proposed structures would impact unacceptably on visual amenity, with limited opportunity for the implementation of mitigation measures.
Substantial	Where impacts will be substantial, with the proposed structures forming a major element in the view. There will be a tendency for proposed structures to be more dominant than other landscape elements. Consideration of the feasibility and appropriateness of mitigation measures will determine whether or not the development results in unacceptable impacts on visual amenity.
Moderate	Proposed structures will typically be visible, sometimes obviously so. Notwithstanding this, the generally greater distances involved, together with the contribution to visual screening typically provided by topography or vegetation, results in situations where proposed structures will not be a dominant element in the view. Mitigations measures are generally not necessary.

Category	Description
Limited	Proposed structures are visible but form only minor elements in available views as a result of distance and/or screening by vegetation and/or topography. Mitigation measures are considered unnecessary.
Negligible	Proposed structures are visible in clear conditions and may be recognisable, but conversely may sometimes not even be noticed. Mitigation measures are considered unnecessary.

The key conclusions of the Assessment were:

- At the seven representative viewpoints, the visual impact of the wind farm would be 'nil' at one viewpoint, 'negligible' at one viewpoint, and 'limited' at five viewpoints.
- Five of the 10 non-stakeholder dwellings would experience a 'moderate' impact, while three would experience a 'limited' impact.
- There will be no cumulative impact associated with the wind farm and any of the other approved wind farms within 50kms of the site.
- Landscape mitigation is not considered necessary, although could be offered for the five non-stakeholder dwellings likely to experience a 'moderate' impact.

(ii) The Proponent

The Proponent submitted that, given the significant policy encouragement for renewable energy facilities in the policy framework, and the limitations on the location of wind farms in the Planning Scheme, there is an expectation that wind farms will be located in farming areas, and will be a visible element in the landscape. It submitted that the Panel should accept the opinions of Mr Schutt and find that the project will have an acceptable visual impact.

Mr Schutt adopted the Landscape and Visual Impact Assessment as his evidence. He also prepared an expert witness report (Document 19) which responded to submissions raising concerns in relation to visual impacts, and addressed the Panel's directions to:

- prepare additional photomontages from viewpoints located at or near at least one non-stakeholder dwelling to the south of the site and one non-stakeholder dwelling to the east of the site (both dwellings had to be located within 3kms of the nearest turbine)
- provide more detail in relation to the rationale for the selection of the seven representative viewpoints for which photomontages were prepared, and whether these represented 'worst case' scenarios in terms of visual impact
- explain why photomontages were not prepared for any private property or non-stakeholder dwellings
- provide a more detailed assessment of cumulative impacts.

Mr Schutt prepared two additional photomontages, both from viewpoints along Mount Pollock Road. His evidence was that Viewpoints 8 and 9 were in close proximity to, and provided an indication of the impact on, the dwellings at 85, 305 and 310 Mount Pollock Road, to the southeast and east of the site. He assessed the impact from Viewpoint 8 (and,

by extension, the dwellings at 305 and 310 Mount Pollock Road) as 'moderate', and the impact from Viewpoint 9 (and the dwelling at 85 Mount Pollock Road) as 'limited'.

Figure 5 Photomontage from Viewpoint 8
Source: Evidence of Mr Schutt (Document 19)

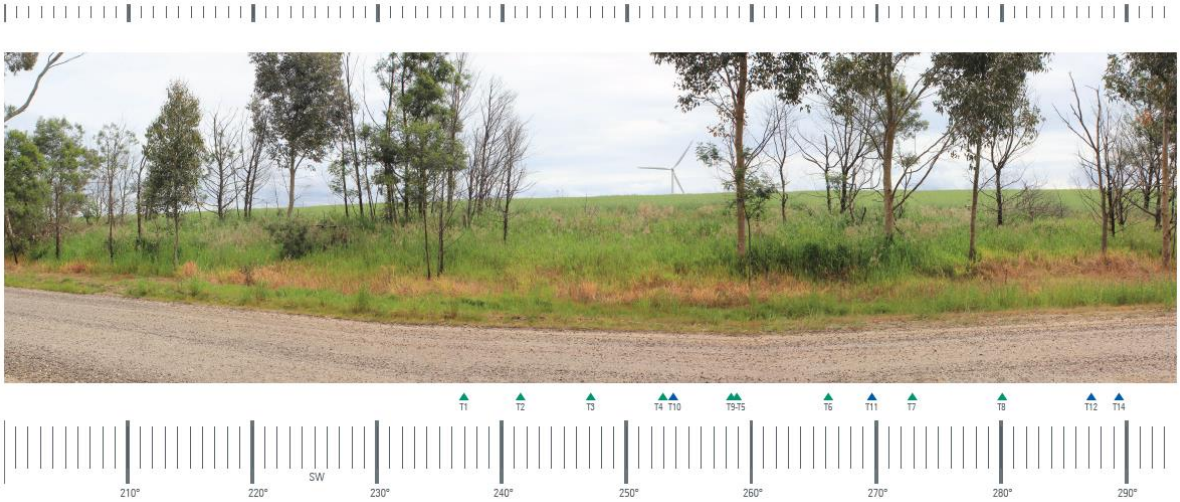

Figure 6 Photomontage from Viewpoint 9
Source: Evidence of Mr Schutt (Document 19)

Mr Schutt explained the rationale for viewpoint selection. He sought viewpoints that:

> … are representative of views towards the proposed wind farm from a variety of locations from which it is expected that a broad cross-section of people might frequent. They each comprise publicly-accessible locations with a range of different visual contexts, being representative of a number of the landscape character types described in the LVIA report, and were selected with consideration as to the likely number and type of 'visual receptor' potentially present at each point.

According to Mr Schutt, best practice requires the selection of representative viewpoints, not 'worst case' viewpoints. He stated that the emphasis in the Wind Farm Guidelines on landscape value supports this approach. He conceded that the project would not be visible from Viewpoint 5 in the Winchelsea township, and that there would no doubt be other locations in Winchelsea where the project would be visible. Nevertheless, he was confident

that the selected viewpoints were in fact representative, and that the photomontages gave an accurate picture of the overall visual impact of the wind farm from multiple locations and distances.

Mr Schutt's view was that cumulative impacts arose when there was no visual break between wind farms, resulting in a viewer perceiving a continuous series of turbines across the landscape. His evidence was that there are no cumulative impacts associated with the project, as the distance (25kms) to the closest approved or constructed wind farm would ensure a clear visual separation.

The Landscape and Visual Impact Assessment did not assess the visual impact of the solar farm. Mr Schutt briefly addressed the solar farm in his expert witness statement, where he concluded (at paragraph 45):

> With regard to the cumulative impact of the proposed wind farm and the proposed solar farm, it is my opinion that given the height of infrastructure associated with the proposed solar farm typically being only 2.0 metres, its visual impact will be negligible, and readily able to be screened from view through the planting of perimeter vegetation if the Panel considered this to be a desirable outcome.

His evidence was that perimeter planting is a common method for screening infrastructure in rural settings, and that screen planting either around the solar panels or around the boundaries of the site would be effective to screen the solar farm component.

Mr Iles noted in his planning evidence that there are no Significant Landscape Overlays applying to the site or surrounding area, and no specific local policies which recognise the landscape value of the area (unlike the Great Ocean Road and Coastal Environs, which are specifically recognised and protected in Clause 22.04 of the Planning Scheme). He noted that the site is well removed from the RAMSAR wetlands to the west. He concluded:

> I maintain that the proposal can coexist with the environmental and landscape values of the site context as the proposal will be appreciated within its landscape context and can be removed at the end of its functional life. It is common across the State of Victoria for wind farm facilities to occupy scenic rural locations.

(iii) The community

Visual impact of the turbines was a key concern for the community. Submitters doubted the methodology and conclusions of the Landscape and Visual Impact Assessment, and the accuracy of the photomontages. Submitters felt that the turbines are very large structures, in the order of four times the height of the lattice towers supporting the existing 220kV transmission lines traversing the site, and nearly three times the height of the light towers at Kardinia Park. They submitted that the photomontages did not reflect the true scale of the turbines in the landscape.

Many submitters felt that the turbines would have an unacceptable impact on the landscape character of the area. The Gnarwarre Community Association pointed to the substantial body of strategic planning work that documents and prioritises the Shire's landscape assets, particularly the regionally significant Barrabool Hills. It submitted that several studies and assessments have rated the landscape value of the Barrabool Hills as 'high', and the community could not understand why this work has not been implemented in the Planning Scheme through a Significant Landscape Overlay.

The Gnarwarre Community Association submitted that, notwithstanding the lack of an overlay, the project is inconsistent with the various objectives and strategies in the Scheme that seek to minimise the visual impact of development on the Shire's rural landscapes, and to protect key valued assets of the Shire including farmland, environment, landscapes and the rural lifestyle of the area. Many submissions called for the proposed turbines on the slopes and crest of Mount Pollock (turbines T10, T11, T12, T14 and T16) to be removed.

Submitters were particularly concerned about impacts on residents living within a few kilometres of the turbines. They noted that no montages had been prepared from private viewpoints, and submitted that the montages prepared from nearby roadsides or driveways did not present an accurate picture of the impact of the turbines from homes, some of which were located substantially closer to the turbines than their driveways. For example, the Dohles submitted:

> I feel that the people who live and work in the area surrounding this proposal are entitled to an accurate visual assessment of what they will see out their kitchen or loungeroom windows, or as they spend their days on a tractor, ute or motorbike, or simply enjoying their recreational activities. This surely is more relevant than a view from a car travelling at 100kms an hour along a highway some ten or fifteen kilometres away.

Mr Tribe and Ms White pointed out that their house is just over 1km from the nearest turbine, much closer than Viewpoint 8 which is located on Mount Pollock Road near their driveway. Their passive solar design house is oriented with windows to the north, to take advantage of solar access and the views of Mount Pollock. They would see the turbines on Mount Pollock from every room in the house. Landscaping mitigation opportunities are limited as the land in front of their house slopes steeply toward the gully located between the house and the site.

Many others raised similar concerns about the visual impact of turbines built within a few kilometres of their houses. Many of the houses in the area have been built with views over Mount Pollock, and submitters were concerned that the turbines would ruin their views. Many of the surrounding landowners spend a lot of time outside, working on their properties and their gardens and enjoying the peaceful rural views of their local area. They would be exposed to views of the turbines for many hours a day. Ms Steel described the impacts as follows:

> Personally, despite our dwellings being at least 4kms away, the views from all three of our dwellings (all of which are habituated) will be significantly altered if the proposal is accepted. The dwellings are all orientated to the North, with 180 degree views, which focus on the distant horizon and significant slopes of Mount Pollock. This vast skyline will now be altered by 16 turbines, nearly all of which will be visible from our home. Although the distance is greater than some, the visibility and all-encompassing nature of the turbines on our 180 degree view will be substantial. This is not taking into account the impact of the turbines from the entire property, right up to 200m from the nearest turbine.
>
> As an acknowledgement of this impact, from significantly tall turbines, we would appreciate the inclusion of 4-5km dwellings within the landscape mitigation strategy and we would be open to discussions of the best ways to mitigate these impacts on our dwellings.

The Gnarwarre Community Association submitted that many of the properties on high ground to the east of the site will have more than 50 per cent of their views taken up by this

and other wind farms in the area. Several submitters told the Panel they can already see other wind farms from their houses or their properties, and felt that the project's turbines, which are significantly larger than other turbines in the area and will be located much closer to their houses, would have an unreasonable impact.

The Campbells pointed to the geological and geomorphological significance of Mount Pollock, and submitted that this had been largely ignored in the Landscape and Visual Impact Assessment. They submitted that the volcanic cones on the Western Plains were slowly being degraded by human activity, and that once these important volcanic features are destroyed or degraded, the community will have lost valuable scientific, educational and aesthetic assets. The Watts also highlighted the geological and landscape significance of Mount Pollock, referring to a 1994 study by Neville Rosengren that describes Mount Pollock as the source of lava that influenced the geomorphology of a large area including the Barwon River valley. They submitted:

> To me Mount Pollock represents home. I love this country and if you like it is my backyard. To put huge 200m high wind turbines on this landscape that at the moment is dominated by Mount Pollock is sacrilegious.

The Gnarwarre Community Association called for off-site landscape mitigation to be offered to dwellings within 5kms of the nearest turbine, in line with other wind farms recently approved in Victoria. Several submitters said that landscape mitigation should be individualised and negotiated with each property owner, as each property owner will be impacted differently by the turbines. Others felt that off-site landscaping would do little to mitigate the visual impacts of the turbines, particularly given their height.

Submitters were concerned about the lack of detail provided in relation to the infrastructure required to connect the project to the grid. They noted that some elements of connecting infrastructure are large, such as gantries or towers supporting powerlines that connect into the network, and the powerlines themselves, particularly if they are required to cross large distances over the landscape. Several submitters referred to (and provided images of) the highly reflective nature of connecting infrastructure at the Salt Creek Wind Farm to demonstrate their concerns.

(iv) The National Trust

The National Trust submitted that community consultation is a key aspect of assessing the value of significant landscapes, as recognised and reflected in the Community Engagement and Benefit Sharing Guide. The Proponent failed to consider how the local community perceives and connects to the landscape values of the site or the area, including those described in its landscape classification for Barrabool Hills. It submitted:

> For instance, there is no evidence to suggest that the proponent has undertaken any micro-siting of the turbines within the volcanic cone of Mount Pollock, which is a regional landmark and highly valued by the local community. This demonstrates a lack of understanding of the local landscape context.

It submitted that the lack of a Significant Landscape Overlay over the area does not signal a lack of significant landscape values, and urged the Panel to assess the permit applications against the values identified in the National Trust's landscape classification:

> In particular we ask that an ability to read these significant values is possible alongside any approved wind/solar farm at this location. Should a permit be granted we request permit conditions that reflect the need to protect, conserve and enhance the landscape and Aboriginal heritage values of this location. This could include consideration of relocating turbine locations in the most sensitive locations of the site such as Mount Pollock.

The National Trust noted that the landscape values of geology, geomorphology and social and historic connections to landscape were not addressed in either the Landscape and Visual Impact Assessment or Mr Schutt's evidence, despite the Heritage Council's 2015 *Landscapes of Cultural Heritage Significance: Assessment Guidelines* specifically referring to the importance of these values. It submitted that the potential for turbine footings to intersect with geological and geomorphological features should be considered, and supported burying associated infrastructure such as cabling provided it did not interfere with native vegetation.

The National Trust acknowledged that being able to see the turbines does not necessarily constitute an undesirable outcome, although there was the potential for some components, particularly the turbines, to detract from the heritage values of places and landscapes. These impacts would need to be balanced against the benefits of the project, and an assessment made as to whether the project delivered a net community benefit.

(v) Council

Council submitted that the wind farm and to a lesser extent the solar farm will result in significant change to the landscape character of Mount Pollock, and to the wider Winchelsea Plains and the Barrabool Hills landscapes. It submitted that this must be weighed against landscape values of the area, and noted that strategies at Clause 21.06-3 mainly relate to the retention of the landscape values over intrusion from built form.

Council noted that further work described in Clause 21.06 includes investigating the need for further protection of the landscape qualities of the Barrabool Hills. Council advised that in 2014 Council decided not to proceed with a Significant Landscape Overlay due to the potential to constrain farming practices with additional regulation (the Significant Landscape Overlay requires a planning permit for any buildings and works).

Council submitted that the visual amenity impacts of powerlines connecting the project to the grid are potentially a very significant issue that is effectively unregulated under the current planning and regulatory framework. Council submitted that statewide reform is required to address the issue, and supported greater opportunities for community engagement on planning for transmission line corridors. These concerns have now been addressed by Amendment VC157, which came into effect on 15 March 2019 after the Hearing concluded (see Chapter 2.4(iv)).

4.4 Landscape and Visual Impact Assessment methodology

The Landscape and Visual Impact Assessment characterises the existing visual environment by reference to landscape units, ascribes those landscape characters a value, and considers whether (and to what extent) the Planning Scheme seeks to afford special protection to those landscapes values. It assesses the visual effect of the project using photomontages, and considers whether the turbines enhance or diminish the visual contribution of identified

'preferred landscape features' to the landscape. The Assessment weights the visual effect by the number of viewers. In a general sense, this is an appropriate methodology for a Landscape and Visual Impact Assessment.

That said, the Panel is not persuaded that the methodology has been properly applied in some instances.

Mr Schutt developed his own definitions and boundaries of landscape character units, instead of adopting the landscape character precincts referred to in Clause 21.06. The Panel did not find this to be terribly helpful. The discrepancies between Mr Schutt's classifications and those described in Clause 21.06 and the studies that support Clause 21.06 caused confusion during the Hearing, and made it more difficult to understand Mr Schutt's assessment of the impacts of the project on the landscape values identified in the Planning Scheme.

It is not clear to the Panel how Mr Schutt applied his criteria and arrived at his determined ratings of the visual impact from some viewpoints. For example, Mr Schutt assessed the visual impact from Viewpoint 8 as 'moderate', stating that the turbines are "*not visually dominant*" and that the visual presence of the turbines when viewed from this location "*does not alter nor diminish the visual contribution made to this view by 'preferred landscape features' [such as]… agricultural landscapes, agricultural patterns and the presence of vegetation in and around paddocks".*

The Panel is not persuaded that this is the case. In the Panel's view, Photomontage 8 (extracted in Figure 5 above) demonstrates that the turbines would be a major element in the landscape, more dominant than (and incongruous with) other elements more typically found in a rural landscape such as fences and farm buildings. Applying Mr Schutt's criteria, the Panel considers that the impacts demonstrated in Photomontage 8 should be rated as 'substantial' rather than 'moderate'.

The community expressed some doubt as to the accuracy of the photomontages, submitting that in some cases they appear to 'flatten' the surrounding topography and underestimate the size (in particular the height) of the turbines when compared with existing features such as the lattice towers supporting the 220kV transmission lines.

In response to questions from the Panel, Mr Schutt confirmed that 'ground truthing' exercises have been undertaken where photomontages prepared before a wind farm is constructed are compared with the actual views of the wind farm once it is constructed. His evidence was that this had confirmed the technical accuracy of photomontages. He did however acknowledge that photomontages cannot recreate the human experience of looking at a wind farm. For example, photomontages necessarily represent a static view of the turbines whereas when viewed in real life, they are generally moving which 'draws the eye'. On the other hand, Mr Schutt noted that photomontages assume the turbines are oriented so that the blades are all fully facing the viewer, whereas in reality they are often viewed side on and present a much slimmer element in the landscape.

The Panel accepts that photomontages are generally technically accurate in representing views of the project from the selected viewpoints, and can be a valuable tool in assessing the visual impact of turbines on a landscape. That said, they only represent certain views of the

project, from certain viewpoints, and in certain conditions. There may be other viewpoints from which the impacts of the project will be higher than as suggested by the montages (for example locations along roadsides with less vegetation screening views to the site). The turbines may be more visible in different conditions, for example in clear conditions against a brilliant blue sky.

For these reasons, photomontages alone do not necessarily represent an accurate and complete picture of the visual impact of a wind farm. Other mechanisms are needed to fully assess visual impact, including a properly prepared landscape and visual impact assessment, and visual inspections from carefully selected sites.

The Panel agrees with the community that the Landscape and Visual Impact Assessment should not have been limited to non-stakeholder dwellings within 3kms of the site. The turbines will be a prominent feature at distances significantly greater than 3kms. The Panel considers that impacts on non-stakeholder dwellings should have been assessed to a distance of at least 5kms.

The Panel agrees with the National Trust that engaging with the community and understanding the value it places on the local landscapes, and why, is a key part of a properly prepared landscape and visual impact assessment. This is supported by the Community Engagement and Benefit Sharing Guide. Neither the Proponent nor Hansen Partnership engaged with the community at all about its perceptions of the landscape. This was a key failing in the methodology of the Landscape and Visual Impact Assessment.

The Panel is concerned with other aspects of the methodology or conclusions of the Landscape and Visual Impact Assessment and evidence, including Mr Schutt's assessment of the landscape values of the site and surrounding area, how his assessment of landscape value is factored into his assessment of visual impact, the lack of site inspections of non-stakeholder dwellings, and the lack of weighting of impacts on views from private dwellings. These issues are addressed in more detail in Chapters 4.5 and 4.6.

4.5 Landscape value

Many of the submitters questioned Mr Schutt's assessment of Mount Pollock as part of the moderate value Volcanic Uplands rather than the higher value Volcanic Cones (referring to Mr Schutt's classifications, rather than those in the Planning Scheme). Mr Schutt considered that Mount Pollock is considerably flatter than other volcanic cones in the area, and lacks a distinctive crater shape that made it readily identifiable as a volcanic cone. That said, in response to questions from the National Trust, Mr Schutt clarified that the Landscape and Visual Impact Assessment took a precinct-based approach, and concluding that Mount Pollock forms part of the Volcanic Uplands landscape character unit did not necessarily involve a conclusion that it was not a volcanic cone.

Submitters indicated that the intersection of Gnarwarre Road and Callemondah Road, directly east of the site, provides a good view of Mount Pollock from where its value and significance as a landscape feature can be better understood. Mr Schutt did not directly consider views of Mount Pollock from this location in either the Landscape and Visual Impact Assessment or his expert witness statement. The Panel viewed Mount Pollock from this intersection on its second site visit. The Panel agrees with submitters that viewed from this

location, Mount Pollock clearly reads as a volcanic cone with a distinct crater – more so than when viewed from the north or west.

DELWP twice requested an additional photomontage from a viewpoint to the east of the site when assessing the application prior to the commencement of statutory notice. The Proponent did not provide an additional photomontage from a viewpoint to the east. The intersection of Gnarwarre Road and Callemondah Road would have been a suitable and useful location for a photomontage demonstrating the visual impact of the project when viewed from the east.

Having considered the Landscape and Visual Impact Assessment, the submissions, the various landscape studies referred to in Chapter 4.2 and the Panel's own observations on its site visits, the Panel accepts Mr Schutt's assessment of the value of the Winchelsea Plains landscape character unit (which he describes as the Volcanic Plains) as 'moderate'. However it considers that the value of Mount Pollock as an element in the landscape may be somewhat higher than 'moderate', especially when viewed from the east. The Panel also considers that the landscape value of the Barrabool Hills (described by Mr Schutt as forming part of the Volcanic Uplands landscape unit) is higher than 'moderate'. Clause 21.06 distinguishes the Barrabool Hills from the adjacent Winchelsea Plains, and notes that the National Trust has classified it as regionally significant for its aesthetic value (as well as its geological, geomorphological and cultural heritage value).

It is not clear to the Panel how Mr Schutt's rating of the landscape value impacted on his overall assessment of visual impact. He appears to have considered whether the presence of the turbines in the landscape will alter or diminish 'preferred landscape features', and whether the turbines constitute 'least preferred landscape features', without reference to landscape value. Nor do the criteria for assessing visual impact described in Section 5.3 of the Landscape and Visual Impact Assessment refer to landscape values. Landscape value only seems to become relevant when assessing whether mitigation is required. For example, the Landscape and Visual Impact Assessment concludes at page 34:

> On the basis that the visual impact of the proposed wind farm at Viewpoint 1 is limited, and the relative value of the landscape typology within which it is viewed is moderate, mitigation measures are considered unnecessary.

The Panel considers that landscape value should be factored into the assessment of visual impact, not just in whether or not mitigation is required. For example, the same level of visual intrusion into a higher value landscape will have a higher overall visual impact than in a lower value landscape.

4.6 Impacts on private dwellings

The application requirements in Clause 52.32-4 include a site and context analysis which assesses views to and from the site, including views from existing dwellings (as well as key public vantage points such as major roads, walking tracks, tourist routes and regional population growth corridors).

Mr Schutt's evidence was that he assessed the impacts on existing dwellings by 'benchmarking' against photomontages from nearby locations. In response to questions from submitters, he explained that he had not prepared photomontages from non-

stakeholder dwellings because his brief from the Proponent did not request or require any assessment from private land. This instruction from the Proponent, assuming it was conveyed accurately by Mr Schutt, is directly contradictory to the requirements of Clause 52.32, which explicitly require an assessment of views from existing dwellings.

Mr Schutt's evidence was that viewpoints on private land are less representative than publicly accessible viewpoints because there would be fewer viewers on private land. However, he acknowledged in responding to questions from the Panel that the impacts on nearby landowners could be more significant as they tend to value the views from their homes more highly than members of the public such as road users. He also acknowledged that private landowners are exposed to the views for longer periods of time than passers-by, but he was not aware of any methodology for factoring this into an assessment of visual impact.

The Panel does not consider that Mr Schutt's 'benchmarking' exercise was an adequate or appropriate basis to draw conclusions on the visual impacts on private dwellings. Several of the dwellings are located a long way from the roads (with driveways of up to 1.5kms), and the Panel observed on its second site inspection that views of the site from dwellings were in some cases completely different to, and will be more impacted than, the views from nearby driveways or roads.

Many of the houses visited by the Panel have been built directly facing Mount Pollock, to take advantage of the views of the Mount as a distinctive landscape feature. In some cases, living rooms face directly towards the site. In others, back patios and decks have been built looking over Mount Pollock. These views will be significantly impacted by the turbines, which straddle both sides of Mount Pollock. This would not have been apparent to Mr Schutt, as he did not (and was not instructed to) inspect the houses and gardens of nearby residents.

The impacts on the dwellings at 165 Mount Pollock Road and 310 Mount Pollock Road are likely to be particularly severe. The house at 310 Mount Pollock Road is 1.1kms from the nearest turbine, oriented toward the site with clear uninterrupted views of Mount Pollock. The house at 165 Mount Pollock Road is slightly further from the turbines, but is built on high ground with clear uninterrupted views of Mount Pollock. These properties have little to no screening provided by existing vegetation, and in both cases, the land toward the site falls away from the dwellings, reducing the ability to screen views of the turbines with future landscaping.

Impacts on dwellings further to the south, west and north of the project will also be significant, although some relief is provided by distance. Landscape screening is likely to be more effective at these properties due to the availability of flatter land between the dwellings and the site on which landscaping screening can be provided.

The Panel does not accept Mr Schutt's evidence that the additional impact on private landowners cannot be factored into the assessment of visual impacts. Other landscape and visual impact assessments of wind farms deal with this issue by ascribing a landscape value of 'high' to any views from private dwellings, in recognition of the special value of a view to the people that live there, and the fact that they are not able to reduce or avoid their exposure to the turbines from those viewpoints like a passing road user is able to do. This

should have been built into the methodology of the Landscape and Visual Impact Assessment.

4.7 Cumulative impacts

The Panel is not persuaded by Mr Schutt's opinion that cumulative impacts only occur when a wind farm reads as a continuous element in the landscape when viewed together with neighbouring wind farms. It sees no justification for that interpretation in the Wind Farm Guidelines or in Clause 52.32. That said, the Panel accepts Mr Schutt's evidence that due to the relatively small number of turbines, and the substantial distance between the project and other much larger wind farms in the area, the cumulative impacts of the project are likely to be minimal.

4.8 Visual impact of associated infrastructure

Neither the Landscape and Visual Impact Assessment nor Mr Schutt's expert witness statement assessed the visual impacts of ancillary infrastructure such as the substation, operations and maintenance building or overhead cabling required to connect the project to the national grid. DELWP explained that it prefers applications for renewable energy facilities to include details of all required infrastructure, including connecting infrastructure, to enable a holistic assessment of the visual (and other) impacts of all the necessary elements of the proposal.

In response to directions and questions from the Panel, the Proponent explained that the connection into the grid has not been resolved. Two options are under consideration – a connection directly into the 220kV transmission line traversing the site, and a connection to one of the 66kV power lines in the vicinity. Connections are subject to approval from the Australian Energy Market Operator and the owner of the grid infrastructure (in this case, Powercor). The application plans therefore show two possible locations for the substation – Option 1 directly adjacent to the 220kV transmission line near the proposed location of Turbine 10, the other adjacent to the site entrance along Gnarwarre Road.

The Panel requested the Proponent to provide example images of the types of infrastructure that would be required under both options. Documents 28 and 46 provide indicative images of the infrastructure required.

DELWP provided maps which show the approximate distances to possible 66kV connection points into the grid (Documents 41 and 45). These threw some doubt on the Proponent's assertions that 66kV connections were available not far from the site, in Gnarwarre Road or Peels Road. At the Panel's request, the Proponent clarified (in Document 52) that the connection points previously referred to by the Proponent in Gnarwarre Road and Peels Road are in fact on 22kV powerlines, and therefore unsuitable as connection points (which must be at least 66kV), unless they are upgraded.

Documents 28, 41, 45, 46 and 52 collectively demonstrate that the substation and infrastructure required to connect the project to the grid is likely to have additional visual impacts. Landscaping could be employed to screen the substation, but opportunities to screen overhead powerlines may be limited. The closest 66kV lines are some distance from the site, much further than the connection points in Gnarwarre and Peels Road initially

indicated by the Proponent. If connection will be via the 66kV lines rather than the 220kV lines, a considerable amount of overhead cabling is likely to be required.

Council's concern in relation to the regulatory gap for powerlines required to connect wind farms to the grid has now been addressed with Amendment VC157, discussed in Chapter 2.4(iv). The connecting powerlines and substation will now require a separate permit. That permit application will be subject to a public process, and will enable a separate assessment, by Council, of the visual impacts of the connecting infrastructure.

The Panel considers that, without landscape screening, the solar panels would be visible from many locations, and would be out of character with the nature and scale of other farm-related infrastructure in the landscape. This could impact on the aesthetic value of the surrounding landscape. That said, the Panel is satisfied that the panels can be effectively screened with landscaping.

The Panel expresses no particular view on whether Option 1 or Option 2 would be a preferred location for the substation from a visual impact perspective. Either location will have visual impacts – Option 1 will impact on views from the south and east, and Option 2 will impact on views from the north. Option 2 will require substantially more overhead cabling than Option 1, and may be a less preferred option for that reason.

The Panel has found in Chapter 3.2 that the battery storage facility is not included in the applications. If the Proponent wishes to include battery storage, separate permission will need to be sought which will allow for an assessment of the visual impacts of any battery storage facility.

4.9 Landscape mitigation

Mr Schutt's evidence was that for visual impacts assessed as 'moderate' or lower, mitigation is generally unnecessary and should be assessed on a case by case basis. His evidence was that none of the impacts are so significant as to require mitigation, but noted that off-site mitigation is generally required in permit conditions and could be offered to the five non-stakeholder dwellings he identified as being moderately impacted.

There was some debate at the Hearing as to the distance to which off-site landscape mitigation should be required. Mr Schutt considered that the Proponent should be required to offer off-site landscape mitigation in respect of non-stakeholder dwellings within 2kms of the nearest turbine (a total of 4 dwellings). He considered that the visual scale of the turbines would be acceptable when viewed from a distance of 2kms, although he did concede that he could not be definitive about whether landscape mitigation should be offered at private dwellings up to any particular distance, because he had not visited any private dwellings.

The Panel accepts that for viewers moving through the landscape and viewing the project from public viewpoints for limited periods of time, the scale of the turbines at a distance of 2kms may be acceptable. It does not, however, accept that this is the case for non-stakeholder dwellings. At a distance of 2kms, the turbines will be a major (and in most cases unwelcome) intrusion in the landscape. The Panel has found that the visual impact of the turbines at these locations will be considerably higher than Mr Schutt has estimated, for the reasons set out in Chapter 4.6.

DELWP provided a table summarising the off-site landscape mitigation requirements in a number of Victorian wind farm permits (Document 42), which provides a useful point of comparison against Mr Schutt's recommendation of off-site landscape mitigation to a distance of 2kms. According to Document 42, for wind farms with turbines higher than 180m, off-site mitigation is generally required to a distance of 3-5kms. Examples include Berrybank (4kms), Berrimal (5kms), Bulgana (3kms), Diapur (4kms), Dundonnell (4kms), Ferguson (4.6kms), Golden Plains (5kms), Jung (4kms), Kiata (5kms), Mortlake South (4kms), Murra Warra (5kms), Rifle Butts (4kms) and Ryan Corner (4kms plus additional requirements specified). Several wind farms with lower turbines also have off-site mitigation requirements to a distance of 3, 4 or 5kms.

While the Panel accepts that each project must be assessed on its merits, the Panel sees no reason why the off-site landscaping mitigation required for this project should necessarily be any less rigorous than the requirements applying to other projects. Given the height of the turbines, their siting on the slopes of Mount Pollock and their likely impact on the surrounding landscape, particularly views from nearby dwellings, the Panel considers that off-site landscape mitigation should be required to a distance of 4-5kms.

Submitters commented that the Proponent has so far failed to identify all existing dwellings within 4kms of the turbines. DELWP pointed out that an accurate identification of dwellings would be important if a permit were to be granted. The Panel agrees, and considers that a condition should be included requiring the Proponent to identify all dwellings within 5kms of the turbines to the satisfaction of Council.

4.10 The Panel's overall assessment of visual impacts

The Wind Farm Guidelines and Clause 52.32 require the Panel to consider planning scheme objectives for the landscape, including whether the land is recognised in the Scheme as having particular landscape value or significance.

The fact that the site is not protected by a Significant Landscape Overlay does not mean that landscape protection measures are not relevant. The landscape objectives and strategies set out in the Scheme and the Rural Strategy generally seek to protect and maintain the open rural landscape, including vistas from main road corridors. They seek to ensure that new development is modest in scale, and nestles into the landscape.

It is difficult to see how the visual impact of the project, particularly the turbines, could be considered consistent with these objectives and strategies. The photomontages demonstrate that the turbines will be clearly visible from a number of viewpoints around the site, particularly to the north, west and south where the land is generally flatter and little screening is offered by intervening topography. The wind farm will also be clearly visible from some viewpoints to the east, although other more distant viewpoints to the east will be screened by the topography of the Barrabool Hills. While views from some locations are screened by roadside or other vegetation, many locations, and surrounding properties, will not be screened by vegetation.

The Panel accepts that there may not be consistently high viewer numbers from non-stakeholder dwellings. However it does not agree with Mr Schutt's conclusions that visual impacts on dwellings within 2-3kms of the nearest turbine will be between 'limited' and

'moderate'. No weighting or allowance has been made for the more significant impacts on private landowners than passing road users. As discussed in Chapter 4.6 above, the Panel regards this as a flaw in the methodology of the Landscape and Visual Impact Assessment, resulting in an underestimation of the level of visual impact on private dwellings – particularly those at 165 Mount Pollock Road and 310 Mount Pollock Road.

However, the Panel must balance the landscape objectives, and the impacts on private dwellings, against a range of policy considerations, including those supporting renewable energy. It must assess the landscape and visual impacts of the project objectively, on the basis of the landscape values of the area as reflected in the Planning Scheme.

Neither the site itself nor the surrounding areas, including the Barrabool Hills are subject to an overlay that recognises or protects landscape values. While Clause 21.06 (Rural landscape) recognises that the Shire's landscapes in general make an important contribution to amenity, lifestyle and tourism, it does not specifically afford the landscapes around the site any special status or protection.

The National Trust classification of the Barrabool Hills identifies a number of significant features and landscape values of the area, including its scenic quality, intactness and associations with both Indigenous and non-Indigenous people. However, the Panel is not able to place significant weight on the National Trust's classification, as it is not translated into specific protections or policies in the Scheme (other than being referenced in Clause 21.06). As Council explained, a deliberate decision was taken not to do so.

Several submitters, including the National Trust, asked the Panel to consider whether the turbines on the slopes of Mount Pollock should be removed. Mount Pollock is highly valued by the local community as a landscape feature, and these turbines probably have the highest visual impact, being located on higher ground. At the Hearing, the Panel explored the implications of removing these turbines with the Proponent. Mr Wilson (for the Proponent) indicated that this would make the project unviable.

The visual impacts of the wind farm are more significant than the Landscape and Visual Impact Assessment concludes, particularly the impacts on private dwellings. However, on balance, the Panel finds that they are not so severe as to justify refusing the wind farm permit application. The lack of any specific recognition or protections of the local landscape in the Scheme is an important factor in the Panel's conclusions, as is the strong policy support for renewable energy.

The Panel does not accept Mr Schutt's evidence that off-site landscape mitigation should be limited to non-stakeholder dwellings within 2kms of a turbine. The impacts on landowners, particularly those closer to the site, requires a far more considered response than that suggested by Mr Schutt. These residents will, after all, be directly impacted by the project, in some cases severely, but have been offered little or no opportunity by the Proponent to directly share in its benefits.

The Panel considers that the visual impacts of the solar panels and the substation should have been assessed in the application material. Nevertheless, it accepts Mr Schutt's evidence that the visual impacts of the solar panels and the substation can be mitigated to an acceptable level by landscape screening.

It is most disappointing that the Proponent did not engage with non-stakeholder residents more respectfully and constructively in relation to their very legitimate concerns over landscape and visual impact. As noted in the Community Engagement and Benefit Sharing Guide and by the National Trust, allowing the community to share their thoughts on the local landscape, what it means to them, and what the perceived impacts of the project may be is an important part of building community acceptance of a project. A properly prepared landscape and visual impact assessment, prepared on the basis of constructive and respectful engagement with the impacted landowners, may well have gone some way to reducing the level of concern over the project.

The Panel considers that, to ameliorate the visual impacts of the project, off-site landscape mitigation should be offered to affected non-stakeholder dwellings within 5kms of the site. Other measures are required to address the impacts on nearby residents. Some nearby residents have requested photomontages from their properties, so that they can get a better understanding of the visual impacts that they are likely to face from the turbines. These requests are perfectly reasonable and understandable, and the Panel urges the Proponent to agree to them. It also urges the Proponent to consider whether some form of compensation or benefit sharing package should be offered to non-stakeholder properties within 2-3kms of the site. This is discussed in more detail in Chapter 8.4.

4.11 Conclusions and recommendations

The Panel has some significant concerns with the Landscape and Visual Impact Assessment and the Proponent's lack of engagement with the community in relation to landscape and visual impacts. However, on balance, the Panel concludes that on the basis of an objective assessment, the visual impacts of the project are not so severe as to justify refusing the permit applications.

Specifically, the Panel concludes:

- Photomontages are a useful tool in assessing the visual impact of a wind farm, but they cannot reflect the true human experience of viewing a wind farm in operation.
- While the overall methodology of the Landscape and Visual Impact Assessment is generally appropriate, the Panel has some significant concerns with particular aspects of the methodology:
  - The Assessment should have included consultation and engagement with the community in relation to the local landscape, what it means to them, what the perceived impacts of the project may be on the local landscape values, and how they might be mitigated through project design.
  - Landscape value has not been appropriately factored into the assessment of visual impact.
  - Impacts on private dwellings should have been assessed directly, rather than extrapolating from photomontages at nearby roadsides or driveways.
  - The assessment of visual impacts on non-stakeholder dwellings should have extended further than 3kms from a turbine.
- The Panel is not persuaded by some of the findings and conclusions in the Landscape and Visual Impact Assessment. In particular:

  - The value of Mount Pollock as an element in the landscape, especially when viewed from the east, may be higher than 'moderate'.
  - The value of the Barrabool Hills is higher than 'moderate'.
  - Impacts on these landscape elements and character units are likely to have been underestimated.
  - Impacts on non-stakeholder dwellings, particularly those within 2-3kms of the nearest turbine, have been underestimated.
  - The Panel does not accept that off-site landscape mitigation is not warranted, or that it should be limited to within 2kms of a turbine.
- If the project proceeds, landscape mitigation should be offered to non-stakeholder dwellings within 5kms of the nearest turbine.
- An assessment of the visual impacts of the solar panels and the substation should have been included as part of the application material. Nevertheless, the visual impacts of these elements can be mitigated to an acceptable level by landscape screening.
- The project will not have a significant cumulative impact with other wind farms in the area.

The Panel recommends:

If a permit for the wind farm issues, include conditions requiring:

a) a plan accurately identifying all non-stakeholder dwellings within 5kms of a turbine, to the satisfaction of Surf Coast Shire Council

b) off-site landscape mitigation to be offered to affected non-stakeholder dwellings within 5kms of the nearest turbine, to the satisfaction of the Responsible Authority

c) landscape screening of the substation and other buildings to the satisfaction of the Responsible Authority.

If a permit for the solar farm issues, include a condition requiring landscape screening of the solar panels, the substation and other structures to the satisfaction of the Responsible Authority.

Further, the Panel urges the Proponent to give proper consideration to requests for photomontages from private property, and some form of compensation or benefit sharing package for non-stakeholder properties within 2-3kms of the site who will be significantly visually impacted by the project. Formal recommendations in relation to these matters are, however, beyond the Panel's remit.

5 Noise impacts

Wind farms generate noise in the surrounding environment, both through the mechanical operation of the turbines (for example, gearboxes), and through the movement of the turbines through the air. The solar farm and ancillary infrastructure such as the substation can also generate noise.

5.1 The issues

The issues are:

- inadequate and inaccurate assessment of potential noise levels and impacts, including a lack of background noise monitoring undertaken prior to the applications being lodged
- whether a high amenity limit applies
- lack of consideration of low frequency sound and infrasound.

5.2 Relevant policies, strategies and studies

(i) Clause 52.32

Clause 52.32 specifies that operational noise associated with new wind farms must be assessed against and comply with New Zealand Standard *NZS6808:2010 Acoustics–Wind farm noise* (the New Zealand Standard) throughout the life of the project. Clause 52.32-4 specifically requires the design response to include an assessment of whether a high amenity noise limit is applicable, as assessed under Section 5.3 of the Standard.

(ii) The New Zealand Standard

The New Zealand Standard states that wind farms must comply with the following noise limits:

- general limit – 40 dB(A) L_{A90}, or the background sound level plus 5 dB, whichever is the greater
- high amenity limit – 35(A) dB L_{A90}, or the background sound level plus 5 dB, whichever is the greater.

The general limit applies at all times and in all conditions. The high amenity limit applies up to a maximum wind speed threshold.

(iii) Other relevant guidelines

Operational noise associated with ancillary infrastructure such as the substation must comply with *EPA Publication 1411 Noise from Industry in Regional Victoria,* October 2011 (NIRV). NIRV recommends an effective night time noise limit of 34 dB(A) L_{eq} for noise from transformers at noise-sensitive locations where both the source and receiver are in a Farming Zone. Noise emissions from the solar farm will also need to comply with NIRV.

Construction noise must comply with *EPA Publication 1254 Noise Control Guidelines*, October 2008, supplemented by relevant guidance.

5.3 Evidence and submissions

(i) The Noise Assessment

The permit applications were accompanied by an Environmental Noise Assessment prepared by Resonate Acoustics dated 24 January 2018 (the Noise Assessment). The Noise Assessment was authored by Mr Evans, who was called by the Proponent to give expert evidence at the Hearing. The applications were also accompanied by a Preliminary Environmental Noise Assessment Peer Review by Infotech Research, dated 12 January 2018. It is not clear why the Infotech peer review pre-dates the Noise Assessment. The Panel assumes that Infotech peer reviewed an earlier revision of the Noise Assessment.

The Noise Assessment concluded:

- Predicted noise levels from the turbines for all non-stakeholder sensitive receivers are 35 dB(A) or lower, which is lower than the base noise limit of 40 dB(A).
- Predicted noise levels from the turbines at all stakeholder dwellings are 40 dB(A) or lower, which is lower than the recommended target of 45 dB(A).
- Based on an 80 MVA transformer installed at the substation locations, the maximum noise level due to the substation is predicted to be 9 dB(A) L_{eq} at any receptor, which is well below the night time noise limit of 34 dB(A) L_{eq} recommended in NIRV.

The noise contour map for turbine noise in shown in Figure 7 below.

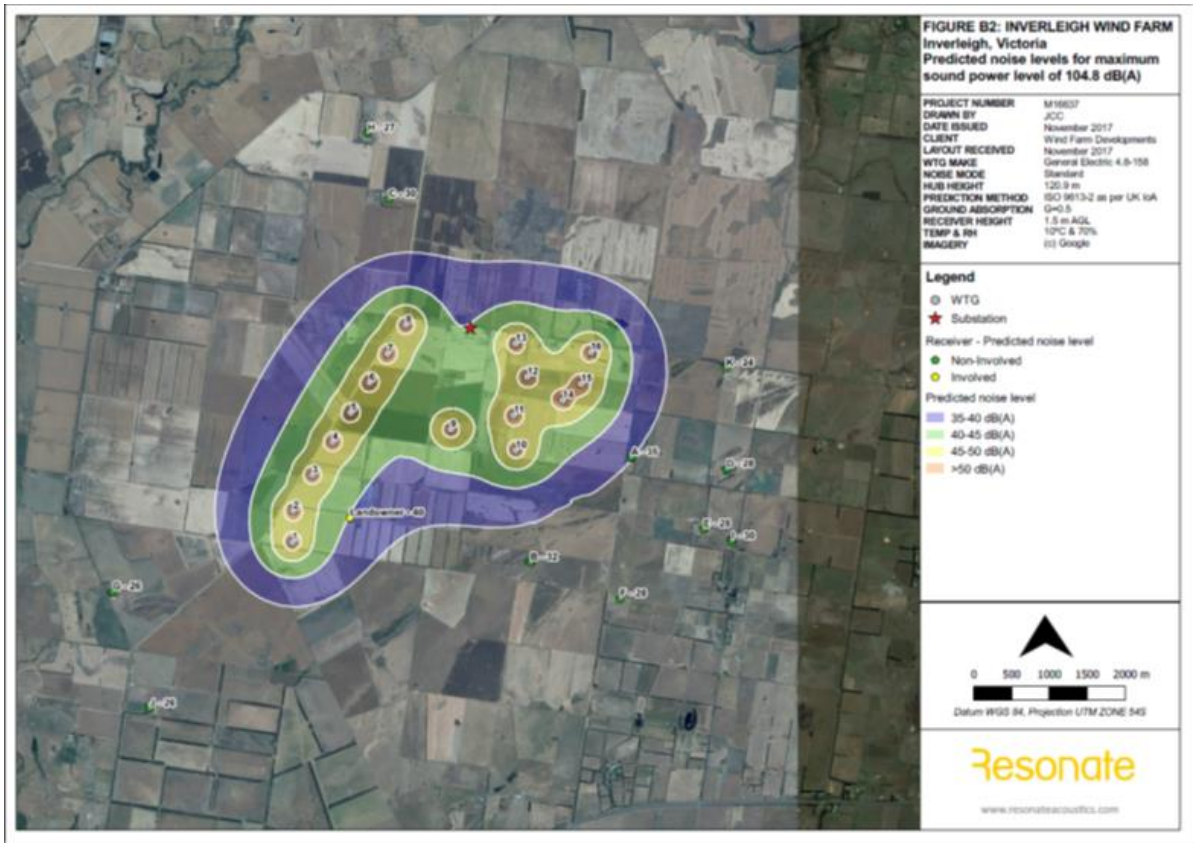

Figure 7 Predicted wind turbine noise levels for maximum sound power level of 104.8 dB(A)
Source: Figure B2 from the Noise Assessment

The Noise Assessment was based on the candidate wind turbine model GE 4.8-158 WTG, utilising the highest specified sound power level at any wind speed. It included an additional 0.8 dB uncertainty factor to account for potential variations in sound power level which may occur in installed turbines. The Assessment used the ISO 9613-2[5] prediction algorithm as implemented in SoundPlan Version 7.4 environmental noise prediction software. Mr Evans stated in his expert witness report (Document 21) that the predictions in the Noise Assessment included adjustments consistent with the recommendations of the UK Institute of Acoustics Good Practice Guide[6] for wind turbine noise.

The Noise Assessment did not include background noise monitoring, so predictions were made against the base limit of 40 dB(A) rather than the 'background plus 5 dB(A)' limit.

The Noise Assessment concluded that, based on the VCAT determination for the Cherry Tree Wind Farm proposal[7], the high amenity noise limit does not apply because the Planning Scheme does not envisage a higher level of amenity for the site and surrounding land.

The Noise Assessment recommended pre- and post-construction noise monitoring at one location (House A, which is at 85 Mount Pollock Road), to confirm that the wind farm is meeting the noise limits. The Infotech peer review recommended monitoring at two additional locations (House B, at 310 Mount Pollock Road, and House C, in Gnarwarre Road). Mr Evans agreed that this would be appropriate in his expert witness report.

The Noise Assessment did not assess noise from the solar farm.

(ii) The Proponent

Relying on the Noise Assessment and the evidence of Mr Evans, the Proponent submitted that the Panel should find that the noise impacts of the project are acceptable. It submitted that the Noise Assessment demonstrates that the predicted wind farm noise levels "*comfortably comply*" with the New Zealand Standard. Further, the draft permit conditions provide for testing before and after construction that will ensure project will meet the limits in the New Zealand Standard and the Planning Scheme. It submitted that low frequency noise and special audible characteristics can be appropriately managed or controlled through post construction testing and mitigation if required. Infrasound is not generated by turbines at high enough power levels to be perceived.

Mr Evans' evidence was that the prediction methodology in the Noise Assessment was consistent with good practice for wind turbine noise predictions in Australia, and that pre-construction noise predictions have been found to be accurate when compared with post-construction noise measurements at other operating wind farms in Australia. The predictions were conducted using SoundPlan version 7.4 software, which was the latest

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5 International Standard ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors, Part 2: General method of calculation*.

6 Institute of Acoustics, 2013, *A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*.

7 *Cherry Tree Wind Farm Pty Ltd v Mitchell Shire Council & Ors* (Red Dot) [2013] VCAT 521.

version available at the time that the Noise Assessment was undertaken. Mr Evans reran the predictions using the latest SoundPlan version 8.1 software, and found no change to the predicted noise levels at any dwelling. His evidence was that the predictions are inherently conservative, as they assume all receptors are downwind whereas in reality some receptors will be upwind and crosswind, depending on the wind conditions.

In relation to background noise monitoring, Mr Evans stated that the Proponent had elected not to undertake background noise monitoring prior to lodging the wind farm permit application because hub height wind speed data would not have been available at the time. He noted that the project is expected to comply with the base limits in the New Zealand Standard in any event, and therefore it was not necessary to conduct background noise monitoring to determine whether the predicted noise levels complied with the Standard as part of the application.

In relation to noise from associated infrastructure such as the substation, Mr Evans noted that the Noise Assessment assumed the NIRV night time limit of 34 dB(A) applied throughout the day. His evidence was that higher noise limits apply during the day under NIRV, but as the transformers will operate 24 hours a day, he considered that it is appropriate to apply the recommended night limit, as compliance at night time will ensure compliance at other times of day.

While the Noise Assessment did not assess noise from the solar farm, Mr Evans stated that in his experience, operational noise from solar farms is markedly lower than that from wind farms. As the solar farm would be located within the wind farm area, he did not expect that the solar farm would result in noise levels at residential locations exceeding the NIRV noise limits.

(iii) DELWP

DELWP noted that the Noise Assessment predicted that wind farm noise would meet the noise limits in the New Zealand Standard, and that noise from the proposed substation is expected to comply with the limits in NIRV. DELWP submitted that it was reasonable for wind farm noise to be predicted with the assumption that no penalties for special audible characteristics would apply. It noted that micro-siting of turbines, or final turbine selection, could result in changes to the predicted noise levels, but that changes would be expected to be relatively small. DELWP submitted that solar farm noise can be appropriately managed through a condition requiring compliance with NIRV.

(iv) The community

The community raised several concerns about the noise from the project, in particular turbine noise. They submitted that noise from other wind farms can be heard up to 9kms away, and noise from the project would disturb their quiet enjoyment of their homes and the area. Several submitters considered that the surrounding area is a high amenity area, particularly the area to the east of the site, which they characterise as more of a rural lifestyle area than a broadacre farming area.

They were concerned with various aspects of the noise prediction methodology, including that the noise predictions were based on candidate turbines, and did not take account of the

effects of multiple turbines including wake and turbulence effects. They were concerned that there had not been adequate assessment of low frequency noise and infrasound, or special audible characteristics.

Submitters were also concerned that it would be difficult to monitor and confirm compliance with the noise limits once the wind farm is operating. They were concerned that if non-compliances were found to have occurred, it would be difficult for the community to ensure that the operator was required to bring the wind farm into compliance.

The Gnarwarre Community Association called Mr Huson to give expert evidence in relation to noise. His expert witness report is Document 22. Mr Huson's evidence critiqued the Noise Assessment and the peer review prepared by Infotech.

In summary, Mr Huson concluded that the application was premature. His evidence was that the noise predictions in the Noise Assessment should have been based on the actual turbine that will be installed, rather than a candidate turbine. He considered that the Noise Assessment should have included test results for the particular turbine model, and a statement by the manufacturer that the proposed layout is suitable for that turbine. This is because wind turbines can create wake effects (turbulence), which can amplify the noise from the turbines. This was not considered in the Noise Assessment.

Mr Huson considered that at least one background survey should have been completed to set target noise limits, that would also assist in objectively assessing whether the area was a high amenity area in which the high amenity limit should apply. His evidence was that the area should be characterised as a high amenity area, based on a recent decision of nine New Zealand Commissioners (more recent than the Cherry Tree decision) which found that a particular 'Rural Residential' area in Palmerston North is intended to have high amenity under the relevant New Zealand planning instrument.

Mr Huson argued that a high amenity limit should apply to the area surrounding the site because (among other things) it contains a number of residences; NIRV recognises that rural areas are typically quiet; NIRV applies recommended limits of 41 dB(A) in the evening and 36 dB(A) at night in rural areas; and NIRV recognises that while the NIRV limits are intended to provide a reasonable level of protection, there may be some rural areas where change is inappropriate and the acoustic environment should be preserved. He concluded:

> In summary, a reasonable noise amenity in the farming zone (FZ) for general types of industrial and farming use is suggested by the EPA to be achieved if an acoustic environment of 36 dBA, Leq at Night and 41 dBA, Leq in the Evening is met. These guideline acoustic amenity recommendations for dwellings in the farming zone (FZ) in Regional Victoria can be converted to the wind farm noise metric of LA90 (LA90 ≈ LAeq-1.8).
>
> This shows that the Evening baseline noise target of 40 dBA, L90 would protect noise amenity in the farming zone but that the more stringent High Amenity Area lower limit provided for in NZS6808 of 35 dBA, L90 is appropriate at Night.

Mr Huson considered that the Noise Assessment, and Mr Evans' evidence, provided a very optimistic assessment. He considered that the noise prediction model used in the Noise Assessment was not sufficiently conservative, including because it was based on an assumed ground absorption factor of G=0.5. Mr Huson considered that ground absorption should be assumed to be G=0. He recommended that the Panel consider a range of optimistic and

conservative predictions and assumptions in its deliberations, and apply a penalty of +6 dB(A) (being midway between optimistic and conservative) to Mr Evans' noise predictions.

(v) The Proponent's response

The Proponent relied on the evidence of Mr Evans in responding to the concerns in objections, and the criticisms of Mr Huson.

Objector concerns

Mr Evans grouped the concerns of objectors and responded to each concern in his expert witness report (Document 21).

Audibility of the turbines

Mr Evans stated that the audibility of wind turbine noise at a residence will depend on a number of factors such as wind turbine noise level, wind direction, wind speed at turbines, wind speed at ground level at the residence, and general background noise level at the residence from other sources. While it is possible for wind turbines to be audible at distances of up to 9kms, he would expect this to be relatively rare. He expected residents will hear noise from the wind farm at times, most likely when downwind of the site at night time, as the background noise level at residences is typically lower at these times. However, at all times the wind farm noise level is expected to be at a level which provides a reasonable level of protection of health and amenity in accordance with the New Zealand Standard.

The predictions did not take account of multiple turbines

Mr Evans confirmed that the noise prediction model used considers the combined predicted noise level from all turbines at the site. He explained that the prediction methodology has been validated against measurements conducted near operating wind farms of various sizes, from a few turbines to many turbines, both in Australia and internationally. This validation has demonstrated that the noise prediction model produces accurate predictions.

Low frequency noise, infrasound and special audible characteristics

Mr Evans addressed concerns about low frequency noise and Special Audible Characteristics including amplitude modulation commonly described as the blade swish or thumping noise. The New Zealand Standard states that a penalty must be applied if excessive amplitude modulation occurs. Mr Evans explained that in his experience, excessive amplitude modulation at Australian wind farms is rare, although he was aware it has been observed on occasion at wind farms in the UK.

The UK Institute of Acoustics has developed a methodology to quantify amplitude modulation and penalise excessive amplitude modulation. Mr Evans explained that in accordance with the New Zealand Standard, the UK Institute of Acoustics methodology or another suitable assessment methodology would be used during any operational noise monitoring to determine if any amplitude modulation special audible characteristic occur. If so, a penalty would be applied to the wind farm noise levels in accordance with the requirements of the New Zealand Standard.

Mr Evans stated that infrasound is not generated by turbines at high enough power levels to be perceived.

Ensuring compliance when the wind farm is operating

Mr Evans stated that in the unlikely event that non-compliance did occur, a noise curtailment strategy could be designed and implemented when the wind farm is operating, to ensure the wind farm noise levels achieve compliance with the New Zealand Standard. The noise curtailment strategy would likely involve automatic control of the blade pitch of one or more turbines, to reduce noise levels under certain conditions (such as in certain wind speeds, wind directions and at certain times of the day). The curtailment strategy would involve reducing the power output of the problematic turbines, and would depend on the predicted exceedance of the noise limit. The effectiveness of any such strategy would need to be verified as part of the post-construction noise monitoring that would be required under a planning permit.

Mr Huson's criticisms

The Proponent summarised Mr Evans' response to Mr Huson's criticisms as follows:

- The criticism that the Noise Assessment should have been based on the actual turbines to be used rather than candidate turbines – Mr Evans responded that the sound power levels adopted in the Noise Assessment are based on the manufacturer's technical documentation. A condition of the permit will require reassessment once the final turbine model has been selected.
- The criticism that the Noise Assessment did not consider turbulence or wake effects based on the proposed layout of the wind farm – Mr Evans responded that the noise modelling methodology he used has been validated by benchmarking noise predictions against measurements from operating turbines. He did not consider that Mr Huson's proposed adjustments for turbulence and ground absorption/reflection are warranted.

In relation to whether a high amenity limit should apply, the Proponent queried Mr Huson's interpretation of the ruling of the New Zealand Commissioners, and noted that according to the Wind Farm Guidelines, Cherry Tree provides the appropriate guidance for Victoria. In any event, the noise levels would probably comply with the high amenity limits as the maximum predicted noise level, at House A, is 35 dB(A).

5.4 Discussion

The Panel accepts the evidence of Mr Evans that the noise predictions were consistent with good practice for wind turbine noise predictions in Australia. The Noise Assessment was based on a methodology that is generally accepted in the industry in Australia. Wind farm noise predictions based on this generally accepted methodology have been found on multiple occasions to be accurate, when compared with the results of post-construction noise monitoring at operational wind farms around Australia. The Panel was not persuaded that there is any justification for Mr Huson's recommendation to apply a penalty of +6dB to the predicted noise levels.

The Panel is not persuaded that a high amenity noise limit should apply. While the Panel acknowledges Mr Huson's evidence, NIRV is not the appropriate basis for determining whether high amenity limits apply in Victoria. The Planning Scheme and the Wind Farm

Guidelines direct that the New Zealand Standard be used to determine whether the high amenity limits should apply.

The Panel acknowledges the community's position that, based on its actual usage, the area is better described as a rural lifestyle area rather than a broadacre farming area. It appears that a number, perhaps even the majority of landowners in the area rely on off-farm sources of income. However the New Zealand Standard requires the Panel to consider whether the Planning Scheme affords the area a higher degree of protection in relation to noise amenity. In other words, the Planning Scheme, and in particular the Farming Zone, sets the expectations for noise amenity in the area, not the surrounding land use patterns.

The Panel acknowledges that there may have been a recent New Zealand decision which suggests that high amenity limits may apply in rural residential areas in New Zealand. However that decision has limited relevance. The Wind Farm Guidelines clearly direct decision-makers in Victoria to the Cherry Tree decision to guide as assessment of whether high amenity limits apply in Victoria. The area surrounding the site is in a Farming Zone. It is not in a Rural Residential Zone. The Cherry Tree decision clearly states that the Farming Zone is not a high amenity area, and high amenity limits will not apply.

The Panel agrees with the recommendations of Infotech and Mr Evans that a pre-Construction Noise Assessment Report must be conducted in accordance with the New Zealand Standard. It should include background noise monitoring at the three locations identified by Mr Evans and Infotech (described in the Noise Assessment as House A, House B and House C) as a minimum, subject to receiving approval from the property owners.

The Panel agrees with Mr Evans that background noise monitoring should include at least 4,032 valid data points for each background noise monitoring site, which is more than the number recommended in the New Zealand Standard. This is consistent with recent recommendations of other wind farm panels, including for the Golden Plains and Stockyard Hill Wind Farms. The Panel agrees with Mr Evans that background noise levels must be separately determined for both all-time periods and for the night time period (10 pm to 7 am).

5.5 Conclusions and recommendation

The Panel concludes:

- The noise predictions in the Noise Assessment are consistent with good practice for wind turbine noise predictions in Australia.
- The pre-construction noise assessment must include background monitoring:
  - conducted at the three locations recommended by Infotech and Mr Evans (House A, House B and House C) as a minimum, subject to approval from the property owners
  - that collects at least 4,032 valid data points for each background noise monitoring site
  - that includes data for both all-time periods and the night time period.

The Panel recommends:

If a permit for the wind farm issues, include conditions requiring pre-construction noise monitoring to be conducted at the locations described as House A, House B and House C in the Environmental Noise Assessment prepared by Resonate Acoustics dated 24 January 2018 as a minimum, subject to approval from the property owners. Background noise monitoring must meet the following requirements:

a) **at least 4,032 valid data points must be collected for each background noise monitoring site**
b) **background noise levels must be separately determined for both all-time periods and for the night time period (10 pm to 7 am).**

6 Aviation safety

Turbines and meteorological masts can pose a safety hazard to aviation. The site is located in an agricultural area that is widely used for cropping and grazing, including aerial agricultural operations. The proposal will be located approximately 2.5kms from the Gnarwarre Aircraft Landing Area (ALA), a nearby privately owned landing strip suitable for light aircraft.

6.1 The issue

The issue is whether the project will have an unacceptable impact on aviation safety, including the safe operation of the Gnarwarre ALA, should it proceed.

6.2 Relevant policies, strategies and studies

(i) Policy

Clause 18.04 of the Planning Scheme relates to airports. The objective of the clause 18.04 is:

> To strengthen the role of Victoria's airports and airfields within the state's economic and transport infrastructure, facilitate their siting and expansion and protect their ongoing operation.

Clause 18.04 includes a strategy to preclude development which could prejudice future extensions of existing airfields in accordance with an approved strategy or master plan.

Consistent with Clause 18.04, Clause 21.05-3 sets out objectives and strategies relating to aviation and airfield management and includes the objective:

> To ensure land use and development in proximity to airfields and helipads does not adversely impact its operation.

(ii) Clause 52.32 and the Wind Farm Guidelines

Clause 52.32 requires the Panel consider the impact of the project on aircraft safety.

The Wind Farm Guidelines require:

- permit applicants to consult with the Civil Aviation Safety Authority (CASA) where proposals are located within 30kms of a declared aerodrome or airfield, infringe the Obstacle Limitation Surface (OLS) around a declared aerodrome, or include buildings or structures higher than 110m above ground level
- decision makers to consider the proximity of the site to airports, aerodromes or landing strips, and ensure that any aircraft safety issues are identified and addressed appropriately.

(iii) Aviation regulations and guidelines

National Airports Safeguarding Framework (NASF) Guideline D[8] states at paragraph 43:

> Wind farm operators should be aware that wind turbines may create turbulence which [is] noticeable up to 16 rotor diameters from the turbine. In the case of one of the larger wind turbines with a diameter of 125 metres, turbulence may be present two kilometres downstream. At this time, the effect of this level of turbulence on aircraft in the vicinity is not known with certainty. However, wind farm operators should be conscious of their duty of care to communicate this risk to aviation operators in the vicinity of the wind farm. CASA will also raise awareness of this risk with representatives of aerial agriculture, sport aviation and general aviation.

Division 2 of Part 11 of the Civil Aviation Regulations 1988 (Cth) contains flight rules. Regulation 157 states:

> **Low flying**
>
> (1) The pilot in command of an aircraft must not fly the aircraft over:
>
> (a) any city, town or populous area at a height lower than 1,000 feet; or
>
> (b) any other area at a height lower than 500 feet.
>
> Penalty: 50 penalty units.
>
> …
>
> (3) A height specified in subregulation (1) is the height above the highest point of the terrain, and any object on it, within a radius of:
>
> (a) in the case of an aircraft other than a helicopter – 600 metres; or
>
> (b) in the case of a helicopter – 300 metres;
>
> from a point on the terrain vertically below the aircraft.
>
> …
>
> (4) Subregulation (1) does not apply if:
>
> (a) through stress of weather or any other unavoidable cause it is essential that a lower height be maintained; or
>
> …
>
> (e) the aircraft is flying in the course of actually taking-off or landing at an aerodrome; or …

6.3 Gnarwarre airfield

Gnarwarre ALA is owned by Andrew Maschmedt. The ALA is a single strip utilising both directions which, by compass, are 60 degrees and 240 degrees magnetic and designated as RWY06 and RWY24 respectively. The strip is 15m wide and has a total length of 970m. The surface is grass that is cut and periodically rolled to allow use by many classes of aircraft from ultralight up to the General Aviation category <5700kg. There is a windsock beside the

[8] National Airports Safeguarding Framework Guideline D Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers, Version 4.1.3, July 2012

runway to the south close to midfield, and a hanger part constructed near the southern end of the landing strip. The airfield is currently designed for daylight operations only.

Figure 8 Aerial photo of Gnarwarre ALA
Source: Aviation Safety Report prepared by Mr Maschmedt, Document 23

According to Mr Maschmedt, Gnarwarre ALA became operational in April 2016 and is used by light aircraft operators. The airfield has an International Civil Aviation Organization (ICAO) code 'YGNE'. It is recorded in the En Route Supplement Australia (ERSA) published by Airservices Australia, and is recognised by CASA.

Mr Maschmedt explained that aircraft using Gnarwarre ALA use a (non-standard) right hand (RH) circuit when taking off and landing from RWY24, and a (standard) left hand (LH) circuit when taking off and landing from RWY06. These circuits take aircraft to the north of the ALA (and toward the proposed turbines), rather than to the south. According to Mr Maschmedt, the reason for this is to avoid the steeper terrain to the south, and to avoid flying over as many houses (the area to the south is more densely populated than the area to the north).

6.4 Evidence and submissions

(i) The Aviation Impact Statement

The wind farm permit application was accompanied by an Aviation Impact Statement prepared by Richard Gower dated 30 May 2018, which broadly concluded that the project presented an acceptable risk to aviation safety. The Aviation Impact Statement was referred to Airservices Australia for review. Airservices Australia provided a response dated 22 January 2018, which also broadly concluded that the project presents an acceptable risk to aviation operations.

Neither the Aviation Impact Statement nor the Airservices Australia response considered Gnarwarre ALA.

(ii) Mr Maschmedt

Mr Maschmedt submitted:

> [Gnarwarre ALA] is used by Geelong Sports Aviators, Antique Aircraft Association, Sports Aircraft Association of Australia, local pilots as an alternate when poor weather prevents landing at their airfields, regional pilot training organisations, local community to meet and have their friends/family fly in and the owners.

Mr Maschmedt highlighted the Geelong Sports Aviators fly-in and end of year BBQ for the Gnarwarre Community Association on 16 December 2018, held at the Gnarwarre ALA. However, he was unable to tell the Panel how often the ALA was used, as he does not currently live there.

Mr Maschmedt prepared an Aviation Safety Report on the Gnarwarre ALA dated 16 August 2018 (Document 23). The report stated that the threat to aviation from windshear and turbulence within 16 rotor diameters of a turbine, and obstacle clearance, are considered in the aviation industry to be major safety issues capable of causing aircraft loss and occupant death. Mr Maschmedt concluded that turbines T4 to T16 produce a hazard to Gnarwarre ALA that, due to the prevailing wind direction and the turbine layout, give rise to intolerable risk with catastrophic outcomes. He submitted:

> The dangers of turbulence and windshear caused by the IWF proposal are unavoidable when the wind comes from south west around to north east (240 ~ 030 degrees). These wind directions are common. Wind shear and turbulence extends 16 time the rotor diameter (16x158=2,528 m) of each [turbine]. The buffer map shows the 2.5km radius (half way between 2km and 3km) out from each [turbine] where turbulence and windshear will reach over the runway. Initial climb is the most critical point of any flight and no flight path can avoid this.

Mr Maschmedt explained at the Hearing that the 16 rotor diameter distance referred to in his Aviation Safety Report and submission was based on NASF Guideline D. The rotor diameter of the proposed turbines is 158m, hence 16 rotor diameters is a distance of 2,528m, which impinges on the Gnarwarre ALA.

(iii) Mr Taberner

Mr Maschmedt called Graham Taberner who did not submit an expert witness statement but did give oral evidence endorsing the comments of Mr Maschmedt in his Aviation Safety Report. He also stated that in the four weeks or so leading up to the Hearing, he used Gnarwarre ALA three to four times a week for flight training lessons. Two of his flight instructors also had been using Gnarwarre ALA about once per week over the same period.

Mr Taberner made the point in oral evidence that 'low and slow' ultralight aircraft are more affected by turbulence so will experience more impact from the turbines.

Much of the debate at the Hearing in relation to the Gnarwarre ALA was in relation to whether LH circuits or RH circuits should be flown from RWY24. A standard LH circuit would take aircraft away from the proposed turbines, whereas the currently used RH circuit would take them toward the turbines.

Mr Taberner stated that he has flown both LH and RH circuits from Gnarwarre ALA and that he had been an assessor for RH circuits when employed by CASA. His view was that it is appropriate to fly RH circuits from RWY24:

- to avoid flying over rising ground to the south of the Gnarwarre ALA on the base leg
- to minimise the number of houses overflown and hence the noise (this is the principle of 'neighbourly flying').

Mr Taberner noted that there was sufficient clearance from the existing 220kV transmission line on take-off for a RH circuit from RWY24, and 'low and slow' ultralight aircraft were capable of a sufficient rate of climb to be at an adequate altitude to clear the transmission line before the end of the runway.

Mr Maschmedt detailed his objections to the conclusions and recommendations of Mr Gower and Mr Preston (discussed below) and submitted:

> Of the three aviation experts giving evidence, Mr Taberner, being a former CASA employee whose responsibilities included the analysis and approval of circuit operations, is the only one qualified to assess circuit operations around airfields. Mr Taberner stated that he would approve RH circuits on runway 24.

(iv) The Proponent

The Proponent called aviation evidence from Mr Gower, author of the Aviation Impact Statement. The Panel directed the Proponent to provide independent evidence peer reviewing Mr Gower's Aviation Impact Statement. It called Stirling Preston for this purpose, although (as discussed below) his evidence went beyond a peer review of Mr Gower's work. Both experts addressed the safety risks to aircraft using the Gnarwarre ALA.

Mr Gower

In response to criticisms that the Aviation Impact Statement had failed to identify Gnarwarre ALA, Mr Gower stated there are literally thousands of ALAs in Australia. A land owner can proclaim that a particular paddock is an ALA without reference to any authority or pass any survey or inspection. ALAs range from an unrecognisable paddock with no markings of any kind to a typical country town aerodrome. Very few private ALAs have an ICAO designator but they can be registered with ICAO and could remain so regardless of whether the ALA has ever actually been used for aircraft operations. The recording of an airfield in ERSA is done solely on application of the airfield owner/operator.

Mr Gower's evidence (Document 17) was that for RWY24 operations, good airmanship would dictate that a standard LH circuit should be flown, to avoid the wind farm and the existing 220kV high voltage transmission line traversing Mount Pollock. He concluded that in the most critical case (RWY06 with a northerly wind), wind farm turbulence could be easily avoided by making the base turn at an appropriate distance from the runway and adopting a RH circuit. He stated:

> Mr Maschmedt's submission is based on using a non-standard RH circuit direction for RWY24 operations which would take traffic over the windfarm and the existing 220kV [transmission] line whereas a standard LH circuit would avoid the existing [transmission] line and wind farm entirely. CASA approval is required for the non-standard circuit direction and inclusion in the En Route Supplement Australia (ERSA) would be required. There is no such RH circuit instruction in the current ERSA entry but it will appear in the February, 2019 issue. It is not known whether a CASA instrument has been issued to permit this.

His evidence was that since the runway is not aligned with the northerly and southerly wind directions, the crosswind component on the runway in these conditions would be 86 per cent of the wind speed. This would severely limit operations at Gnarwarre ALA regardless of the wind farm.

Mr Gower's evidence (Document 17) considered the following risks for aircraft using Gnarwarre ALA:

- collision between aircraft and turbines or wind monitoring masts (anemometer masts)
- collision between aircraft and the ground caused by avoiding obstacles including turbines or monitoring masts
- injury to aircraft crew caused by harsh manoeuvring to avoid obstacles including turbines and monitoring masts
- loss of control of aircraft due to turbulence from turbine wake.

Mr Gower assessed each of these hazards and concluded that the risk was low to very low, provided that planned controls are implemented, that is, aviators adhere to Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) where appropriate, and standard left hand (LH) circuit procedures be adopted to avoid flying over the wind farm. He concluded that the wind farm need not have any significant impact on operations at Gnarwarre ALA.

Mr Gower's evidence was that the project will be located in Class G airspace[9]. Within this airspace, aircraft are permitted to fly to a minimum altitude of 500 feet above ground level under VFR. Under IFR, the minimum altitude is 1,000 feet above the highest obstacle within five nautical miles, except under special conditions, including take-off and landing. These altitudes would take aircraft well above the turbines.

Aviators operating under VFR must be able to see to a distance of 5kms. Mr Gower's evidence was that under VFR, wind farms are easily visible, and aviators can reasonably be expected to navigate around the wind farm boundary. Best practice, as well as legislative requirements, require the publication of wind turbine and wind farm locations on maps to further facilitate avoidance by aviators.

Mr Gower stated that the Aviation Impact Statement was prepared in accordance with NASF Guideline D. While he noted the reference to turbulence effects for a distance of up to 16 rotor diameters in NASF Guideline D, in his experience turbulence would only be problematic at much closer distances of two to three rotor diameters. His evidence was that Mount Pollock is the highest obstacle in the immediate area, at 607 feet above mean sea level. Mount Pollock, which is 232 feet above the elevation of Gnarwarre ALA, would contribute mechanical turbulence to the surroundings in any event.

[9] Airservices Australia website states: Airspace is assigned into categories which determine the level of service provided. In Australia, these range from Class A (typically en route, high level airspace) to Class G (uncontrolled airspace predominantly used by light aircraft) http://www.airservicesaustralia.com/aircraftnoise/aircraft-operations/how-airspace-works/

Mr Preston

Mr Preston concluded that Mr Gower's Aviation Impact Statement contained some small computational errors and a different tip height for the wind turbines, however in his opinion overall it reflected an accurate assessment of the aviation impact posed by the project with respect to NASF Guideline D requirements.

As noted above, Mr Preston's evidence went beyond a peer review of Mr Gower's Aviation Impact Statement. He showed actual flight details of a LH circuit from RWY24 which was flown by one of his staff pilots (Document 31). Based on this evidence, Mr Preston concluded that a standard LH circuit was appropriate, and pilots should follow VFR procedures – that is, fly 500 feet above ground level and avoid obstacles within 600m from the flight path (as required under Regulation 157 of the Civil Aviation Regulations).

Mr Preston raised a significant concern about the lateral distance between the flight path on the LH circuit on RWY24 and the planned position of turbine T10, which would be approximately 400m from the flight path, some 200m short of the required 600m separation distance. Mr Preston stated that the existing Telstra communications tower on Mount Pollock was an issue for both LH and RH circuits but more so for RH circuits on RWY24. He also raised concerns about the proposed location of the anemometer mast.

Mr Iles

Mr Iles considered the impacts of the project on Gnarwarre ALA in his planning evidence. He acknowledged that there was a potential for conflict between the policy objectives in Clauses 18.04 and 21.05-3 of the Planning Scheme, and policy encouraging renewable energy projects.

Mr Iles noted that Gnarwarre ALA:

- is not CASA registered, and it is unclear what conditions and investment would be necessary for the airfield to become CASA registered
- was not developed under a planning permit, and is assumed to be an ancillary function of the primary agricultural use of the land
- does not have an Overlay control protecting the airfield or environs
- does not have a masterplan or development plan in place.

He considered that, when balancing the competing policy objectives, the broader benefits of delivering a large scale renewable energy facility outweigh the impacts on a localised privately owned airstrip that does not form part of the State's transport network.

(v) CASA

DELWP referred the wind farm application to CASA for comment, as required under the Wind Farm Guidelines. It also provided CASA with a copy of Mr Maschmedt's Aviation Safety Report. CASA responded on 23 November 2018 (Document 2), noting that Gnarwarre ALA is in very close proximity to the proposed wind farm and was not considered in the original Aviation Impact Statement prepared by Mr Gower. The response states:

> CASA has determined that the proposed wind farm as currently planned will create an unacceptable risk to aviation safety and would recommend that the location and or the height of the turbines be reconsidered taking into consideration the location of the Gnarwarre airfield.

Mr Scrimshaw from CASA made a submission to the Panel via teleconference. He expressed a somewhat different view in his oral submissions to the position outlined in CASA's response to DELWP dated 23 November 2018 (Document 2).

Mr Scrimshaw stated that NASF Guideline D does not apply to ALAs. He indicated that CASA is updating its documentation in relation to the impact of wind farms on aviation, and the 16 rotor diameter criterion will be replaced by 5 rotor diameters. Mr Scrimshaw referred the Panel to the UK Civil Aviation Agency CAP 764: Policy and Guidelines on Wind Turbines[10]. Figure 2 from CAP 764 is reproduced below and identifies the new regions to be avoided due to turbulence generated by wind turbines, which are a lateral distance of 5 rotor diameters downwind and a vertical distance of 2 rotor diameters.

Figure 2: The cylindrical region downwind the rotor should be avoided. Its size is 5RD (downwind) by 2RD (vertical). Coloured helices indicate wake vortices and decay.

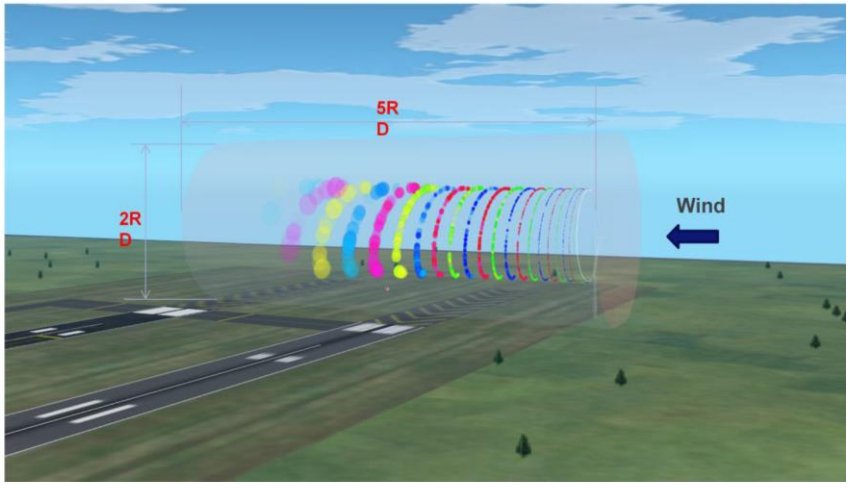

Figure 9 Diagram of the zone of turbulence generated by wind turbines

Based on Figure 9, the areas to be avoided for the project are 790m downwind of the turbines, and 316m vertical.

In response to CASA's submission, Mr Maschmedt submitted that this proposed documentation from CASA has not been released and its detail has not been confirmed. He submitted that it must be ignored at this time, and the Panel should rely on the current published NASF Guideline D.

(vi) Other submitters

Mr and Mrs Campbell raised concerns with respect to the impact the wind farm may have on the use of drones for animal surveillance and agronomy advice on their property, and restrictions on the use of Gnarwarre ALA by agricultural pilots performing aerial spraying and spreading fertilizer. They have undertaken an extensive spraying program for the control of

10 Available at: https://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=5609

serrated tussock, which includes the use of helicopters in less accessible parts of their property. They were concerned that turbulence from the turbines could impact on aerial spraying activities. Eliza Peel raised similar concerns, submitting "*the wind turbines prohibit the use of aerial appliances, which are essential for weed spraying on stony rises, crop dusting on multiple farms and aerial firefighting during running grass fires."*

Ewen Peel, who has a property directly to the west of the site on the Inverleigh-Winchelsea Road, told the Panel that he has obtained a permit from Council for the installation of a PowerPlane, which is a trial system for generating renewable electricity. The PowerPlane is a small autopiloted craft, similar to a glider, that is tethered to the ground with a cable. The PowerPlane uses the wind to climb and fly in a figure 8 pattern at altitudes of up to 450m above the tether point. A generator attached to the cable converts the tensile force in the tether into electricity. The technology is being tested through ground based trials, with a view to establishing larger scale facilities offshore.

The PowerPlane requires a radial runway area of 100m from the tether point, a radial 500m flight area and a radial 'optimised restricted zone' of just over 1km. This optimised restricted zone would overlap with the 1km 'buffer' from the proposed turbines. Mr Peel was concerned that the wind farm may have an adverse impact on the PowerPlane system. However, he was unable to supply any technical information to the Panel on his concerns and the developers of the PowerPlane, based in the Netherlands, did not make a submission.

6.5 Discussion

(i) Aviation safety

The Panel prefers the evidence of Mr Gower and Mr Preston to that of Mr Taberner. LH circuits from RWY24 have been the standard circuit since the ALA was made operational in April 2016. The process around the approval or noting of the non-standard RH circuit in ERSA is unclear, and it is not clear to the Panel whether the RH circuit has been properly assessed and approved by any suitable aviation safety authority. Mr Taberner has flown both LH and RH circuits from RWY24 in the weeks prior to the Hearing, and one of Mr Preston's staff has flown (and documented) a LH circuit flight path (Document 31). It appears that LH circuits are feasible. Although the Panel notes Mr Taberner's evidence that ultralight aircraft can find it more difficult to navigate over steeper terrain, the Panel was not persuaded that a LH circuit from RWY24 would be unusable for ultralight aircraft. The Panel also notes that Mr Taberner has an interest in Gnarwarre ALA in that he and his staff have been using the ALA for flight training in the weeks leading up to the Hearing.

The Panel notes the CASA advice regarding the anticipated updated documentation regarding turbulence effects of wind farms. While this advice is yet to be published by CASA, and the NASF Guideline D remains in place for the time being, the 5 rotor diameter distance harmonises with the guidance published by the UK Civil Aviation Agency. Based on this information, and the evidence of Mr Gower that turbulence effects reduce significantly with distance from the turbines, the Panel is satisfied that turbulence effects are unlikely to be a significant restriction on the use of the Gnarwarre ALA.

Mr Maschmedt was unable to provide accurate information on the usage of Gnarwarre ALA, including how often it is used. In response to questions from the Panel, two of the owners

of the project site stated that they had not seen any aircraft using the ALA, and Mr Peel stated that he has not consulted when the ALA was constructed. That said, the Panel notes that the site owners do not live on the site.

The Panel notes the comments of Mr Gower that a land owner can proclaim that any particular paddock as an ALA, without reference to any authority or passing any survey or inspection. The recording of an airfield in the ERSA by Airservices Australia is done solely on application of the airfield owner/operator. In evidence, Mr Preston stated his opinion that there should be clearer distinction between registered or certified aerodromes and ALAs. The Panel agrees.

It appears that there may be a number of private, unregistered ALAs in the vicinity of the site. According to Mr Maschmedt's Aviation Safety Report and the evidence of Mr Taberner, there is a private airfield approximately 3.2 nautical miles to the northeast of Gnarwarre ALA, which has two intersecting runways. Mr Preston told the Panel that it had come to his attention that a fifth ALA is located within 30kms of the site. A number of objectors have stated there are up to seven private airfields within the surrounding area and Mr Maschmedt states that Gnarwarre ALA is one of at least eight airfields within 10kms of the site.

The Panel considers that the area is well serviced with private airfields. To the extent that the project would impact on the use of Gnarwarre ALA (which the Panel considers will be limited), there are other airfields in the area that could be used as an alternative. This may only be required for certain aircraft in certain conditions.

The Panel does not consider that the concept of neighbourly flying is a significant issue for the Farming Zone. It would appear that there are a number of ALAs in the area. There is no suggestion that the concept of neighbourly flying is a requirement – rather, it appears to be a good practice adopted by pilots operating from private airstrips. There was no requirement brought to the Panel's attention that would prevent aircraft using Gnarwarre ALA to fly over neighbouring houses. The Panel also notes that the standard LH circuit from RWY24 has applied for some period since the ALA was made operational in April 2016. No evidence of objections from overflown houses was provided to the Panel.

The Panel places significant weight on the evidence of Mr Preston regarding the proposed location of the anemometer mast and the lateral distance between the flight path on the LH circuit on RWY24 and the planned position of T10. T10 would be approximately 400m from the flight path – some 200m short of the 600m separation required under Regulation 157 of the Civil Aviation Regulations. These present a significant risk that must be addressed.

The Proponent proposed that the risks associated with T10 be dealt with by way of the following permit condition (Document 106):

> Before wind turbine 10 can be constructed, an expert report prepared by a suitably qualified aircraft safety engineer or similar expert must be submitted to, and be approved by the responsible authority which confirms that the safety risk to aircraft using the Gnarwarre ALA as at 18 July 2018 for turbulence from wind turbine 10 is appropriate and acceptable.

The Panel does not consider this to be an appropriate response, given the 600m separation is required under regulation 157 of the Civil Aviation Regulations (and penalties apply if pilots do not abide by these rules).

The Panel concludes that aside from the proposed positions of T10 and the anemometer mast, the project's impacts on aircraft safety are acceptable. Adjustments will be necessary to the operation of the Gnarwarre ALA (primarily moving from a RH circuit to a LH circuit), but this is an appropriate balance of the interests of the ALA users and the policy objectives around renewable energy.

(ii) Firefighting and aerial agriculture

The Panel acknowledges the community's concerns around the impact the project could have on aerial firefighting operations. However, no evidence was presented to the Panel suggesting that aerial fire-fighting is a critical part of the fire-fighting effort in this area. This is not steep terrain inaccessible to ground based appliances, and there appears to be no basis for a finding that the turbines will pose a threat to fire-fighting operations or increase the fire risk.

The Country Fire Authority did not object to the project, or raise any concerns in relation to its impacts on aerial firefighting operations. The Country Fire Authority has previously advised the Stockyard Hill Planning Panel (August 2010) that wind farms do not create a tactical disadvantage in firefighting.

The Country Fire Authority has published Emergency Management Guidelines for Wind Energy Facilities in Victoria (August 2017)[11]. With respect to managing impacts on aerial firefighting operations, the guidelines state:

> Wind turbines should be located approximately 300 metres apart. This provides adequate distance for aircraft to operate around a Wind Energy Facility given the appropriate weather and terrain conditions. Fire suppression aircraft operate under "Visual Flight Rules". As such, fire suppression aircraft only operate in areas where there is good visibility and during daylight hours. Wind turbines, similar to high voltage transmission lines, are part of the landscape and would be considered in the incident action plan.

Based on an assessment of the development plans submitted with the permit applications (dated May 2018), all turbines are spaced over 300m apart.

It is standard for wind farm permits to include a condition requiring a copy of the endorsed plans to be provided to any organisation responsible for providing aerial fire-fighting, air ambulance and search and rescue in the area. Such a condition is included in DELWP's without prejudice conditions for the wind farm (Document 85), and is supported by the Panel.

[11] Available at: https://www.cfa.vic.gov.au/documents/20143/204281/CFA_Guidelines_For_Wind_Energy_Facilities_2017_Final.pdf/20335dcf-b212-f646-8d13-b97dc9ae6443

Fire risk is discussed in more detail in Chapter 10.1.

In terms of impacts on aerial agricultural operations, DELWP's without prejudice conditions require the operator of the wind farm to provide a copy of the endorsed plans to the Aerial Agricultural Association of Australia (now called Aerial Application Association of Australia), and to mark the meteorological mast in accordance with NASF Guideline D. The Panel supports these conditions.

The Aerial Application Association has developed guidelines[12] for aerial operations in proximity to wind farms, which involve developing plans, operational procedures and notifications agreed between the aerial operator and the wind farm operator for modifying the turbine operation on days on which aerial agricultural activity such as spraying is to take place. Normally, wind farm permits do not include a condition requiring the operator to agree these procedures, as most operators voluntarily agree to do so. In this case however, the Proponent has demonstrated a lack of willingness to engage meaningfully with external stakeholders. The Panel therefore considers that if a permit for the wind farm issues, it should include a condition requiring appropriate procedures to be agreed prior to construction. The Panel is conscious that this imposes more administrative burden on the Responsible Authority, but without such a condition the Panel has little confidence that the Proponent will respect the operational needs of local aerial agricultural operators.

The Panel did not have the benefit of detailed evidence or submissions about the nature or extent of other aerial appliances such as drones that may be used in agricultural operations in the surrounding area, and is unable to reach any findings in relation to the impacts the project may have on the use of these devices.

(iii) PowerPlane

The Panel did not receive any technical information on the PowerPlane system apart from the brochure provided by Mr Peel (Document 68), and is not in a position to form a view on whether and to what extent the project could impact on the PowerPlane trials.

6.6 Conclusions and recommendation

The Panel concludes:

- Subject to the removal of turbine 10 and relocation and appropriate marking of the proposed anemometer mast, the project's impacts on aviation safety will be acceptable.
- Adjustments will be required to the operation of the Gnarwarre ALA, primarily moving from a (non-standard) RH circuit to a (standard) LH circuit for RWY24. This is an appropriate balance of the interests of the ALA users and the policy objectives around renewable energy.
- There is no basis for a finding that the turbines will pose a threat to fire-fighting operations.

[12] Available at: https://aaaa.org.au/policies/

- If a permit for the wind farm issues, it should include a condition requiring the wind farm developer to agree appropriate notification and operational protocols with local aerial agricultural operators prior to construction commencing.

The Panel recommends:

If a permit for the wind farm issues, include conditions requiring:

a) **Turbine 10 to be deleted from the development plans**
b) **the position of the anemometer mast must be reviewed by a suitably qualified person to ensure use of the Gnarwarre Aircraft Landing Area will be able to continue safely without significant impact from the anemometer mast, to the satisfaction of the Responsible Authority**
c) **prior to construction commencing, the wind farm operator must develop an agreed set of protocols with local aerial agricultural operators for all relevant notification and operational issues, to minimise the impacts of the turbines on local aerial agricultural operations, to the satisfaction of the Responsible Authority.**

7 Biodiversity impacts

Wind and solar farms can impact on biodiversity in a number of ways, including by causing loss of native vegetation and habitat during construction and by impacting on fauna during their operation (such as mortality as a result of collision with wind farm turbines). Barrier effects (inhibiting the movement of fauna between one place and another) are other possible impacts.

7.1 Relevant policies, strategies and studies

(i) Clause 52.17

Clause 52.17 (Native Vegetation) states that:

- applications for a permit to remove native vegetation must comply with the application requirements in the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017) (the Native Vegetation Guidelines)
- the Responsible Authority must consider the decision guidelines specified in the Native Vegetation Guidelines as appropriate
- the biodiversity impacts from the removal, destruction or lopping of native vegetation must be offset in accordance with the Native Vegetation Guidelines
- the conditions on the permit must specify the offset requirement and the timing to secure the offset.

(ii) Clause 52.32

Clause 52.32 states that an application for a wind farm permit must be accompanied by information regarding flora and fauna listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) and *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act), including significant habitat corridors, movement corridors for protected fauna, and information regarding nearby declared Ramsar wetlands.

(iii) Wind Farm Guidelines

Section 4.3.4 of the Wind Farm Guidelines states that where it is reasonably likely that species listed under the FFG Act or the EPBC Act will be present on or near the site, applicants should conduct surveys at the appropriate time for at least 12 months preceding the planning permit application. Survey work should determine the species present, any adverse impacts likely to arise from the proposed wind farm, and any appropriate mitigation measures.

(iv) Solar Farm Guidelines

Section 4.6 of the draft Solar Farm Guidelines states that the impact on biodiversity, species listed under the FFG Act or the EPBC Act and native vegetation must be considered and all developments must avoid the removal of native vegetation, or minimise impacts where removal cannot be avoided.

(v) Brolga Guidelines

The *Interim guidelines for the assessment, avoidance, mitigation and offsetting of potential wind farm impacts on the Victorian Brolga population* (DSE 2011, Revision 2012) (Brolga Guidelines) set out the process for investigating and mitigating potential impacts of wind farms on Brolga. The Brolga Guidelines aim to mitigate any estimated Brolga loss to produce a zero net impact on the Victorian population.

The Brolga Guidelines recommend a three step assessment approach:

- **Level one assessment –** Initial Risk Assessment (desk top studies of known potential habitat, site inspection, community consultation and landowner surveys within 10kms of the wind farm boundary to determine the presence of Brolgas).
- **Level two assessment –** Impact Assessment (breeding and non-breeding season surveys incorporating one or more of aerial surveys, roaming surveys and flight behaviour surveys).
- **Level three assessment –** Mitigation and Offset (avoid impacts, collision risk analysis, Population Viability Analysis, compensation strategies).

The Guidelines seek to avoid impacts of wind farms on flocking and nesting home ranges through turbine free buffers, to avoid any significant reduction in breeding success and to exclude any significant impact on Brolgas while occupying a flocking site. The Guidelines require a default buffer of 3.2kms around breeding sites, and 5kms around flocking sites.

(vi) Native Vegetation Guidelines

The Native Vegetation Guidelines sets out a three-step approach (avoid, minimise, offset) to achieve no net loss to biodiversity as a result any development.

7.2 Brolga

(i) The issues

The issues are:

- the adequacy of the Brolga surveys and assessments including the extent of consultation with landowners
- the impact the project would have on the Brolga population should it proceed
- the extent of ongoing monitoring of Brolga mortality and the nature of measures to mitigate against any mortality should the project proceed.

(ii) Evidence and submissions

The Biodiversity Assessment

Both the wind farm and solar farm permit applications were accompanied by a Biodiversity Assessment dated May 2018 prepared by Ecology and Heritage Partners Pty Ltd (the Biodiversity Assessment). Mr Organ managed the preparation of the Assessment. The Proponent called Mr Organ to give expert evidence at the Hearing.

The Biodiversity Assessment stated that a Level 1 Brolga Assessment was carried out in line with the Brolga Guidelines and involved desktop studies, field inspections and site use

evaluations. The Brolga Assessment found that the development of the wind farm was likely to present only a low risk to Brolga and therefore a Level 2 assessment was not required.

The Brolga Assessment indicated:

- There were 73 records of Brolga within 10kms of the site, concentrated around the larger wetlands systems including Lake Murdeduke.
- There were 13 records of Brolga within 5kms of the site, all of which were south of the site near the Princes Highway.
- The closest record of Brolga to the site was 4.6kms to the southeast, where five Brolga had been observed flying.
- The closest recorded breeding site was 7.4kms west of the site, well outside the 3.2km buffer distance recommended in the Brolga Guidelines.
- The closest recorded flocking site was 6.9kms southwest of the nearest turbine, well outside the 5km buffer distance recommended in the Brolga Guidelines.

The Brolga Assessment involved a field survey over two days on 17 and 18 October 2017 which recorded 14 dams on the site, the majority of which were highly modified and did not provide shallow ephemeral wetlands with vegetative cover that would be suitable habitat for Brolga.

The Proponent

The Proponent did not make extensive submissions in relation to biodiversity impacts, choosing instead to rely on the Biodiversity Assessment and Mr Organ's evidence (Document 15).

DELWP referred the permit applications, including the Biodiversity Assessment, to its Environment Portfolio for advice. The Environment Portfolio provided a written response dated 12 September 2018 (Document 1), which advised that (among other things) a Level 2 Brolga assessment was required.

Mr Organ's evidence responded to DELWP's request for a Level 2 Brolga assessment. His evidence was that although a Level 2 assessment was not considered necessary, Ecology and Heritage Partners undertook an assessment with targeted field surveys on 11 and 12 December 2018. This involved surveying water bodies that were visible from public roads within 5kms from the site at dawn and dusk for the presence and number of Brolgas, and their behaviour, as well as each water body's habitat quality.

Mr Organ stated that neither Brolgas nor Brolga nests were observed during the survey. Of the 88 water bodies observed, three were dry, 75 were of low habitat quality, 10 were moderate quality and none were high habitat quality. Most of the water bodies were shallow dams with no riparian vegetation and were generally located in areas used for cropping.

Mr Organ's evidence was that as a result of these findings no further work including flight behaviour data, aerial surveys or time-activity budgets in accordance with the Brolga Guidelines was warranted. He stated that the most important factors to be considered with respect the proposed development were the lack of historical records of Brolga and lack of observations of Brolga within 3-5kms of the site, as well as the absence of high quality or reliable breeding or flocking habitat for Brolga in the area.

DELWP

Ms McMasters represented DELWP's Environment Portfolio at the Hearing. She submitted that DELWP was unable to form a position on the risk to Brolga presented by the project.

Ms McMasters expressed serious concerns with the adequacy of the Brolga assessments. She submitted that the Brolga assessments did not meet the requirement of the Brolga Guidelines, or the requirement in Clause 52.32-4 to assess the impact of the proposal on any species.

The Level 1 assessment did not include the required consultation with local landowners. A number of submitters had reported Brolga observations on land surrounding the site, and these should have been explored to determine whether any were connected with breeding or flocking activities in the area.

DELWP Environment had advised the Proponent in 2017 and several times in 2018 that a Level 2 assessment should have been undertaken, involving surveys during July to December for breeding Brolga and surveys during December to June for flocking Brolga. Ms McMasters stated that there were significant deficiencies with the Level 2 survey undertaken by Ecology and Heritage Partners in December 2018, including insufficient inspections and assessments of each wetland, no roaming or flight behaviour surveys and no breeding activity surveys in winter or spring.

DELWP Environment did not support Mr Organ's conclusion that, as the majority of the wetlands near the site were low quality habitat, the project presented a low risk to Brolga. DELWP Environment do not support the use of wetland quality as a predictor of habitat suitability for Brolga. Wetlands vary according to seasonal conditions and Brolga have been recorded breeding on low quality wetlands.

The Panel asked DELWP whether monitoring of Brolga mortality and any subsequent mitigation measures would be appropriate if a permit issued for the wind farm. DELWP responded (in Document 62) that permit application assessments should focus on avoiding environmental risks and considering design measures such as buffers to key habitats to manage unacceptable risks. However the application process, including the Panel Hearing, also serve to inform objectives for the BAM Plan (including in relation to monitoring and managing impacts on Brolga), which should be captured in permit conditions.

DELWP proposed that the BAM Plan include specific requirements relating to Brolga (Document 85, proposed conditions 45, 46 and 47). These conditions would require that:

- an assessment be prepared in consultation with DELWP of any Brolga breeding or flocking sites and their significance to the wind farm
- if Brolga breeding or flocking activity is identified within 3.5km and 5.3km of the wind farm, Brolga mortality monitoring must be undertaken for the life of the facility
- if mortality of Brolga is detected during the operation of the wind farm, the mortality must be mitigated and offset to achieve zero net impact in line with the Brolga Guidelines.

The community

Many submitters raised concerns with the Proponent's lack of consultation with local landowners in relation to Brolga sightings, and with the impact of the project on the Brolga population. The Gnarwarre Community Association submitted (Document 55) that database records used by the Proponent were not comprehensive, did not reflect the current situation and had not been complemented by observations of landowners in the area. It provided statutory declarations from eight landowners (some with attached photographs) stating that Brolga had been observed present or breeding on their properties.

Ms Steel submitted on behalf of Penrith Nominees and the Steel family (Document 98) that Brolga had been sighted in recent months on their property, which is close to the southern boundary of the site. She explained that these sightings had not been officially recorded, as she was unaware until recently of tools such as the Victorian Biodiversity Atlas and the Birdlife Atlas. Mr Tribe and Ms White and Mr and Mrs Campbell, landowners to the south and north of the site, provided signed statutory declarations that they had sighted Brolga on their respective properties (attachment to Document 55).

The Mount Pollock wetland is located on the Steel property. The Steels propose to restore and revegetate the wetland. Ms Steel explained that one of the objectives of the project is to provide a high quality 6ha wetland habitat and help re-establish the Brolga population in the area. She said that the wetland restoration has been recognised as significant, having received a substantial Landcare grant. She was concerned that the proposed wind farm would significantly impact on birds and bats that would use the wetland.

The Proponent's response

In its closing submissions (Document 105), the Proponent submitted that DELWP's criticism of the Biodiversity Assessment should be rejected. It submitted that the Assessment was comprehensive and appropriate for the site, which is a highly modified terrain with little or no habitat. It submitted that the Brolga Guidelines should be applied "*sensibly, not slavishly*", and DELWP's insistence on an aerial survey is unwarranted in this case. It submitted that Mr Organ's expert professional opinion is the only expert opinion before the Panel on these matters, and submitted:

> Mr Organ is qualified and experienced in Brolga ecology in Victoria. His evidence was unequivocal – these turbines on this site in this area offered a low risk to Brolga. He accepted there may be occasional birds or pairs seen in the area. There are, however, no nesting or flocking sites and the immediate area can be contrasted to other wind farm sites that are adjacent to substantial Brolga habitat. There is no 'key habitat' on or near the subject site.
>
> Monitoring post construction can be of practical use. If Brolga are attracted to dams on the site, they can be drained.

(iii) Discussion

The Panel considers that the Proponent's lack of consultation with DELWP and local landowners, as required by the Brolga Guidelines, has led to deficiencies in the assessment of the impact of the project on Brolga.

The Panel accepts DELWP's submission that the Level 1 assessment was not carried out in line with the Brolga Guidelines. The Panel also accepts the submissions from landowners in

the area, including from those located close to the site on the north and south sides, that they had observed Brolga on their land. The records of Brolga sightings in the area could well have been different if landowners had known that they could submit these sightings to be recorded in the various Brolga databases.

The Panel accepts DELWP's submission that the Level 2 assessment field surveys, which were undertaken over only two days in summer, were not in accordance with the Brolga Guidelines. The Guidelines state that these assessments should be undertaken over different seasons to locate any breeding or flocking Brolga. The Panel also accepts DELWP's submission that the Level 2 assessment was deficient as it lacked multiple inspections of the wetlands that were surveyed, and did not include any roaming or flight behaviour surveys.

The Panel accepts Mr Organ's evidence that neither Brolgas nor Brolga nests were observed on wetlands visible from public roads within 5kms of the site during the Level 2 survey work. However, this reflected the situation as at December 2018, over the two days on which the field surveys were conducted. It may not reflect the situation at other times of the year or during wetter periods.

The Panel does not accept Mr Organ's evidence that none of the 88 wetlands surveyed were likely to be used by Brolga because they are not high quality habitats areas. Rather, the Panel accepts DELWP's position that wetland habitats could vary according to seasonal conditions. The Panel also accepts DELWP's position that Brolga can breed on wetlands that have been assessed as low quality.

Given the observations of the local landowners, the Panel considers it likely that Brolga may visit wetlands in the area from time to time, and may use some wetlands in the vicinity of the site for breeding or flocking. However the Panel was not presented with any positive evidence of the existence of breeding or flocking sites, or records of breeding or flocking activity, in the vicinity of the site. Nor was the Panel presented with compelling evidence that the buffer distances in the Brolga guidelines (3.2kms from a breeding site and 5kms from a flocking site) would not be met if the project was to proceed. The Panel therefore considers that there is no basis for refusing the permit arising from the possible impact on Brolga.

However, should the wind farm permit be granted, future monitoring of possible Brolga mortality and implementation of subsequent mitigation measures (if required) should be a priority. The Panel supports the inclusion of DELWP's proposed Brolga conditions, especially relating to Brolga mortality monitoring for the life of the project should Brolga breeding or flocking be identified within 3.5km and 5km respectively of the site. The Panel also supports the requirement that if Brolga mortality is detected then mitigation and offsetting measures must occur to achieve zero net impact on the overall Brolga population.

The Panel was impressed with the commitment of the Steel family to restore the Mount Pollock wetlands on their property, which aims to produce a high quality wetland habitat for species including Brolga. The wetland would be close to the southern boundary of the site. The BAM Plan should take into account impacts on fauna that may use this wetlands in the future.

The Panel was not presented with any evidence that the proposed solar farm would impact on Brolga.

(iv) Conclusions and recommendations

The Panel concludes:

- On the material before the Panel, there is no basis for refusing either the wind farm or solar farm permit arising from the possible impact on Brolga.
- However, should the wind farm permit be granted, future monitoring of possible Brolga mortality and implementation of subsequent mitigation and offsetting measures (if required) should be a priority. The Panel considers that DELWP's proposed without prejudice conditions in Document 85 are appropriate.

The Panel recommends:

> **If a permit for the wind farm issues, include conditions requiring monitoring and reporting of Brolga mortality, and implementation of mitigation and offsetting measures, that are generally consistent with those proposed by the Department of Environment, Land, Water and Planning.**

7.3 Bats

(i) The issues

The issues are:

- the adequacy of the surveys of and assessment of impacts on bats
- the level of impact the project would have on the Southern Bent-wing Bat population if it were to proceed
- the extent of ongoing monitoring of bat mortality, should the project proceed.

(ii) Evidence and submissions

The Biodiversity Assessment

The Biodiversity Assessment stated that eight bat species had been recorded within 10kms of the site, but only those that typically fly high were at a high risk of flying within the rotor swept area of the turbines. The Assessment stated that of these species the White-striped Freetail Bat was known to fly at 50m or higher, and was therefore considered to be most at risk of turbine blade strike. However, the potential impact on these bats was expected to be low due to the small number of turbines (16) and the nature of the site, which was a cleared landscape some distance from significant woodlands and large trees which were generally the favoured foraging areas of most bat species.

DELWP

Ms McMasters submitted (Document 37) that the permit applications lacked any field-based assessments to determine the presence of bats at the site. This made it difficult to assess the risk to the Southern Bent-wing Bat, which is listed as critically endangered under the EPBC Act and threatened under the FFG Act. Southern Bent-wing Bats have been documented as occurring about 50kms to the southwest and west of the site. Ms

McMasters also noted that the Proponent had failed to document the record of a dead Bent-wing Bat (possibly Southern Bent-wing Bat) located 12.5kms west of the site.

Earlier in the application process, DELWP had advised the Proponent that Southern Bent-wing Bat surveys were not required, as the knowledge at that time suggested that the site was outside the known daily foraging range (30-35kms) from known roost sites. Since then, new unpublished information indicated that Southern Bent-wing Bats could move up to 70kms between roost sites in one day. As a result, the site was now thought to lie within the foraging range of the species from known roost sites including the Cumberland River 44kms distant, Cape Patton 50kms distant and Porndon Arch 67kms distant.

DELWP advised the Proponent that, in light of this new information, it should undertake a roost habitat assessment within 20kms of the site, to better determine the bat habitat value of this area (Document 1). DELWP clarified (in Document 7) that it was only seeking a roost habitat assessment within 20kms of the site as this is consistent with the Southern Bent-wing Bat National Recovery Plan, and information that suggests that foraging activity is likely to decrease exponentially with the distance from the site for the species. "*The 20 kilometres extent is considered a feasible survey extent and capable of achieving an acceptable level of confidence in the overall determination of risk*."

Ms McMasters submitted that had DELWP known about the 70km foraging range from the beginning of discussions, it would have requested bat call detection surveys to be carried out in conjunction with the 20km roost habitat assessment.

In response to concerns raised by the Panel in relation to the use of unpublished (and not peer reviewed) information regarding the foraging range of the Southern Bent-wing Bat, Ms McMasters submitted that this information had been presented at three formal conferences and several public forums, and had been reported in the media (Document 62).

DELWP advised (Document 7) that although its experience with solar farms was limited, it might be possible for bats to collide with solar farms by mistaking them for water or as a result of pursuing insects attracted to the panels.

The community

Ms Steel submitted (Document 98) that cave like structures located on her family's property had not been assessed and could possibly provide habitat for Southern Bent-wing Bat. Others, including Mr Russell, told the Panel that they had seen bats on their properties on several occasions.

The Proponent's response

Mr Organ responded to the issues raised by DELWP in his evidence statement (Document 15).

His evidence was that the Yellow-bellied Sheathtail Bat, which was listed as Near Threatened under the FFG Act, had been recorded occurring 6.9kms from the site but as this species was unlikely to visit the site, the risk was low.

Mr Organ's evidence was that the site was located outside the known distribution area of the Southern Bent-wing Bat. There are no records of this species on, or within the vicinity of, the site. He further stated that small numbers of these bats could potentially fly across

the site on occasions, however AnaBat surveys at other wind farm sites typically recorded the Southern Bent-wing Bat flying below the level of the rotor swept area. He concluded that the project presented a very low risk to the Southern Bent-wing Bat population, because the site was not near high quality bat foraging habitat, and due to the low number of turbines.

(iii) Discussion

The Panel accepts Mr Organ's evidence that no threatened species of bat is likely to be affected by this proposal, with the possible exception of the Southern Bent-wing Bat.

The Panel notes the new unpublished information presented by DELWP which indicates that Southern Bent-wing Bat could move up to 70kms between roost sites in one day. It accepts that this could put this site in its foraging range from known roost sites. However, the Panel also notes that this information was not available to the Proponent until after 18 May 2018 when the applications were lodged. The Panel also has some concern with DELWP's reliance on this information, given that is unpublished and not peer reviewed (even though it is publicly available).

The Panel accepts Mr Organ's evidence and there are no records of Southern Bent-wing Bat on, or within the vicinity of the site (with the possible exception of the record located 12.5kms west of the site referred to by Ms McMaster). It also accepts his evidence that potentially small numbers of bats could fly across the site on occasions, and that AnaBat surveys at other wind farm sites have typically recorded the Southern Bent-wing Bat flying below the level of the rotor swept area.

On balance, on the basis of the best available scientific data, the Panel accepts Mr Organ's evidence that the proposal presents a very low risk to the Southern Bent-wing Bat population. The site is not near known high quality bat foraging habitat or roost sites. If the wind farm application is successful there would only be a low number of turbines. The Panel was not persuaded on the basis of the information presented to it that the proposed solar farm would have a significant impact on any bat population.

That said, the Panel supports DELWP's proposal to undertake a desktop survey of possible Southern Bent-wing Bat roost sites within 20kms of the site, as well as bat mortality monitoring under the BAM Plan (see Chapter 7.6). A 20km roost survey will provide valuable background information to inform the BAM Plan, and should collision with the turbines or the solar panels become an issue.

(iv) Conclusions and recommendation

The Panel concludes:

- Based on the evidence and information before the Panel, the only threatened species of bat that would likely be affected by the project is the Southern Bent-wing Bat. The risk to this species is very low.
- That said, the Panel considers that a desktop survey of possible Southern Bent-wing Bat roost sites within 20kms of the site and bat mortality monitoring should be required as part of the BAM Plan.

The Panel recommends:

If a permit for the wind farm issues, include conditions requiring a Bat and Avifauna Management Plan that are generally consistent with those proposed by the Department of Environment, Land, Water and Planning, but modified to address the following:

a) a desktop survey of possible Southern Bent-wing Bat roost sites within 20kms of the site prior to construction commencing

b) bat mortality monitoring once the project becomes operational.

7.4 Other fauna

(i) The issues

The issues are, should the project proceed:

- possible impact of the proposed wind farm on other species listed under the EPBC or FFG Acts
- impact on the proposed wind farm on raptors and in particular on the Wedge-tailed Eagle
- possible impact of the proposed solar farm on fauna.

(ii) Evidence and submissions

Listed species

The Biodiversity Assessment stated that there were records of 12 EPBC Act listed species and 25 FFG Act listed species located within 10kms of the site. Although the Assessment stated that none of these species were recorded on the site during the field survey, there was suitable habitat on the site for the EPBC Act listed Striped Legless Lizard, Growling Grass Frog, Grey-headed Flying-fox and Golden Sun Moth. The Assessment indicated that the project footprint had been refined to avoid all these potential habitat areas.

The Assessment also stated that the site contained potential habitat for the FFG Act listed Australian Shoveler, Hardhead, Musk Duck, Blue-billed Duck, Freckled Duck, Eastern Great Egret and Diamond Firetail, but given the availability of higher quality habitat elsewhere, the site was not likely to provide significant habitat for these species.

The Assessment indicated that 22 migratory bird species listed under the EPBC Act had been recorded within 10kms of the site, but most of these records were associated with the larger lakes and wetlands in the area including Lake Modewarre, Lake Gherang and Lake Murdeduke. The Assessment stated that as the site was not located between or close to migratory bird feeding or roosting areas, and as only 16 turbines were proposed, the impact on migratory bird species would be low.

Ms McMasters submitted (Document 37) that there appeared to suitable habitat on the site for Growling Grass Frog and Striped Legless Lizard, both species being listed as threatened under the FFG Act and the EPBC Act. Although DELWP was concerned that there had not been any survey for these species, it considered that the impact of the proposal on these species would likely be minimal if construction avoided any areas of native vegetation,

wetlands other potential habitat areas identified in the Biodiversity Assessment. DELWP considered that protection of these areas could be achieved by an appropriate Construction Environment Management Plan.

Raptors

The Biodiversity Assessment stated that during the bird surveys, 10 raptors had been observed on the site, including five Wedge-tailed Eagles observed near Mount Pollock flying at the height of the turbine rotor swept area. It stated that raptor species likely to occur in the area were at moderate risk of mortality by turbine collision, but none of these species were listed as threatened under the EPBC or FFG Act, and any mortality was unlikely to significantly impact on the overall population of these species.

The Assessment stated that although the Wedge-tailed Eagle was particularity at risk in the vicinity of Mount Pollock because of thermal updrafts, it was unlikely that any mortalities would lead to long term decline of the regional population. However, monitoring of the operational impacts, and mitigation and management measures, might be required in order to reduce the risk of collision and impact on this species. Mr Organ's evidence (Document 15) was that certain raptors species appeared to adjust their foraging behaviour to avoid being hit by wind turbines.

Many submitters indicated they had seen Wedge-tailed Eagle in the area and were concerned with the impact of the proposed wind farm on this species. Ms Steel expressed concern that although eagles were not threatened, they were of cultural significance and the pairs of eagles that often perched and hunted on her family's property could be impacted by the project. Ms White stated that from her property, which is adjacent to the southern boundary of the site, she had seen eagles flying around Mount Pollock. Mr Bieser, the owner of the part of the site containing Mount Pollock, stated that Wedge-tailed Eagles used the thermals around Mount Pollock.

Ms McMasters on behalf of DELWP submitted that the wind farm mortality reports it had received indicated the species most impacted by wind farms turbines were Nankeen Kestrel, Brown Falcon and Wedge-tailed Eagle. She stated that these were all common and widespread species and not at risk of becoming threatened.

Solar Farm

The Biodiversity Assessment did not contain any information on the possible impact of the proposed solar farm on fauna. The Panel invited DELWP's Environment Portfolio to provide comments in relation to possible impacts of the solar farm. In its letter dated 7 January 2019 (Document 7), DELWP raised concerns that birds or bats could possibly collide with the solar panels if they mistook them for water or flew into them after pursuing insects attracted by the solar panels. DELWP was also concerned that 'white cockatoos' (Long and Short-billed Corellas, Sulphur-crested Cockatoos and Galahs), could damage infrastructure such as rubber seals, timber structures and cables. Ms McMasters submitted that a Wildlife Management Plan should be prepared to outline how the Proponent would mitigate, if required, the impact of white cockatoos on the solar panels by use of non-lethal control methods.

(iii) Discussion

The Panel accepts the findings of the Biodiversity Assessment that the project footprint has been modified in order to avoid potential habitat areas on the site of fauna listed under the EPBC Act and/or FFG Act. The Panel also accepts the finding that water birds listed under the FFG Act and migratory birds listed under the EPBC are unlikely to be significantly affected by the proposed wind farm.

The Panel accepts DELWP's submission that the proposed wind farm will likely impact on raptors, particularly Wedged-tailed Eagles. This is supported by the findings of the Biodiversity Assessment. However, the raptor species, including Wedge-tailed Eagle, most likely to impacted by wind farms turbines are common and widespread species and not at risk of becoming threatened at a population level. That said, the Panel understands the concerns of local residents in relation to eagle mortalities, especially as a result of locating turbines on Mount Pollock. It agrees with the recommendation in the Biodiversity Assessment that mortalities should be monitored under the BAM Plan, and mitigation and management measures might be required in order to reduce the risk of collision and impact on this species.

The Panel was not persuaded that the solar farm would impact significantly on fauna. The Biodiversity Assessment states that the project footprint has been designed to avoid areas of native vegetation that could provide suitable habitat. The Panel accepts DELWP's advice that any impact on habitat suitable for Growling Grass Frog and Striped Legless Lizard could be avoided by the implementation of a Construction Environment Management Plan. It also accepts DELWP's advice that a Wildlife Management Plan should be prepared to outline how the Proponent would mitigate, if necessary, the impact of white cockatoos on the solar panels by use of non-lethal control methods.

(iv) Conclusions and recommendations

The Panel concludes:

- It is most unlikely that this proposal would adversely impact on any fauna species listed under the EPBC Act or FFG Act.
- The project would likely cause mortality of raptor species, and in particular Wedge-tailed Eagle, although impacts at a population level are unlikely. Such mortalities would need to be monitored under a BAM Plan and mitigation measures be implemented wherever practicable.
- The permit conditions for the solar farm should require the preparation of a Wildlife Management Plan to outline how the Proponent would mitigate, if necessary, the impact of white cockatoos on the solar panels and other infrastructure by use of non-lethal control methods.

The Panel recommends:

If a permit for the wind farm issues, include:

a) a condition requiring a Bat and Avifauna Management Plan that are generally consistent with those proposed by the Department of Environment, Land, Water and Planning, but modified to address the following:

- **monitoring of mortality of Wedge-tailed eagles, and the implementation of mitigation measures where practicable**

b) a Construction Environment Management Plan and other measures to address the avoidance of native vegetation that could provide suitable habitat for listed or threatened species.

If a permit for the solar farm issues, include conditions requiring:

a) a Construction Environment Management Plan and other measures to address the avoidance of native vegetation that could provide suitable habitat for listed or threatened species

b) a Wildlife Management Plan to outline how the operator would mitigate, if necessary, the impact of white cockatoos on the solar panels or any other infrastructure by use of non-lethal control methods.

7.5 Native vegetation

(i) The issue

The issue is impacts on remnant native vegetation or listed flora species, should the project proceed.

(ii) Evidence and submissions

The Biodiversity Assessment stated that the site was surveyed on 18 and 19 October 2017. All flora species were recorded, any significant records mapped, and the overall condition of the vegetation assessed. The Assessment indicated that 53 flora species were observed on the site including 29 non-indigenous species. The Assessment stated that as the proposal would not result in the removal of any remnant patches of native vegetation or scattered trees, the Native Vegetation Guidelines did not apply.

Mr Organ's evidence (Document 15) was that no flora species listed under the EPBC Act were observed on the site, although Spiny-Rice-flower *Pimelea spinescens subspecies spinescens* plants were observed in predominantly introduced vegetation on the north side of Gnarwarre Road adjacent to the site. Spiny-Rice-flower is listed as critically endangered under the EPBC Act and threatened under the FFG Act. Mr Organ stated that the project footprint was subsequently altered to avoid all the areas of potential Spiny Rice-flower habitat. Mr Organ stated that the Victorian Biodiversity Atlas contained records of another six EPBC Act species previously recorded within 10kms of the site, but based on vegetation quality, landscape context and the location of previous records, none of these species were likely to occur on the site.

Mr Organ stated that no flora species listed under the FFG Act were observed on the site, although Purple Blown-grass *Lachnagrostis punicea* subspecies punicea, Small Scurf-pea *Cullen parvum* and Basalt Tussock Grass *Poa labillardierei var. (Volcanic Plains*) had been previously recorded on the site. He stated that the field study indicated that due to agricultural disturbance in the last 10 years, it was not likely that these plants, nor any other state significant species, now existed on the site.

Mr Organ stated that patches of Plains Grassland which corresponded to Western (Basalt) Plains Grasslands community (listed as threatened under the FFG Act) were mapped, and the project footprint had been refined to avoid all areas of this community.

Ms McMasters expressed concern that, as the applications lacked details on the upgrading of access roads, the location of access points, the width of internal roads and the location of underground cables, the potential impact on native vegetation could not be satisfactorily assessed. DELWP's draft permit conditions for the wind farm (Document 85) require the preparation of a Native Vegetation Management Plan (condition 43), which would require measures to identify and protect the native vegetation on the site during works.

(iii) Discussion

A planning permit is required to remove scattered native vegetation (predominantly grasses) located within the development footprint. The location of this native vegetation within the development footprint is shown in Figure 3 of the Biodiversity Assessment.

The Panel accepts the Biodiversity Assessment's finding that, as the proposal will not result in the removal of any remnant patches of native vegetation or scattered trees, the Native Vegetation Guidelines do not apply.

The Panel accepts Mr Organ's evidence that no flora species listed under the EPBC Act or the FFG Act are likely to occur on the site and that the patches of Plains Grassland (Western (Basalt) Plains Grassland community, listed as threatened under the FFG Act) have been avoided by adjusting the project footprint.

The Panel considers that the Native Vegetation Management Plan required under DELWP's proposed without prejudice permit conditions (condition 43) would provide for the protection of native vegetation areas on the site during works. The Panel supports the principles reflected in this condition, but considers that these requirements are more appropriately included in the Construction Environment Management Plan.

The issue of possible clearing of roadside vegetation along access roads and at road intersections once the access routes had been finalised is discussed in relation to traffic issues (Chapter 0).

(iv) Conclusions

The Panel concludes:

- It is unlikely the project would impact on any patches of remnant native vegetation or scattered trees, nor adversely impact on any flora species or communities listed under the EPBC Act or FFG Act.
- The Panel supports the requirements outlined in DELWP's proposed permit condition requiring a Native Vegetation Management Plan, but considers that these requirements are more appropriately addressed in the Construction Environment Management Plan rather than a separate Native Vegetation Management Plan.

7.6 BAM Plan

(i) The issues

The issues are, should the project proceed:

- the time period of the application of the BAM Plan
- ensuring that monitoring data is recorded and analysed in such a way that would allow for the assessment of the cumulative impact of multiple wind farms on raptors and bats.

(ii) Evidence and submissions

The wind farm application included a draft BAM Plan dated February 2018, which included details of bird and bat mortality monitoring, mitigation measures designed to reduce risk, significant impacts and responses to mortalities of listed species and reporting and communications arrangements. The proposed mitigation measures outlined in the draft BAM Plan included enhancing carrion removal protocols, modifying lights that may attract bats, removing farm dams that may attract water birds, removing foraging habitats and using acoustics to discourage birds.

DELWP's draft without prejudice permit conditions (Document 85) included a requirement that the BAM Plan extend for 5 years (as recommended by the Golden Plains Wind Farm Panel), and include a monitoring program to detect the mortality of all species of bat and avifauna (not just listed species), reporting procedures and procedures for further detailed investigation if required (proposed condition 44). Other proposed conditions require that:

- when the monitoring program under the BAM Plan is complete, the operator must submit a report to the Responsible Authority setting out the findings of the program, and make the report publicly available on the project website for the operating life of the wind farm
- the Responsible Authority may direct the operator to conduct further investigations of the impacts on listed species.

(iii) Discussion

The Panel considers that comprehensive monitoring and assessment of bird and bat mortalities at wind farms for as long a period as practicable is essential. It supports DELWP's proposed 5 year term for the BAM Plan (which is consistent with Golden Plains Wind Farm Panel recommendation). This is particularly important given the deficiencies in the application material relating to the assessment of the project's impacts on Brolga (discussed in Chapter 7.2).

The Panel accepts that raptors including Wedge-tailed Eagle, although not threatened species, may be impacted by the turbines and that any mortalities would be of significant community concern. The Panel supports the inclusion of monitoring and assessment of raptor mortalities under the BAM Plan. If significant deaths occur, the Panel encourages the operator and DELWP to consider mitigation measures aimed at reducing these mortalities as far as practicable.

In discussions on the proposed permit conditions, DELWP advised that compatible monitoring, assessing and reporting protocols under BAM Plans for different wind farms was important to allow the assessment of cumulative impacts on species such as Brolga, raptors and Southern Bent-wing Bat. The Panel accepts and supports this proposition. Should the project proceed, the Panel encourages DELWP to achieve this outcome when providing input into the BAM Plan through consultation.

(iv) Conclusions

The Panel concludes:

- Subject to the modifications recommended in Chapters 7.3 and 7.4, DELWP's proposed permit conditions relating to the BAM Plan, including that the BAM Plan continue for at least a 5 year period, are appropriate.
- The Panel encourages DELWP to ensure that the BAM Plan is worded in such a way as to allow for compatible monitoring and assessment protocols with other BAM Plans for other wind farms, to provide a suitable basis for assessing possible cumulative impacts on species such as Brolga, Southern Bent-wing Bat and raptors.

8 Social impacts

A significant number of submissions raised concerns about the possible social impacts of the proposal. A key concern was the adequacy of the community consultation undertaken by the Proponent.

8.1 The issues

The issues are:

- adequacy of the engagement process, and the significance of community opposition
- adequacy of the proposed community benefit sharing, including the Community Benefit Fund
- the impact on the ability to use or develop neighbouring land, especially within the 1km 'buffer' from the turbines
- health and wellbeing impacts, including stress
- divisions within the community caused by the project
- whether Council is equipped to manage the proposed complaints handling process.

8.2 Relevant policies, guidelines and reports

(i) Statutory requirements

Section 60 of the Act sets out what matters a Responsible Authority must consider when assessing a permit application. They include any significant social effects and economic effects which the Responsible Authority considers the use or development may have (section 60(1)(f)). Section 60(1B) states that the Responsible Authority must (where appropriate) have regard to the number of objectors in considering whether the use or development may have a significant social effect.

Section 60(1B) was introduced by the *Planning and Environment Amendment (Recognising Objectors) Act 2015*. Planning Advisory Note 63, published in October 2015, provides guidance on the new requirements. It indicates that the new requirements do not change the general approach a Responsible Authority is required to take in assessing whether a proposed use or development is likely to have a significant social effect. Rather they aim to make clear that:

- the number of objectors may indicate a significant social effect
- if so, the Responsible Authority must have regard to that fact in considering whether the use or development may have that effect.

The Advisory Note states:

> The fact that a large number of people have objected will not, by itself, establish that a proposal has a significant social effect. However, as held in *Stonnington City Council v Lend Lease Apartments (Armadale) Pty Ltd*, ([2013] VSC 505 [68]), the number of objections may be a relevant fact (together with other facts) that indicates that a proposal may have a significant social effect on the community.
>
> For example, the number of objections may be indicative of the scale of a social effect on the community, the presence of a specific social need in the community, or the social significance of a site to the community.

(ii) Clause 52.32

Clause 52.32-3 states that a permit application for a wind farm must be accompanied by a plan showing all dwellings within 1km of a turbine, and evidence of the written consent of owners of all existing dwelling within 1km of a turbine. Clause 52.32-2 states that a wind farm with turbines within 1km of an existing dwelling is prohibited unless the application meets the requirements of Clause 52.32-3.

(iii) New Zealand Standard

The New Zealand Standard refers to health and amenity in the context of noise limits. It states:

> The consensus view of the committee, including numerous experienced acoustic experts, is that the Standard provides a reasonable way of protecting health and amenity at nearby noise sensitive locations, without unreasonably restricting the development of wind farms.

The limits in the New Zealand Standard are intended to provide reasonable protection against loss of amenity or sleep disturbance in a dwelling.

(iv) Wind Farm Guidelines

Community engagement

Section 4.1.1 of the Wind Farm Guidelines discusses the benefits of pre-application consultation and engagement in relation to a wind farm permit application, including with the local community. It notes that pre-application consultation provides an opportunity to identify and understand concerns of the community and stakeholders, and to obtain information and feedback on existing conditions and potential issues to address before lodging the planning permit application. It "*highly recommends*" the development of a community and stakeholder communications and consultation plan. It goes on to set out principles for guiding consultation, and provides a reference to the Community Engagement and Benefit Sharing Guide (discussed below).

Complaints handling processes

Section 4.3.5 of the Wind Farm Guidelines states that wind farms require complaints management processes. The model permit conditions appended to the Guidelines include conditions requiring wind farm operators to prepare and implement a Complaints Investigation and Response Plan, and maintain a Complaints Register.

(v) Community Engagement and Benefit Sharing Guide

Community engagement

Part A of the Community Engagement and Benefit Sharing Guide deals with better practice community engagement. It states that good community engagement:

> … fosters relationships, trust, feelings of ownership, and a sense of collaboration through the provision of meaningful and ongoing opportunities for the community to participate in the design and development of projects.

The Guide emphasises the need for, and benefits of, early engagement with local communities, the need to establish and deliver on clear expectations and the importance of giving people the opportunity to influence decisions that affect them. It states that the social feasibility of a project should be given the same attention and diligence as technical and economic feasibility, and notes that a social feasibility analysis helps proponents to understand the social impacts of a project and determine if the project is socially feasible.

The Guide references and adapts the International Association for Public Participation's *Spectrum of Public Participation* (IAP2), describing a spectrum of community engagement from informing, at the most basic level, through to empowering. It sets out guiding principles for better practice community engagement (at page 7), based on published research:

- mutual benefit
- mutual respect
- relationship building
- authenticity
- appropriateness
- ongoing engagement
- transparency and responsiveness.

Community benefit sharing

Part B of the Guide deals with community benefit sharing. It states (at page 21):

> Renewable energy infrastructure can lead to changes, including visual and amenity impacts, in local communities. In response, developers have sought to share some of the benefits of renewable energy projects with local and other stakeholders. This is usually directed at community members in closest proximity to the development.

The Guide describes various types of benefit sharing, including:

- local jobs and procurement
- neighbourhood benefit programs (including neighbour payments, solar photovoltaic installations and screening vegetation)
- 'beyond compliance' level activities associated with visual amenity, television reception and sound dampening
- sponsorship and community benefit funds (grants) and/or legacy community benefit initiatives (long term programs or services)
- employee volunteerism
- innovative products (including electricity products)
- innovative financing (including co-investment and co-ownership).

Complaints handling processes

The Guide notes that communities often don't know who to contact with concerns or complaints, which can significantly impact a project's social licence to operate. It highlights the importance of prioritising an accessible complaints management process as part of any community engagement strategy. It makes the following minimum recommendations:

- develop a complaints management process
- maintain a detailed complaint register

- list the complaints process and stages transparently on the project website or project webpage of the development company
- provide a toll-free number with a message service and email address
- directly notify key stakeholders about the process.

(vi) The National Wind Farm Commissioner's Annual Report

The 2016 Annual Report by the Office of the National Wind Farm Commissioner stated:

> Lack of effective consultation with neighbours can lead to a range of material issues for a wind farm project, including conspicuous opposition to the project, planning/approval delays and appeals, the project not being approved, as well as widespread negative media coverage about the project and the industry more broadly.

The Commissioner's recommendations are to:

- raise the profile of neighbour engagement
- consult with neighbours on project design
- advise and consult on project changes
- undertake noise testing and make the results publicly available and transparent
- facilitate site visits to operating wind farms
- provide factual information.

(vii) NHMRC Statement and Information Paper

The National Health and Medical Research Council (NHMRC) published the *NHMRC Statement: Evidence of Wind Farms and Human Health* and the *NHMRC Information Paper: Evidence on Wind Farms and Human Health* in February 2015[13], following careful consideration of the body of evidence available at the time in relation to whether wind farms cause adverse health effects in humans. The Statement and Information Paper conclude (in summary):

- There is no direct evidence that exposure to wind farm noise affects physical or mental health.
- The evidence suggests that there are unlikely to be any significant effects on physical or mental health at distances greater than 1,500m from wind farms.
- There is no direct evidence that considered the possible effects on health of infrasound or low frequency noise from wind farms.

The NHMRC Statement and Information Paper concluded that given the poor quality of current direct evidence and the concern expressed by some members of the community, high quality research into possible health effects of wind farms, particularly within 1,500m, is warranted. As far as the Panel is aware, the NHMRC has not published or referenced any such research to date.

[13] Available at: https://www.nhmrc.gov.au/health-advice/environmental-health/wind-farms

Other studies

Submitters referred to various studies into the health effects of wind farms, which are discussed in Chapter 8.6.

8.3 Consultation and engagement

(i) Evidence and submissions

One of the primary themes raised in submissions was the Proponent's lack of meaningful community consultation and engagement. The first most submitters heard of the project was when they received formal notification of the applications under section 52 of the Act. Others read about the project in the Geelong Advertiser shortly before receiving formal notice, but had no contact from the Proponent or its consultants either before or since. Submitters felt that the Proponent was not taking the concerns of the community seriously, and were concerned that the Proponent's future management of complaints about the operation of the wind farm may not be effective.

The Gnarwarre Community Association pointed to the absence of a social feasibility analysis as recommended by the Community Engagement and Benefit Sharing Guide. The National Trust was also critical of the Proponent's lack of engagement with the community about the project, particularly in relation to gauging the community's attitudes towards the local landscape.

Mr Richmond summed up well the sentiments expressed by many submitters in relation to community engagement:

> Surely the large quantity of objectors must tell us in no uncertain terms that we are certainly in the wrong area for this project. When will it be time that we sit back and look, and say that we are simply getting things wrong?
>
> …
>
> This is not about me, and what I want, it is simply about what is right and wrong, and the long term scars that this will leave due to the lack of effective community consultation, where people are still able to be treated with the utmost respect, which I am sure is something we all deserve.

DELWP submitted that genuine community engagement is critical to successful projects and the energy market transition more broadly. It submitted that the Proponent did not even reach the basic level of engagement on the IPA2 spectrum, namely to 'inform'. DELWP submitted that the number of objections comparative to the size of the project "*is of concern*", and that "*from the evidence provided, the proposed wind and solar farms pose risks to the loss of social acceptance for renewable energy in the region*".

DELWP pointed the Panel to the principles listed on page 7 of the Community Engagement and Benefit Sharing Guide, and provided comments in relation to each principle as set out in

Table 3 below.

Table 3 DELWP's comments in relation to the Proponent's community engagement

Factor	DELWP comment
Starting engagement early in the development process	There is no evidence to support that timely, proactive or comprehensive engagement for this proposal was undertaken outside the two host landholders. Engagement that occurred for the Winchelsea windfarm was many years ago and for a different project.
Integration of the development with local landscape values and local identity (tailoring to local context)	No comment.
Completing a social feasibility analysis	There is no evidence to suggest that this has been completed.
Community (especially local) participation in decision-making and design (fair process)	There is no evidence to suggest that an attempt was made to incorporate this into the process.
Sharing the benefits from the development in an equitable way (fair outcomes)	There is no evidence of engagement with neighbours or a neighbour benefit proposal being developed.
Building trust and relationships between stakeholders	There has been no evidence provided to suggest that an attempt has been made to build strong relationships with the local community.
Regular and face-to-face engagement	There has been no evidence to suggest that an attempt was made to incorporate this into the process. Information was provided in a passive way through website, advertisements and letters late in the application process.
Prioritising an accessible complaints management process	DELWP Planning is advised that residents have stated that they have tried to find out further information but were unable to reach the Proponent.
Managing community engagement for legacy projects.	If this project is constructed, it has the potential to negatively impact the social acceptance of renewable energy in the Barwon area.

DELWP recommended that the Proponent gives more consideration to aspects of the project the community can have influence on, and what processes can be used facilitate their involvement in decision-making for these aspects. It submitted:

> In summary, other renewable energy businesses see the benefits of, and are practicing, good community engagement and benefit sharing. However, the proponent has not demonstrated best practice engagement and benefit sharing and has opted to passively inform the community, missing the opportunity to incorporate the perspectives and concerns of the community that will host the development. Best practice engagement is proactive, face-to-face, comprehensive and inclusive. The lack of community engagement during this project has the potential to undermine the

> hard work of other proponents and risks harming the image of renewable energy in the long term. The Inverleigh wind farm and solar farm has not met the Victorian Government's expectations for community engagement and benefit sharing as detailed in the Community Engagement and Benefit Sharing Guide.

The Proponent's main submissions (Document 34) did not address community engagement, social impacts or the number of objections, other than to note that a number of submitters raised community engagement as a concern. In its closing submissions (Document 105), it submitted that the Community Engagement and Benefit Sharing Guide was not referenced in the Wind Farm Guidelines until October 2018. It submitted that, since this was after the applications were lodged, the aspects of the Guide dealing with pre-application community engagement do not apply. It submitted that:

> It is for a proponent to decide the level of engagement for a project. In this case, in the context of substantial opposition to the Winchelsea Wind Farm with many of the same objectors present, and in the context of physical interference with two anemometer masts as well as confrontation in the previous proposal and this one, the proponent chose to rely on the notification process stipulated under the PE Act.
>
> Whether greater consultation would have made a material difference to the acceptance of these proposals is not known. There is clearly entrenched opposition. It may be thought unlikely that any amount of consultation would remove a landowner's objection to visual impact or noise.

The Proponent called Mr Klapish to present evidence in relation to the proposed Community Benefit Fund, and community engagement more broadly. He was previously employed by the proponent for the earlier Winchelsea Wind Farm, and was the Business Development Manager for that project. He has also had involvement in other wind farm projects in South Australia. His evidence was:

> Whilst the original Winchelsea Wind Farm proposal allowed its Planning Approval to lapse, the project remained a viable option for a new developer to progress. Consequently, I have had many discussions over the years with supporters and objectors to the project, probably exceeding half a dozen per year. Therefore, in my opinion, a project on this site has remained uppermost in the minds of many members of the community for a long time, and contrary to some claims, cannot have come as a complete surprise to residents.
>
> The required level of community consultation under the Planning Guidelines is clearly less than that required for those renewable projects bidding for contracts under the Victorian Renewable Energy Target Auction. Unfortunately, no level of community consultation would ever be enough for people clearly opposed to any project near to where they live, which is an understandable response. Most of the commentary I have received in relation to community consultation is linked to complaints against the actual planning guidelines, rather than specifics of the development itself.

Many submitters challenged Mr Klapish's assertions that the project had remained a "*viable option*" that had remained "*uppermost in the minds of many members of the community for a long time*". On the contrary, they described their relief when the permit for the Winchelsea Wind Farm lapsed, and they felt able to move on with their lives.

Two of the landowners of the site made submissions to the Panel. Mr Peel indicated that he had attempted to personally speak to all of the neighbours about the project, although he had not been given much notice of the applications being lodged by the Proponent. Mr Bieser spoke about the discord in the community over the permit application for the

Winchelsea Wind Farm, including alleging threatening behaviour toward himself and the local member for the area.

(ii) Discussion

The Proponent submitted that community engagement is not identified in any applicable decision guideline or policy as a relevant consideration in relation to whether or not a permit should be granted for a wind and solar farm.

However, the decision guidelines in Clause 52.32-6 state that the Responsible Authority (and, by extension, the Panel) must consider the Wind Farm Guidelines before deciding on a permit application. The Guidelines discuss the benefits of consultation and engagement, and reference the Community Engagement and Benefit Sharing Guide. The Panel is also required to consider all submissions and objections referred to it under section 97E(2) of the Act, and to provide a reasonable opportunity for submitters to be heard. Community engagement is clearly a relevant consideration for the Panel.

The lack of community engagement was one of the primary concerns raised in the objections and submissions. There was a high level of concern and anxiety in the community about the project and its possible impacts, possibly made worse by the fact that the community had already been through the planning process for the Winchelsea Wind Farm, in which they were ultimately unsuccessful. Submitters felt that their concerns were not recognised by the Proponent, and they were not being treated with respect by the Proponent.

The Panel accepts these submissions. The community's concerns over the potential impacts of the project are entirely legitimate, and deserving of proper consideration by the Proponent. Instead, it is obvious to the Panel that the Proponent chose to effectively ignore the community, with the exception of the limited engagement undertaken by Mr Klapish in relation to the Community Benefit Fund (discussed in the following Chapter). This lack of recognition and respect for those who are likely to be most impacted by the project is unfortunate to say the least, and in the Panel's view unnecessary and inappropriate.

The Panel agrees with DELWP's submissions in relation to the benefits of properly engaging with the community, and the harm of failing to properly engage with the community. Renewable energy projects, particularly wind farms, can have significant impacts on the local community, and can raise significant fears and concerns. It is notable that the Inverleigh Wind and Solar Farm is a relatively small project (at 16 turbines), but has generated far more opposition than other much larger projects in the area. This reflects extremely poorly on the Proponent and, by extension, may well pose a risk to the reputation of the renewable energy industry more broadly.

The Panel considers that the Proponent missed a significant opportunity by electing not to engage with the local community and agencies such as DELWP in relation to the project. The Proponent's approach to consultation and engagement has been far from best practice. Statutory notice of the permit applications is no substitute for proper consultation and engagement.

In the Panel's view, the Proponent's lack of engagement and consultation has resulted in significant gaps in the application material, and has made the Panel's task in assessing the permit applications more difficult than it might otherwise have been. In many instances

these gaps, which are discussed in the various other chapters in this Report, have resulted in more stringent conditions than may otherwise have been required. As a result, the permit will be more difficult to implement and administer for both the operator of the project and the Responsible Authority.

(iii) Conclusion

The Panel concludes:

- The Proponent's approach to consultation and engagement has been extremely poor and falls well short of best practice. It has failed to meet the standards expected by Government, outlined in the Community Engagement and Benefit Sharing Guide and the Wind Farm Guidelines.

8.4 Community benefit sharing

The Proponent proposes to establish a Community Benefit Fund in conjunction with the project. Key details of the fund are:

- the fund will distribute around $48,000 per year ($3,000 per turbine) to local projects throughout the life of the project
- the fund will be managed by a Community Engagement Committee that will operate throughout the construction and operation phases of the project
- the core objective of the Committee will be ensuring timely and effective communication with the local community
- projects to be funded will be determined by local residents.

The Proponent is not proposing any other form of community benefit sharing.

(i) Evidence and submissions

Mr Klapish conducted several interviews with local groups and individuals to gather ideas on ways in which the proposed Community Benefit Fund could be used. These included the Inverleigh and Winchelsea Primary Schools, Golden Plains Shire Council, the Inverleigh Progress Association and local environment and Landcare groups. He indicated that, due to opposition or antipathy toward the project, some people were unwilling to be interviewed at this time. His evidence was:

> Overwhelmingly, the people I have spoken with are positive regarding the wider benefits that would accrue from this development. Clearly there are near neighbours who will never be in favour of the project, nor be swayed by the wider community benefit, and nor should anyone necessarily expect them to be.

His evidence was that the Community Benefit Fund will not change the feelings of immediate neighbours, but that societies can only advance on the presumption of the wider good. He concluded that the Community Benefit Fund, involving inclusive consultation with the community, was the best way to ameliorate the perceived negative impacts of the project.

DELWP noted that the Proponent, through Mr Klapish, has spoken to some local community groups about ideas for the Community Benefit Fund, but submitted that this was not an inclusive approach. It submitted that the proposed benefit sharing approach:

> … is rudimentary and does not reflect industry best practice. There is only one component, a community benefit fund, which has been developed with only informal engagement activities with a select group of organisations around the area. No consultation has occurred with the broader community.

DELWP submitted that the Proponent's approach could be contrasted with other projects where proponents have offered a range of benefits throughout the project's development, of the types referred to in the Community Engagement and Benefit Sharing Guide.

Mr Tucker submitted that payments arising from the project would be unequally apportioned to stakeholders, the community, customers and beneficiaries of the project. He submitted that the Proponent, the landowners of the project site and the turbine suppliers should be held legally liable for the project's costs to society and community. He submitted that options should be pursued that would add real value to the Victorian community, such as a research component where every renewable energy facility will contribute to a state research fund to address matters such as power technology, noise and economies of scale.

(ii) Discussion

The Panel is troubled by aspects of Mr Klapish's evidence.

The fact that Mr Klapish considered that there was an overwhelmingly positive response to the project among those he had spoken to indicates the highly selective nature of the consultation he has undertaken so far. It was abundantly clear to the Panel that there is not widespread acceptance of the project or its benefits among the immediately surrounding community. The communities in Winchelsea and Inverleigh will not be directly impacted by the project, unlike the immediate community in and around Gnarwarre. While Mr Klapish made some attempts to contact the Gnarwarre Landcare Group, no attempts appear to have been made to contact or engage with those most affected by the project, including the Gnarwarre Community Association. This is regrettable.

There is a suggestion in Mr Klapish's evidence that he may not see much utility in engaging closely with the immediate neighbours in relation to the Community Benefit Fund, as they are unlikely to change their minds about the project. The Panel fundamentally disagrees. It is widely recognised that proper, meaningful and respectful community engagement, and comprehensive community benefit sharing including with those who are most impacted, can deliver positive results, and can lessen the impacts of a project on the surrounding community.

The Community Benefit Fund will not (and is not intended to) offset or compensate individual landowners for the impacts the project is likely to have on them or their land. This is why a properly developed community benefit sharing package needs to include other more direct forms of benefit sharing for those most affected, such as neighbour payments, rooftop solar panel installations, screening vegetation and a 'beyond compliance' approach. The Proponent does not intend to provide any community benefit sharing beyond the Community Benefit Fund. The Panel agrees with DELWP that this falls well short of the expectations set out in the Community Engagement and Benefit Sharing Guide.

The deficiencies in the proposed community benefit sharing are not able to be remedied with permit conditions. Community benefit sharing is a voluntary practice. Most proponents of renewable energy projects see the value in sharing the benefits of their

projects with those most impacted by the project. It is unfortunate that the Proponent has not taken the same view.

The Panel strongly encourages the Proponent, and any future operator of the project, to take a broader view of community benefit sharing, that extends beyond the Community Benefit Fund. It should consider more direct benefit sharing, for example through neighbour payments, with the individual landowners who will be most affected by the project. Not only will this help offset the impacts of the project on those individuals, it may assist in building a more constructive relationship with the surrounding community going forward, and build a social licence to operate. Similarly, the local community will be most affected by the project, and should have a say in how the Community Benefit Fund is spent.

(iii) Conclusion

The Panel concludes:

- The proposed community benefit sharing program, being limited to the Community Benefit Fund, falls well short of the expectations set out in the Community Engagement and Benefit Sharing Guide.
- These deficiencies cannot, however, be remedied by permit conditions, given the voluntary nature of community benefit sharing.
- The Panel strongly encourages the Proponent, and any future operator of the project, to:
  - engage more directly with the local community in the immediate area in relation to how the Community Benefit Fund is spent
  - consider more direct benefit sharing with the individual landowners who will be most affected by the project. Other forms of benefit sharing with those who are most impacted, such as neighbour payments, should be explored and prioritised.

8.5 Impacts on surrounding land, including the 1km 'buffer'

(i) Submissions

Many submissions raised concerns about the turbines effectively using neighbouring land within 1km of the turbines as a buffer. They were concerned that this would effectively sterilise the neighbours' ability to subdivide their land or develop it for additional dwellings associated with rural lifestyle farming, or to continue to farm the land. Ms Steel described concerns that were shared by many submitters:

> The presence of a buffer zone for the proposed Wind Farm developer, being unable to construct a turbine within 1km from a dwelling, exists for a reason, or several. And yet, without a dwelling, the turbines can be constructed within 100m of a neighbouring boundary (dependent on blade length and overhang). A piece of land not included in the hosting property should still require a buffer as neighbouring farming objectives, activities and principles do not necessarily correlate, and can still be affected by, a wind turbine within such a small distance. For example, low stress stock management has been high in our property management priorities and the possible stress on stock in reaction to increased noise, visible movement etc. is highly possible. A combination of both an increased buffer zone to boundaries as well as dwellings, and compensation or neighbour benefit sharing should be prioritised as an option for affected parties.

Mr Barry put it as follows:

> Fancy using someone else's land for your 'dirty work'. If this is such a viable development, then provide your own buffer zone, and take part in some decent community consultation! If this project is to be made acceptable to the community/state, it has to be mandatory that you provide your own buffer zones. To impinge on neighbours is a particularly noxious thing to do.

Council submitted that the development of dwellings in the vicinity of the site is subject to, and limited by, its rural tenements policy in Clause 22.01 of the Planning Scheme. Ten properties within 1km of the nearest proposed turbine are large enough to have potential for a new dwelling to be developed. Many of these exceed 80ha, on which a dwelling could be developed without a planning permit. Council has no control over whether (or where) dwellings are built on these properties, and cannot stop a landowner building a dwelling within 1km of a turbine should they choose to do so.

Council noted that for all these larger properties there would be opportunities to build any additional dwellings more distant to the proposed turbines. Several submitters, such as Warwick Peel and Ms Steel, pointed out that this could involve additional costs, for example of having longer access tracks and service connections to houses that could otherwise have been built closer to the roads.

The Proponent submitted that criticisms that the wind farm will prevent the development of land within 1km of a turbine are "*misconceived*". It submitted that the 1km limitation in Clause 52.32-2 imposes a constraint on the wind farm, not on the neighbour's land. It submitted that, with or without a wind farm, there is no guarantee that a permit would be granted for a dwelling on the surrounding properties (although some could build an extra dwelling without the need for a permit):

> The purposes of the zone include ensuring that non-agricultural uses, including dwellings, do not adversely affect the use of the land for agriculture. The Farming Zone does not promote rural-residential lifestyle blocks.

(ii) Discussion

The 1km limitation in Clause 52.32 only operates to prohibit a turbine from being built within 1km of an existing dwelling (unless the dwelling owner consents). It does not operate as a prohibition on future dwellings within 1km of an existing turbine.

That said, the Panel acknowledges that a dwelling located within 1km of a turbine is a less attractive proposition, and no doubt less valuable, due to the proximity of the turbines. For example, any future dwelling built within 1km of a turbine would not benefit from the noise limits in the New Zealand Standard.

The policy framework limits the development potential of the surrounding land, particularly for rural residential or lifestyle purposes, whether or not the project proceeds. The policy framework generally discourages the construction of additional dwellings in this area, unless they are directly related to the agricultural use of the land. Clause 21.06 discourages any proposal to use, rezone or subdivide rural areas for rural residential or urban residential development, and discourages uses not associated with an agricultural activity in farming areas.

The tenement provisions in Clause 22.01 limit the number of houses that are able to be built in the Shire's rural areas and encourage rural landholdings to be retained and not fragmented. Similarly, the Rural Strategy discourages the subdivision of rural land, seeks to prevent the proliferation of housing on small lots and housing unrelated to farming, and discourages uses not directly related to, or that would introduce conflict with, soil based agriculture and intensive animal agriculture industries.

In short, whether or not the project goes ahead, the development potential of land within 1km of the proposed turbines is already limited by the policy framework and the Zone. Subdivisions require a permit. Some of the surrounding landowners will require permits for additional dwellings, others will not. The turbines will not impact on the ability to develop the surrounding land, although the Panel recognises that the proximity of the turbines may make additional dwellings less attractive.

(iii) Conclusion

The Panel concludes:

- The turbines will not unduly impact on the development potential of the neighbouring land within 1km.

8.6 Health and wellbeing impacts

(i) Submissions

Many of the submissions raised concerns in relation to the personal physiological and psychological health impacts of the turbines. Concerns included sleep disturbance, the physiological effects of infrasound, headaches, nausea and other symptoms, and the ongoing effects of stress on local residents caused by the uncertainty provoked by the permit applications and the previous permit application for the Winchelsea Wind Farm. Submitters were concerned that there had not been enough research into the health effects of wind farms.

The Watts live in the closest non-stakeholder dwelling to the turbines, 1.15kms from turbine 15. They are concerned about the effects of 'wind farm syndrome' and vibroacoustic disease, including headaches, depression, dizziness, tinnitus, memory loss and irritability. They submitted that low frequency sound can cause sleep deprivation, fatigue, poor concentration and accidents, and that the symptoms of these syndromes can continue long after the source of low frequency sound or infrasound is switched off. They referred the Panel to a Work Health Organisation study that determined that noise, sleep disturbance and a bad view out a window can increase depression rates by between 40 and 100 per cent.

Many submitters described the severe psychological stress occasioned by the proposal, particularly given that the community had fought and lost a difficult battle against the Winchelsea Wind Farm back in 2008. Submitters told the Panel of the uncertainty affecting their lives while the permit for the Winchelsea Wind Farm remained on foot, and the relief they felt once that permit had expired five years after it was granted. Seeing the wind farm come back some 10 years later, in a more intensive form, with more and higher turbines, was quite devastating to some. The Maschmedt family described the impact this has had on them and their neighbours:

> The psychological stress caused to the residents back then resonates today. These victims are now my neighbours. My family and I are now subject to this psychological stress and we can only imagine what they are going through, for a second time. Stress is caused by loss of property value, potential health degradation through noise pollution, gross degradation of visual amenity, complete lack of consultation and the loss of connection to one's home and land.

Others described the impact of additional stress caused by the project on a broader rural community that is already under significant pressure. For example, Mr Barry submitted:

> Currently Australian agriculture is under enormous pressure. Not only by nature – we accept that. But by unfair world trade agreements, various local/international lobby groups, and diminishing returns. It is widely accepted that mental health in rural communities is an issue; and lip service is being made that they are doing it tough. We need more than that! Allowing such dysfunctional projects like this through will make it worse!

He went on to say:

> This proposed project (if it goes ahead) is another example of putting pressure on farmers who produce food for Australians – wheat, other grains, eggs, chicken meat, pork, wool and lamb grown locally. They are not asking for anything extra – just to be left alone to continue working hard, contributing to other Australians via tax, and enjoying their quiet life… We can't afford any more pressure – the benefits of living in the country are diminishing (needing more land and enterprises becoming more complex and varied).

Many submitters described the stress resulting from the loss in value of their properties caused by the wind farm, and the impacts this would have on their succession planning and retirement incomes. For example, Mr Russell told the Panel that he had considered selling his property if the project goes ahead. He had had some potential buyer interest in the property. However when he explained that a wind farm was proposed just over 2kms from his house, potential buyers lost interest. Consequently he feels trapped on a now near worthless property that he has worked on building up for decades.

Ms Steel described the succession planning issue well:

> Although it appears that the proposal does not directly impact neighbours currently, long term the wind farm has potential to narrow the options and limit choices for future planning and succession. Succession planning in generational properties is fraught with enough issues and complications without adding further encumbrances to choices long-term. The proximity of turbines to boundaries cannot help but limit options. For example, a permit for a dwelling may be granted to build as far away as the block allows from the turbine, but this will be at some distance from roads and therefore amenities, making it far more costly to connect to power, water etc. In many cases, such planning is already in place, with significant investment of time and assets having already been contributing to these long-term goals. This significant alteration is an issue of a broader social nature, of many families in the area, that needs to be considered in more detail in regards to proximity to boundaries, not only dwellings.

(ii) Discussion

Direct health impacts from turbines

The Panel has no reason to doubt the genuine concern that submitters have expressed about the possible health effects of wind farms, including due to low frequency noise or

infrasound. There is a considerable amount of anecdotal information about these possible effects, and it is not surprising that the community is concerned about them.

Mr and Mrs Watt referred the Panel to two articles sourced from the internet (Document 87). One of the articles, undated by Thomas Jones, relates to Wind Turbine Syndrome and Vibroacoustic Disease. The other, by the Society for Wind Vigilance and also undated, relates to visual health effects of wind turbines. Both raise significant concerns about the possible health impacts of turbines. While both articles reference a number of sources which appear to include published scientific papers, the qualifications or expertise of the authors is unknown. The articles themselves are not scientific publications, and there is no evidence that the articles have been scientifically reviewed. The Panel is therefore not able to place much weight on these articles.

Decisions about whether to grant a permit for a wind farm should be based on the best available, scientifically reliable information and research. The Panel has looked to the NHMRC Information Paper and Statement published in February 2015 for guidance. These publications provide an independent and extensive review of the relevant literature by experts in the field. In total, the review included over 5,200 references, including public submissions.

The NHMRC Information Paper states:

> After careful consideration and deliberation, NHMRC concluded that there is currently no consistent evidence that wind farms cause adverse health effects in humans. This finding reflects the results and limitations of the direct evidence and also takes into account parallel evidence on the health effects of similar emissions from other sources.
>
> Given the poor quality of current evidence and the concern expressed by some members of the community, there is a need for high quality research into possible health effects of wind farms, particularly within 1,500 metres (m).

The NHMRC Statement suggests that there are no significant effects on physical or mental health at distances greater than 1,500m from wind farms. It says that more research is warranted within 1,500m of a wind farm, but does not conclude that there is likely to be health effects within 1,500m.

Stress

The Panel is in no doubt that the project has caused significant levels of stress for some in the surrounding community. Some submitters told deeply personal stories about how the previous wind farm application had destroyed families and long-standing friendships, and impacted on mental health. Others described very traumatic events in their lives, and the solace that they gained from their properties. For these submitters, their homes are a critical part of their sense of family and security. They are genuinely concerned that the wind farm will undermine, or even destroy, the solace and security they gain from their homes and properties.

The Panel also accepts that the project has had a broader impact on the surrounding farming community – one that is already under pressure from other sources, as Mr Barry described. It will impact on their future plans for their land, and succession planning.

The Panel discusses the implications of the stress caused by the project in Chapter 8.9.

(iii) Conclusion

The Panel concludes:

- There is no basis on which the Panel is able to recommend against the grant of a permit for the wind farm on the grounds of possible health effects.
- There is no doubt that the project has caused a significant level of stress in the surrounding community. The implications of this are discussed in Chapter 8.9.

8.7 Community division

(i) Submissions

Several submissions highlighted the divisions within the community caused by the project. Mr Richmond submitted:

> This proposal has certainly divided a community and we all know the importance of community spirit. It has destroyed long-term friendships, and divided families …
>
> Who could seriously think that renewable energy isn't a great way forward but this is purely a discussion on where we select the locations for thee exciting proposals to take place. Surely we do not need to cause people the pain, anguish and mental stress that this proposal is leaving on that was a close knit community.

Many submitters described their distress at the loss of friendships between those who supported the project (or the previous Winchelsea Wind Farm), and those who did not. Submitters highlighted the divisions caused by the perception that some – particularly the project site owners – will do well out of the project financially, while others who may be just as, or more, heavily impacted will get no financial rewards.

(ii) Discussion

There seems little doubt that the project has resulted in division within the community, between those who support the project and those who do not, and those who will benefit directly from the project and those who will not. Community division caused by wind farm proposals has been raised in several previous Panel reports, particularly in the context of the effects on rural communities. For example, the Panel considering the Mortlake Wind Farm stated (at page 69):

> Rural communities share many similarities with urban communities. The Panel understands and accepts that they are not naturally idyllic, joyous and harmonious and share many of the same strengths and weaknesses as urban communities.
>
> However they are defined by a higher degree of interdependence than urban communities. This is required to keep local institutions such as the CFA, sports clubs, schools and service organisations running as well as basic human relationships such as social contact or pulling together to (for example) help out a neighbour who is injured to get their crops in at the right time.
>
> The Panel considers the impact of community division is felt more keenly in such development projects as it has the opportunity to influence almost every aspect of rural life. This is not the same as conflict over planning applications in urban areas.

The Mortlake Panel recommended that government agencies investigate the issue of community division, with the aim of developing protocols for engaging and supporting communities affected by large wind farm developments. Since then, DELWP has published

the Community Engagement and Benefit Sharing Guide, which highlights the many benefits of a meaningful community engagement program, including reducing the risk of community division.

The Panel makes the observation that the levels of community division observed in this project were, like community opposition, far more significant than for some other, larger projects in the area. If the project proceeds, the Proponent will need to ensure it has comprehensive programs in place to re-engage with those members of the community who oppose the project, which will hopefully go some way to addressing the divisions within the community.

(iii) Conclusions

The Panel concludes:

- There seems little doubt that the project has resulted in significant division within the community. The implications of this are discussed in Chapter 8.9.

8.8 Proposed complaints handing process

(i) Submissions

Mr Wissink and others expressed some concern in relation to whether local councils have the capacity to review and assess complaints about wind farms, particularly in relation to technical issues such as noise. Mr Wissink submitted that complaints should be handled by an alternative agency such as the Environment Protection Authority, which should be properly resourced to examine and review complaints. He submitted that at the moment, the only option available to the community appears to be legal action which is costly, lengthy and unsatisfying.

(ii) Discussion

The Wind Farm Guidelines require proponents to establish complaints management processes. The complaints management conditions included in DELWP's without prejudice permit conditions (Document 85) are consistent with those attached to the Wind Farm Guidelines, and are consistent with the principles outlined in the Community Engagement and Benefit Sharing Guide.

The Community Engagement and Benefit Sharing Guide states that best practice complaints management involves:

- making a direct phone line available to key staff who have the skills to receive the complaint and the capacity to immediately respond
- ensuring the staff member responsible has relevant training in dispute resolution, non-violent communication and active listening
- demonstrating responsiveness to the complaints and reporting on the progress/resolution of complaints to key stakeholders.

Should the project proceed, the Panel encourages the Proponent and the Responsible Authority to have regard to the Guide when preparing, assessing and approving the Complaint Investigation and Response Plan.

The Panel acknowledges the concerns of submitters in relation to Council's capacity to administer and enforce the complaints management process. Council may not have staff with the technical expertise to independently verify compliance with some of the more technical aspects of the permit, such as the noise conditions.

However, the permit conditions require many of the more technical aspects to be undertaken in consultation with, or to the satisfaction of, other agencies. For example, the Bat and Avifauna Management Plan must be prepared in consultation with DELWP. Mortality monitoring under the Bat and Avifauna Management Plan must be reported to DELWP. The noise conditions require noise assessment and monitoring to be undertaken by suitably qualified acousticians and peer reviewed by an accredited auditor. These conditions go some way to alleviating the administration and enforcement pressures that might otherwise be placed on Council.

Other agencies can supplement Council's administration and enforcement roles. For example, the National Wind Farm Commissioner is an independent role appointed by the Commonwealth Government to (among other things) receive and investigate complaints from concerned community members about wind farms, promote best practice in the operation of wind farms, and provide greater transparency related to proposed and operating wind farms.

(iii) Conclusions

The Panel concludes:

- Complaints handling processes can be suitably managed by permit conditions. The proposed conditions contained in DELWP's without prejudice permit conditions (Document 85) are appropriate.
- Other avenues, such as the National Wind Farm Commissioner, provide a supplementary mechanism for complaints in relation to the wind farm.

8.9 The Panel's overall assessment of social impacts

Planning Advisory Note 63 provides guidance on assessing social impacts under sections 60(1)(f) and 60(1B). The Responsible Authority (and the Panel) must first identify whether the proposed use or development may have a social effect. Then it must consider whether that effect is significant.

The Advisory Note makes it clear that the number of objectors does not, of itself, indicate that the proposed use or development will have a social effect. Rather, the number of objectors may indicate a significant social effect. If so, the Responsible Authority must have regard to that fact in considering whether the use or development may have that effect.

In the preceding chapters, the Panel has found that the project will result in social impacts. These include division within the surrounding community and a significant level of stress for some in the community. The Panel must now determine the relevance and significance of these social impacts. It must balance any significant social effects with any other significant effects that the proposal may have, and integrate the relevant policies and planning provisions to decide whether the proposal produces an acceptable planning outcome that achieves a net community benefit.

The Proponent submitted that the social impacts identified in submissions are not relevant. It submitted that the impacts relate to the application process, not the project itself. It submitted that "*there is no evidence of the contended effects; it is just assertion*", and that there is no way of identifying whether the effects are significant. Further, there was no relevant decision guideline or policy in the Planning Scheme that identifies social acceptance, social licence or community engagement as a relevant consideration in relation to whether or not a permit should be granted. It submitted:

> … Objection alone is not a significant social effect. An individual's emotional response to a proposal is not a social effect. The Tribunal in *Rutherford* cautioned against construing individual reactions as social effect or indicating social effect.
>
> On proper analysis, there are no significant social effects arising from the proposed use and development before the Panel, beyond the commonly held complaints as to matters arising from the relevant planning context such as visual impact, noise and ecological impacts. These issues are to be assessed regardless of the numbers of people complaining of them.

Several VCAT cases provide guidance as to when a proposed use or development can be said to have a significant social effect for the purposes of section 60(1)(f). One of the leading cases, referred to in Planning Advisory Note 63 and the Proponent's submissions, is *Rutherford & Ors v Hume CC* (Red Dot)[14] [2014] VCAT 786. That decision indicates that the social effect must be:

- significant
- caused by the proposed use or development
- recognised under the planning system (the planning system recognises social impacts that affect the community at large, or a section of the community, rather than individuals)
- sufficiently probable to be significant.

Backman & Company Pty Ltd v Boroondara CC (Red Dot) [2015] VCAT 1836 supports the principle outlined in *Rutherford* that the social effect must arise from the proposed use or development, not from the application process. The Tribunal stated:

> The anxiety caused by the rezoning process is not a social effect of the proposal and fear of change is not a social impact of itself.

The Panel does not agree with the Proponent that the social impacts in this case relate to the application process, rather than the project. While the Proponent's poor approach to consultation and engagement has certainly contributed to these impacts, the application process is not the cause. The stress, fear and division within the community is caused by the project itself.

Rutherford indicates that there should be proper evidence of the significant social effect, preferably through a social impact or socio-economic assessment. The Proponent

[14] A Red Dot decision is one which VCAT designates as noteworthy because they are significant, unusual or controversial. Red Dot decisions often outline the key principles VCAT considers should be applied under a particular section of the Act.

contended that there was no social impact assessment that provided evidence of the social impacts of the project. The Panel does not consider that a social impact assessment is required to establish the existence of a social impact. The submitters themselves described first-hand how the project will impact on them and the surrounding community. The Panel has found that the submitters' concerns are genuine. This is sufficient evidence to satisfy the Panel of the existence of the social effect.

The Panel must consider whether the social impacts arising from the project are significant, and the types of impact recognised by the planning system. While it is clear from submissions that the project will impact some more deeply than others, the Panel is satisfied that the impacts described by the community are significant. These impacts are not restricted to one or two individuals. The impacts, particularly community division, will be experienced by the community more broadly. The Mortlake Wind Farm Panel recognised that rural communities are more interdependent than urban communities, for social contact, neighbourly support and for the running of local volunteer-based organisations such as the Country Fire Authority and Landcare groups. Community division in rural areas can affect almost every aspect of rural life.

As noted previously, the project has generated a significant number of objections, many more than other, larger projects in the area. While this is not, of itself, an indicator of a social effect, it supports the Panel's conclusion that the project is likely to have a significant social effect.

Having found that the project is likely to have a significant social effect, the Panel must balance that effect with any other significant effects and benefits of the project, and assess the permit applications having regard to the objectives of the Act, the provisions of and relevant policies and decision guidelines in the Planning Scheme, and the other considerations in section 60 of the Act. This is addressed in Chapter 11.

Some submitters called for the permits to include tighter expiry periods than those that applied under the Winchelsea Wind Farm permit (which required construction to commence within five years). In light of the uncertainty created for the community by the previous Winchelsea Wind Farm permit, and the stress and community division caused by the project, the Panel considers that shorter expiry periods are appropriate. The permits, if they are granted, should expire if construction is not commenced within three years, and completed within six.

8.10 Recommendation

The Panel recommends:

> **If permits are issued, include a condition that the permit expires if construction is not commenced within three years, and completed within six years.**

9 Amenity impacts

Wind and solar farms can have a range of amenity impacts including shadow flicker and blade glint from wind farm turbines, glare and glint from solar panels, interference with electromagnetic signals and impacts on traffic and local roads. Visual and noise impacts cam also affect the amenity of the area. These are discussed separately in Chapters 4 and 5.

9.1 Shadow flicker, blade glint and light spill

(i) The issues

The issues are:

- shadow flicker and glint from the blades of the turbines
- glint, glare and light spill from the solar panels.

(ii) Relevant policies, strategies and studies

The decision guidelines in Clause 52.32-5 require the Responsible Authority to consider the effect of blade glint and shadow flicker on the surrounding area.

The Wind Farm Guidelines state that:

- blade glint can be minimised by finishing blades with a non-reflective treatment
- shadow flicker can be modelled in advance, and mitigated by siting and design
- shadow flicker must not exceed 30 hours per year in the area immediately surrounding dwellings and fenced garden areas.

The example conditions appended to the Guidelines include conditions requiring:

- non-reflective colours and finishes to minimise visual impact
- less than 30 hours per year of shadow flicker at any pre-existing dwelling (unless the landowner agrees otherwise).

The draft Solar Farm Guidelines state that a glint, glare and light spill management plan should be prepared and lodged with a permit application. The plan should include:

- use of anti-reflective solar panel coatings and non-reflective frames
- adjustment of panel orientation relative to glare risks, such as oncoming traffic travelling on a road descending from an elevated area
- strategically located screening that considers topography and surrounding land uses, including possible off-site plantings, by agreement with the relevant landowners
- careful consideration of the height, orientation and design of lighting.

The Environment Protection and Heritage Council produced draft National Wind Farm Development Guidelines in July 2010 (the EPHC Guidelines). The EPHC Guidelines provide an assessment methodology and recommended modelling assumptions in relation to shadow flicker. The Guidelines state that if modelling predicts that a dwelling will experience less than 30 hours per year, no further investigation is required.

(iii) Evidence and submissions

A shadow flicker assessment report dated 8 December 2017 was prepared by Prevailing Australia Pty Ltd and submitted with the wind farm application. The shadow flicker assessment considered both the worst case, which overestimates the number of annual hours of shadow flicker experienced at a specified location, and the expected case, where the results of the worst-case model are scaled according to the likelihood of cloud cover (based on cloud cover data from the Bureau of Meteorology). The worst case results are tabulated in Figure 10 below.

Residence	Stakeholder/ Landowner	Distance to nearest turbine	Impacted dwelling	Shadow flicker[1] [hours/year] Worst case
A	Non-Stakeholder	1177	No	0
B	Non-Stakeholder	1494	No	0
C	Non-Stakeholder	2041	No	0
D	Non-Stakeholder	2231	No	0
E	Non-Stakeholder	2510	No	0
F	Non-Stakeholder	2399	No	0
G	Non-Stakeholder	2615	No	0
H	Non-Stakeholder	2922	No	0
I	Non-Stakeholder	2418	No	0
J	Non-Stakeholder	1530	No	0
K	Non-Stakeholder	1651	No	0
L	Landowner	755	Yes	100.3

Notes:
1. Based on 158 m rotor, 120.9 m hub height

Figure 10 Worst case results from the shadow flicker assessment

The assessment report concluded there are no dwellings within the assumed shadow flicker zone of 1060m, with the exception of the landowner dwelling. Shadow flicker modelling undertaken in accordance with the EPHC Guidelines confirms compliance with the limit of 30 hours per year for non-stakeholder dwellings. The Panel was not presented with any contrary evidence related to shadow flicker.

Shadow flicker was raised as a concern in submissions. The Watts, who live in one of the closest non-stakeholder dwellings, raised health concerns arising from living close to wind farms, which they believed were caused in part by shadow flicker. They submitted that a shadow flicker study must be conducted during the planning stage of a wind farm, based on the actual location of the turbines. They submitted that the study should include the entire neighbouring properties, not just the house, and should calculate the shadow flicker for both sun and moon induced flicker using conservative assumptions. Mr Russell also raised concerns about the health impacts of shadow flicker.

(iv) Discussion

The Panel accepts the shadow flicker assessment report which shows that using a worst case analysis the only property within a radius of 1km of the site affected by shadow flicker was the stakeholder dwelling on the site. The study addresses the first concern of the Watts (that a study should be undertaken during the planning stage of a wind farm). Their second concern also appears to be addressed, as the report shows zero shadow flicker outside of the 1km radius from the site. The report does not address the issue of moon induced shadow flicker, and the Panel was not presented with any information on which to draw conclusions about this.

The Panel acknowledges the concerns of the submitters in relation to the possible health effects of shadow flicker. However, as far as the Panel is aware, there is no scientific evidence that shadow flicker causes health concerns. The NHMRC Information Paper and Statement published in February 2015 state that shadow flicker is generally present only at distances of less than 1.4kms from wind farms. The Information Paper states (at page 2) that there is insufficient direct evidence to draw any conclusions on an association between shadow flicker produced by wind farms and health effects.

Blade glint involves the regular reflection of the sun off rotating turbine blades. Blade glint depends on a combination of circumstances arising from the orientation of the turbine housing, the angle of the blade and the angle of the sun. The reflectiveness of the surface of the blades is also important. Blade glint is not generally a problem for modern wind turbines, provided the blades are coated with a non-reflective finish. DELWP's without prejudice conditions for the wind farm (Document 85) include a condition requiring all buildings and works, including the turbines to be non-reflective.

There has been no assessment of glare, glint and light spill from the solar farm. Generally speaking, this is not an issue because modern solar panels have very low reflectivity. Support structures for the panels can be built from low reflective materials. During its two site inspections, the Panel noted numerous farm building structures and grain silos made of reflective iron materials, and it does not anticipate that the solar farm will significantly add to the reflective elements already present in the landscape. Landscaping around the perimeter of the solar farm should help to address any related issues of glare, glint and light spill.

The solar farm application did not include a glint, glare and light spill management plan, as required under the (albeit draft) Solar Farm Guidelines. Given the absence of any assessment of glare, glint and light spill from the solar farm with the application, it will be important for the solar farm permit (if one issues) to include a condition requiring a glint, glare and light spill management plan to be prepared and implemented. A condition should also be included requiring the panels and supporting structures to be constructed of non-reflective materials.

(v) Conclusions and recommendation

The Panel concludes:

- Based on the shadow flicker assessment provided with the application, no non-stakeholder dwellings will be exposed to shadow flicker.

- Blade glint should not be an issue provided the blades are coated with a non-reflective finish. DELWP's proposed without prejudice conditions for the wind farm address this issue appropriately.
- If a permit for the solar farm issues, conditions should be included requiring a glare, glint and light spill management plan, and requiring the panels and supporting structures to be constructed of non-reflective materials.

The Panel recommends:

If a permit for the solar farm issues, include conditions requiring:

a) a Glint, Glare and Light Spill Management Plan to be prepared and implemented to the satisfaction of the Responsible Authority

b) the solar panels and supporting structures to be constructed of non-reflective materials.

9.2 Electro-magnetic interference

(i) The issue

The issue is whether the wind farm may generate electromagnetic interference (EMI) that could disrupt services including:

- 3G and 4G mobile phone reception
- satellite television and internet
- GPS guidance systems used for precision agronomy
- point-to-point telecommunications networks
- radio communications services including TV and radio services.

(ii) Relevant policies, strategies and studies

The decision guidelines in Clause 52.32-5 require the Responsible Authority to consider the effect of the proposal on the surrounding area in terms of EMI.

Section 5.1.2 of the Wind Farm Guidelines notes that EMI from turbines will usually be relatively limited. It states:

> The potential for electromagnetic interference from the generation of electricity from a wind energy facility should be minimised, if not eliminated, through appropriate turbine design and siting.
>
> The siting of wind turbines in the 'line of sight' between transmitters and receivers should be avoided.

The model permit conditions appended to the Guidelines require:

- a baseline survey to determine average radio and TV reception strength within 5kms of the site
- a complaints handling and restoration process for impacts on radio or TV reception.

(iii) Evidence and submissions

A number of submitters raised specific concerns about interference to 3G and 4G services, satellite internet and GPS guidance systems used for precision agronomy.

The planning application included a report titled 'Impact on EMI and Point to Point Communications' authored by Jerome Rowcroft. The latest version 4 was dated 4 December 2017. It appears to be a document prepared by the Proponent, as the report was authorised by Alistair Wilson. It is not clear what Mr Rowcroft's qualifications are.

The report assessed the impact of the wind farm on AM and FM radio, digital TV, satellite television and internet, point to point microwave communication links, VHF and UHF signals, mobile phone services, weather radar and aviation navigation facilities. The report concluded:

> In particular, [turbine] layout optimisation has been completed to avoid point-to-point microwave links, and giving a 400m exclusion zone around the existing mobile phone tower. Consultation and correspondence with the telecommunication providers [Telstra and Optus] has confirmed that their services will not be impacted, based on the layouts provided for the new proposed wind turbines with tip height of 200m AGL and blade length of 79m.
>
> While some influence on radio signal reception can be expected, this is anticipated to extend only to the order of tens of metres from turbines. FM signals will be largely unaffected, unless signal to noise ratios are already very low.
>
> Digital television signals may be affected for residences with 5km of the wind farm if the signal strength is low. The signal strength in this area is generally rated as good, however, any adverse effect can be mitigated by directing the receiver at an alternative signal source – which have been demonstrated to exist in the area or securing a Federally assisted Satellite TV option due to the low signal strength.
>
> The wind farm will have no significant impact on weather radars and aviation communications.

DELWP noted that the model conditions attached to the Wind Farm Guidelines are somewhat narrow in their scope, being limited to radio and TV reception strength. It submitted that conditions should be broadened to cover all telecommunications signals.

(iv) Discussion

There are a number of operating wind farms in Victoria. No information was brought to the Panel's attention that suggests that operating wind farms are causing EMI impacts.

The Panel places limited weight on the EMI assessment submitted with the permit applications. It appears to be an internal document, and the qualifications or expertise of the author are unknown. While it appears that there was some level of engagement or consultation with Telstra or Optus, there is little information regarding what was referred to them, and the responses from Telstra and Optus attached to the EMI assessment contain no analysis supporting their conclusions that the project will not impact on 3G and 4G mobile phone services. The assessment does not specifically address submitters' concerns related to interference to GPS guidance systems used for precision agronomy.

The Panel agrees with DELWP that the model conditions attached to the Wind Farm Guidelines are overly narrow in scope, considering all of the radiocommunications, broadcast and telecommunications services available today. If a permit for the wind farm issues, it should include conditions requiring a robust baseline survey from a suitably qualified independent person of all the potential services that could be affected by EMI. This should include all of the services listed in the EMI assessment, with the addition of GPS

guidance services. The permit should include a complaints handling process, and a requirement that the Proponent restore any disrupted services to pre-construction standards. DELWP's proposed permit conditions go some way to addressing these requirements, although the baseline survey condition needs strengthening.

(v) Conclusions and recommendation

The Panel concludes:

- The Panel places limited weight on the EMI report submitted with the permit applications, as it appears to be an internal document authored by a person with unknown qualifications or expertise.
- If a permit for the wind farm issues, it will need to include a condition requiring a comprehensive baseline survey of all services that could be affected by EMI by an independent, suitably qualified person prior to construction commencing.
- Permit conditions will also need to be included requiring the Proponent to establish a process for handling complaints relating to electromagnetic interference, and to restore any affected services to baseline levels. DELWP's proposed conditions are appropriate in this regard.

The Panel recommends:

> **If a permit for the wind farm issues, include a condition requiring a comprehensive assessment of potential electromagnetic interference by an independent, suitably qualified person prior to construction commencing. The assessment must include a baseline survey of all relevant services, including mobile phone services and GPS guidance systems used for precision agronomy.**

9.3 Traffic impacts

Traffic impacts can arise from renewable energy projects, particularly during the construction phase when large components are being delivered to the site. An example is shown in Figure 11.

Figure 11 **Photograph of a turbine blade being delivered to a wind farm site**
Source: *Traffic Impact Assessment by GTA Consultants, page 9*

(i) The issues

The issues are:

- disruptions from project traffic, particularly construction traffic and vehicles delivering over-dimensional loads
- impacts on condition of local roads from project traffic, including heavy vehicles.

(ii) Relevant policies, strategies and studies

The model permit conditions appended to the Wind Farm Guidelines include conditions requiring wind farm operators to:

- design and locate vehicle access points to certain standards, including avoiding through-traffic conflicts
- prepare an existing conditions survey of local roads and access points before construction starts
- prepare and implement a Traffic Management Plan to manage traffic impacts, including a program to inspect, maintain and repair local roads used by construction traffic
- where required, upgrade local roads to the satisfaction of the road management authority prior to construction commencing.

(iii) Evidence and submissions

Traffic Impact Assessment

The Proponent submitted a Traffic Impact Assessment with the permit applications, prepared by GTA Consultants. Key findings and conclusions were:

- During the 12 month construction period, there will be an estimated:
  - 178 trips to deliver over-dimensional loads to the site
  - 2,636 trips for other construction vehicles
  - 16,700 light vehicle trips for construction staff accessing the site.
- The theoretical capacity of the surrounding roads is more than adequate to cater for the anticipated traffic volumes generated by the project.
- There will be a number of instances where over-dimensional vehicles will extend beyond the available road width, requiring upgrades to roads in the area, including some pavement widening.
- Peels Road should be upgraded to a bitumen seal between Inverleigh-Winchelsea Road and Gnarwarre Road.
- A Traffic Management Plan will be required to address the key traffic considerations of the construction and operational phases of the wind farm. It should be prepared in consultation with VicRoads and Council.

Community

Several submitters raised concerns in relation to the impact of the project on the local road network, particularly in the construction phase when heavy over-dimensional loads will be delivered and there is likely to be a large number of trucks coming to and from the site, for example to deliver the concrete required for the turbine footings. The Campbells submitted that the estimated 19,000 extra trips to and from the site is excessive, and would impact on

the quiet rural nature of the area. They submitted that all local access roads should be upgraded and provided with proper drainage to cope with the additional traffic generated by the project.

Several submitters noted that Mount Pollock Road appeared to have not been considered in the Traffic Impact Assessment. Mr Tribe and Ms White submitted that Mount Pollock Road was in poor condition, and should be fully sealed. They acknowledged that is may not be used for heavy vehicles, but submitted that it would likely be used by project staff given it is the quickest and most direct route to the site from the Princes Highway. Others referred to a damaged culvert on Gnarwarre Road that has resulted in a reduced speed limit on a section of the road to the east of the site. This also appears not to have been taken into account in the Traffic Impact Assessment.

The Campbells were concerned about the proposed location of the site entrance on Gnarwarre Road. It is close to the entrance to the piggery on their land. They explained that feed trucks, stock trucks and staff vehicles are regular and frequent throughout the year and at different times of the day and night. They submitted that many of the farmers in the area are grain growers, and the 178 planned road closures to allow for heavy and oversized vehicles carrying windfarm components will limit access for local farming traffic:

> Hold ups for farmers at these busy times can become an added expense or a loss of income as farmers need to complete these jobs when windows of opportunity arise ie. when weather and grain conditions are absolutely right.

Council and DELWP

Council is the road management authority for many of the local roads proposed to be used in connection with the project. Council's draft without prejudice permit conditions (Documents 76 and 77) included requirements for an existing conditions survey before any works commence, and that the roads are in the same or better condition at the end of the construction phase, at the cost of the wind farm developer.

DELWP supported the conditions proposed by Council, noting that they are standard on wind farm permits. It submitted that a Traffic Management Plan is also a standard requirement for wind farm permits, to ensure safe and efficient arrangements and mitigate impacts on the local community, including school bus routes and agricultural production. It noted that some of the existing local roads appear to be in poor condition, and their ability to accommodate heavy or over-dimensional vehicles may need to be further explored. Required upgrades should be provided prior to works commencing.

DELWP referred the permit applications to VicRoads, which indicated no objection to the proposal. It noted that road works required for over-dimensional loads had been addressed in the draft Traffic Management Plan submitted with the applications, and that a Traffic Management Plan will be endorsed and will form part of the permit should one be granted.

DELWP noted that it is unclear if road works or road widening needed to allow delivery of turbine components to the site will require the removal of vegetation. DELWP prefers that permit applications include details of potential vegetation removal that may be required in association with road upgrades, so that a comprehensive assessment of the project's total impact can be made.

(iv) Discussion

The draft permit conditions tabled by DELWP and Council contain a number of conditions requiring the Proponent to manage the traffic impacts associated with the project. The Proponent will be required to survey the condition of public roads, and identify and complete any upgrades that may be required to accommodate project traffic before works commence. Upgrade works would be secured with a bond. Conditions specifically require Inverleigh-Winchelsea Road, Peels Road or Gnarwarre Road to be surveyed, and any damage repaired within agreed timeframes. In light of the submissions, the Panel considers that this should be extended to Mount Pollock Road.

A Traffic Management Plan will be required which will identify and address any anticipated traffic hazards, maintain and (where necessary) upgrade local roads, and maintain service levels on the local road network. The Traffic Management Plan will require a thorough investigation of local traffic conditions, including the condition of Mount Pollock Road and the culvert in Gnarwarre Road (if those roads are to be used by project traffic). If upgrades are required, they will need to be completed before works commence.

Decommissioning may also have traffic impacts, particularly as large turbine components are removed from the site. The draft permit conditions tabled by DELWP (Document 85) require a Decommissioning Traffic Management Plan to be approved by Council prior to decommissioning works commencing.

The Panel acknowledges the Campbells' concerns that an additional 19,000 vehicle movements has the potential to impact on the quiet, rural nature of the area. However the majority of these trips will be made by lighter vehicles, many of which will be no larger than typical farm traffic in the area. The trips will be concentrated in the 12 month construction period, but will then be spread over the 20 year life of the project.

The Panel is satisfied that these conditions will enable the traffic impacts of the project to be appropriately managed, should the project proceed. The conditions provided by DELWP and Council are generally consistent with the model permit conditions attached to the Wind Farm Guidelines, and the Panel is satisfied that they are appropriate, subject to some modification to improve their operation and reduce unnecessary duplication. In particular, the Panel does not consider that the solar farm permit needs traffic conditions as extensive and detailed as those for the wind farm (should permits issue). The works required to construct a solar farm are less extensive than those required for a wind farm. In particular, solar farms do not require over-dimensional loads to be delivered to the site.

The Panel accepts some clearing of roadside vegetation may be necessary along access roads. It acknowledges DELWP's position that the preferred approach is to include details of any potential vegetation removal that may be required in association with road upgrades, so that a comprehensive assessment of the project's total impact can be made. In this case, the assessment of vegetation removal associated with road upgrades cannot be made until details of the access routes to the site have been finalised. If native vegetation needs to be removed, further permits will need to be obtained.

(v) Conclusions and recommendation

The Panel concludes:

- While the project will impact on local traffic, particularly during construction and decommissioning, those impacts can be appropriately managed through permit conditions.
- The Panel generally supports the proposed conditions put forward by DELWP and Council, but considers that proposed conditions relating to the survey and repair of roads immediately surrounding the site should be extended to include Mount Pollock Road.
- If native vegetation needs to be removed in association with road upgrades, further permits will need to be obtained.

The Panel recommends:

If a permit for the wind farm issues, extend the conditions proposed by Surf Coast Shire Council and the Department of Environment, Land, Water and Planning requiring surveys of, and repair of any damage to, Inverleigh-Winchelsea Road, Peels Road and Gnarwarre Road to include Mount Pollock Road.

10 Other issues

10.1 Fire risk

(i) The issues

The issues are:

- increase in fire risk arising from the operation of the wind farm
- impact on fire fighting arising from the presence of the wind or solar farm.

(ii) Relevant policies, strategies and studies

The objective of Clause 13.02-1S (Bushfire) is to strengthen the resilience of settlements and communities through risk-based planning that prioritises the protection of human life. The policy applies to all planning and decision making for land that is within a designated bushfire prone area, subject to a Bushfire Management Overlay, or proposed to be used or developed in a way that may create a bushfire hazard.

Clause 71.02-3 of the planning scheme states that in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations.

(iii) Evidence and submissions

Both the wind and solar farm permit applications were accompanied by draft Environment Management Plans which included draft Fire and Emergency Response Plans. These plans would require endorsement by the Responsible Authority and, once endorsed, would form part of the permits. The draft Environment Management Plans stated that the Fire and Emergency Response Plans were based on guidelines provided by DELWP and incorporated feedback provided by the Country Fire Authority. The draft plans included requirements relating to water supply, vegetation management, access roads, staff training, emergency procedures and emergency contacts. The draft wind farm Fire and Emergency Response Plan stated that the turbines would have automatic internal fire suppression systems and that they would shut down automatically should the outside temperature exceed 45 degrees.

A number of submitters raised issues relating to fire management including the need for liaison with the local Country Fire Authority brigades at Inverleigh and Gnarwarre, the need for good fire emergency management planning. Submitters were also concerned about the limitations that the turbines would have on aerial fire suppression activities. The possibility that the tracks constructed as part of the project would assist suppression arose during discussion on fire management. Mr Jennings raised concerns in relation to the rigour of the proposed fire response processes.

DELWP stated that on 11 July 2018 the Proponent had been required to formally advise the Country Fire Authority of the wind farm proposal. No submission was received from the Country Fire Authority relating to the wind farm or the solar farm proposal. No expert witness was called in relation to fire management.

(iv) Discussion

The Panel understands that fire management is an important issue, especially for neighbouring landholders. It has considered carefully all the submissions it received on this issue. The Panel considers that fire management arrangements should apply to the site as a whole, and that it is essential that one Fire and Emergency Response Plan should apply to both the wind and solar farms.

The Panel does not consider that the construction of the wind or solar farm would lead to increased risk of fire on the site. The measures proposed for turbine shut down outlined in the draft Fire and Emergency Response Plan prepared for the wind farm should address any fire risk that may arise from turbine malfunction. The emergency procedures proposed in the Fire and Emergency Response Plans would provide the framework for managing any fire on the site.

The Panel accepts that there is a possibility that the presence of turbines could constrain aerial fire suppression on the site. However no evidence or information was presented to the Panel about the extent to which aerial firefighting facilities are used in the area, or may be used in the area in future. The Panel notes the Country Fire Authority did not object to the project or raise any concerns in relation to its impacts on aerial firefighting operations. The Panel considers that the tracks constructed to access the turbines (and the solar farm) would lead to improved ground-based fire vehicle access to the site.

The impacts of the project on aerial firefighting operations is discussed in Chapter 6.5(ii).

(v) Conclusions and recommendation

The Panel concludes:

- It is unlikely that the construction of the wind or solar farm would increase fire risk on the site, or significantly affect fire suppression activities on the site.
- The same Fire and Emergency Response Plan should apply to the proposed wind and solar farm.

The Panel recommends:

If permits are issued, include a condition on both permits requiring a single Fire and Emergency Response Plan to be prepared and approved for both the wind farm and the solar farm.

10.2 Flooding, drainage and water quality

(i) The issues

The issues are:

- avoidance and minimisation of construction impacts on surface water and groundwater
- potential changes to the rate of flow or the discharge point of water leaving the site
- potential changes in the discharge of saline groundwater.

(ii) Relevant policies, strategies and studies

Clause 14.02-2S (Water quality) aims to ensure that land uses potentially discharging contaminated runoff or waste to waterways are sited and managed to minimise such discharges and protect groundwater resources.

State Environment Protection Policy (SEPP) (Groundwaters of Victoria) and SEPP (Waters of Victoria) protect groundwater and surface water environments and beneficial uses, and set out environmental quality objectives and indicators to measure whether beneficial uses (for example, aquatic ecosystems supported by waterbodies) are being protected.

Various EPA and other publications provide guidance on avoiding and minimising construction impacts on surface water and groundwater, and storing and handling hazardous substances that could, if spilled, impact on water quality:

- EPA Publication 275: Construction Techniques for Sediment Pollution Control
- EPA Publication 480: Environmental Guidelines for Major Construction Sites
- EPA Publication 347: Bunding Guidelines
- Australian Standard AS 1940:2004 Storage and handling of flammable and combustible liquids.

Section 4.3.5 of the Wind Farm Guidelines indicates that an Environment Management Plan will be required, detailing how the site will be managed during construction, and setting out operational and maintenance requirements. Clause 52.32 requires an Environment Management Plan to be submitted with a permit application for a wind farm.

(iii) Evidence and submissions

In a letter to the Panel dated 7 January 2019 (Document 7), DELWP raised concerns related to hydrological issues, drainage and wetland management. The letter stated:

> There are several wetlands that are recorded in DELWP's "current wetlands" GIS layer, within close vicinity to the project site as well as a tributary of the Barwon River which runs just south of the property. Given the size of the solar development and site coverage (26.6ha) in panels and impervious surfaces there is potential to significantly change the hydrological characteristics. This may include changes to infiltration rates, surface flow rates and changes to flow patterns, volumes and water quality downstream. Such factors could impact on other natural values (e.g. current wetlands) and adjacent landowners. DELWP Environment recommends that a location specific or catchment scale hydrological study is undertaken. DELWP Environment can confirm to the applicant its expectations for a hydrological study.

The Gnarwarre Community Association raised the same issues in their presentation to the Panel. Other submitters were concerned that the project could impact on overland flows coming off Mount Pollock and running over their land.

(iv) Discussion

The Panel asked DELWP Environment whether their description of the solar farm as 'involving 26.6ha of impervious surfaces' was accurate, given there are proposed to be breaks between the rows of solar panels, and the area beneath the solar panels is not proposed to be paved. DELWP Environment responded stating:

> DELWP used the term 'impervious' to reference the potential individual and compounded impact of the solar panels on surface runoff. Our concern is about the potential concentration of runoff at the expense of dispersed rainfall infiltration. Cumulatively across the 26.6 ha of the solar component, this could change surface flow conditions within and adjacent the site. The impacts of this is unknown and given the size and scale of the development warrants assessment, and therefore some form of surface water assessment is appropriate. We note that the proponent has now proposed a Civil Construction Works Plan to cover matters including drainage.

The Proponent's closing submissions responded to DELWP's comments:

> As to hydrology, the Department's concern about 26 ha of 'impervious surfaces' is misplaced. The solar arrays are not impervious surfaces in the sense of preventing infiltration into the ground.

The Panel is not persuaded that the project is likely to impact on stormwater runoff in the manner outlined by DELWP Environment. The draft Solar Farm Guidelines do not highlight drainage and runoff concerns associated with solar farms. The rows of solar panels are separated, and the ground surface beneath the panels will not be substantially altered. The solar farm is set back some considerable distance from property boundaries. Even if the solar panels alter the stormwater runoff in the immediate vicinity, the Panel considers it unlikely that there would be off-site impacts.

Council explained at the Hearing that works which change the rate of flow or the discharge point of water across a property boundary, and any changes in the discharge of saline groundwater, require a permit under the Farming Zone. Therefore, in the unlikely event that the solar farm was to impact on stormwater flows outside the property boundaries, a permit would be triggered.

The draft permit conditions tabled by DELWP (Documents 85 and 86) require an Environment Management Plan to be prepared in consultation with DELWP, and approved by the Responsible Authority before development starts. The Environment Management Plan must describe measures to minimise the amenity and environmental impacts of the construction, operation and decommissioning of the project. It must include a Construction Environment Management Plan specifically addressing the impacts of construction activities. The draft solar farm conditions include conditions that specifically address drainage and stormwater runoff which the Panel considers appropriate to manage any likely impacts on flooding, drainage or water quality.

(v) Conclusions

The Panel concludes:

- The solar farm does not represent 26.6ha of impervious surface. The Panel is not persuaded that it is likely to have off-site impacts in relation to stormwater runoff or drainage, and does not consider that a hydrology report is necessary.
- Any changes to rate of flow or discharge point of water across the property boundary, or changes in the discharge of saline groundwater, will trigger a permit under the Farming Zone.

10.3 Heritage

(i) The issues

The issues are:

- impacts on Aboriginal cultural heritage values
- impacts on historic cultural heritage.

(ii) Relevant policies and standards

Clause 15.03 (Heritage) seeks to ensure the conservation of places of heritage significance and to protect and conserve places of Aboriginal cultural heritage significance.

The *Aboriginal Heritage Act 2006* requires a Cultural Heritage Management Plan (CHMP) to be prepared for any project that is a high impact activity, or within an area of Aboriginal cultural sensitivity.

The Victorian Heritage Register protects built sites of state heritage significance and the Victorian Heritage Inventory protects archaeological sites of state heritage significance.

(iii) Evidence and submissions

Aboriginal Cultural Heritage

Both the wind and solar farm permit applications were accompanied by a Cultural Heritage Due Diligence Report prepared by Green Heritage Compliance & Research Pty Ltd dated 17 October 2017 (the Heritage Report). This report stated that as the proposal is neither identified as a high impact activity, nor in an area of cultural heritage sensitivity, a mandatory CHMP is not required. The Heritage Report stated that preparation of a voluntary CHMP would be best practice to manage any unrecorded Aboriginal heritage values that may be present on the site.

DELWP advised (Document 10) that Aboriginal Victoria provided advice on 5 March 2017 that the wind farm proposal did not trigger a mandatory CHMP as none of the works were proposed in a regulated area of cultural heritage sensitivity.

Ms Kennedy of the Wadawurrung Aboriginal Corporation submitted (Wind farm submission 82) that as the Wathuarung Aboriginal Corporation had not assessed the site, a CHMP should be prepared. She stated that the area was abundant with intangible cultural stories and asked to be heard at the Hearing. Ms Kennedy was listed to be heard together with an expert witness from the Wathuarung Aboriginal Corporation, but as neither attended, the Panel was unable to clarify or expand on the issues that she raised in her submission.

Ms Steel submitted (Document 98) that there was local knowledge and oral history of middens, stone hearths and cutting and sharpening marks of rocks in the Mt Pollock area. She stated that although there had been significant ground disturbance and land clearing, sub surface artefacts were likely to remain. In her presentation to the Panel she also referred to a history of cultural song lines in the Mt Pollock area.

The Panel received a copy of a letter (Document 62A) dated 19 February 2019 to the Minister for Aboriginal Affairs from Paul Davis, General Manager of the Wathaurung Aboriginal Corporation. The letter stated that the Wadawurrung Traditional Owners had

identified tangible heritage and places of cultural significance in the area and expressed serious concerns regarding the management of the Aboriginal cultural heritage located within the proposed construction area. The letter requested that the Minister for Aboriginal Affairs direct the Proponent to prepare a CHMP.

Historical Cultural Heritage

The Heritage Report stated that the only known site of heritage significance on the site is the Victorian Heritage Inventory place H7721-0428 Mt Pollock Historic Site 1, located near the intersection of Gnarwarre Road and Mt Pollock Road. The report stated that this site consisted of cement lined foundations of bluestone, which would need further investigation to assess the relation of this structure to the various phases of land use and occupancy. It also stated that this small area north of Mt Pollock could be archaeologically significant. The Heritage Report stated that a Victorian Heritage Inventory Consent was not required for the existing scope of works. It also noted no parts of the site are affected by a Heritage Overlay.

(iv) Discussion

Aboriginal Cultural Heritage

Although both the Heritage Report and Aboriginal Victoria advised that a CHMP was not required for this site, the Panel considers it is unfortunate that the Proponent did not prepare a voluntary CHMP prior to submitting the permit applications. As noted in the Heritage Report, this approach is in line with best practice. The lack of a CHMP, which lead to the Wathaurung Aboriginal Corporation requesting the Minister for Aboriginal Affairs to direct the Proponent to prepare such a document, has created uncertainty in matters relating to Aboriginal cultural heritage.

The Panel considers that it is possible that the site may have significance to the Aboriginal community but is unable to comment further. It was unfortunate that Ms Kennedy of the Wadawurrung Aboriginal Corporation was not able to attend the Hearing in order to provide the Panel with more information on issues of concern to the Aboriginal community.

After the Hearing concluded, the Panel was provided with a copy of a letter dated 22 March 2019 from the Minister for Aboriginal Affairs to Hansen Partnership, the Proponent's consultants and applicant on the permit applications (Document 110). The letter advises that in response to the concerns of the Wadawurrung, departmental staff had inspected the area and confirmed the presence of Aboriginal cultural heritage associated with Mount Pollock. Staff also identified the potential for further Aboriginal heritage to be located within the wind farm activity area. Document 110 directs the Proponent to prepare a CHMP. The Minister for Aboriginal Affairs also wrote to the Minister for Planning (Document 111), advised him that the Proponent has been directed to prepare a CHMP and noting that no permits could be issued unless a CHMP is approved.

Historical Cultural Heritage

The Panel is satisfied that the proposal is unlikely to impact on the heritage site located near the intersection of Gnarwarre Road and Mt Pollock Road.

(v) Conclusions

The Panel concludes:

- In light of Document 110 directing the Proponent to prepare a CHMP, permits cannot be issued, and the project cannot proceed, until a CHMP is approved.
- The project is unlikely to impact on any site of historic (non-Aboriginal) cultural heritage significance.

10.4 Operational issues

(i) The issue

The issue is ensuring that appropriate arrangements are in place for managing operational impacts and the ongoing environmental management of the project, should the project proceed.

(ii) Relevant policies and standards

Section 4.3.5 of the Wind Farm Guidelines indicates that an Environment Management Plan will be required, detailing how the site will be managed during construction, and setting out operational and maintenance requirements. Clause 52.32 requires an Environment Management Plan to be submitted with a permit application for a wind farm.

(iii) Evidence and submissions

Many submissions referred to the need to ensure that the ongoing environmental and amenity impacts of the project were appropriately managed, should it be approved. Submitters also queried whether blasting was likely to be required in order to construct the turbine foundations, given the rocky basalt nature of the soil in the area. Mr Wilson indicated at the Hearing that he hoped that blasting would not be required, but it was not clear what his position was based on.

(iv) Discussion

DELWP's proposed without prejudice permit conditions (Documents 85 and 86) include comprehensive requirements for an Environment Management Plan to be prepared and approved before development starts. The Environment Management Plan must describe measures to minimise any amenity and environmental impacts of the construction, operation and decommissioning of the project. It must include organisational responsibilities, and procedures for staff training and communication. The Environment Management Plan must include a Construction Environment Management Plan and a BAM Plan.

The Panel is broadly satisfied that DELWP's proposed conditions are appropriate to ensure that the operational (and construction) impacts of the project can be appropriately managed if it proceeds. Like the Fire and Emergency Response Plan, the Panel considers that one consolidated Environment Management Plan that covers both the wind farm and the solar farm should be developed. The conditions require some modification to improve their consistency and operation, and to avoid duplication.

As noted in Chapter 10.2 above, the Proponent submitted a draft Environment Management Plan with the permit application. DELWP did not assess the draft Environment Management Plan, as it considered that it was premature to do so in advance of a permit being granted and the design of the project, including turbine locations, being finalised. The Panel expresses no view in relation to the appropriateness or otherwise of the draft Environment Management Plan, but sees no reason why this could not form the basis of an Environment Management Plan required under permit conditions, should permits issue.

The Geotechnical Review submitted with the permit applications contains very little detail in relation to the soil conditions on the site. It does not consider whether blasting is likely to be required to construct the turbine foundations. On the limited information provided to the Panel, it seems that blasting may be required. The turbines are large, and will necessarily require substantial foundations to ensure stability. On its site visit, the Panel observed large quantities of basalt rock in the area, including some very large pieces. The Campbells included a photograph in their presentation (Document 66) of a rock formation on their farm (just to the north of the site) which they described as the size of a small ute.

The Panel considers that, if a permit for the wind farm issues, it should require a Blasting Management Plan to manage the impacts of any blasting activity carried out on the site. The Panel notes that the draft Environment Management Plan submitted with the applications includes a draft Blasting Management Plan. The Panel expresses no view in relation to its appropriateness. Like the draft Environment Management Plan, the Panel sees no reason why the draft Blasting Management Plan could not form the basis of a plan required under permit conditions.

(v) Conclusions and recommendations

The Panel concludes:

- The Panel is broadly satisfied that DELWP's proposed permit conditions requiring an Environment Management Plan are appropriate to manage the construction and operational impacts of the project, should it proceed. Some modification is required to improve the consistency and operation of the conditions, and to avoid unnecessary duplication.
- If the project proceeds, the wind farm permit should include conditions requiring blasting impacts to be appropriately managed through a Blasting Management Plan.

The Panel recommends:

If permits are issued, include a condition on both permits requiring a single Environment Management Plan to be prepared and approved for both the wind farm and the solar farm, generally consistent with the conditions proposed by the Department of Environment, Land, Water and Planning.

If a permit for the wind farm issues, include a condition requiring a Blasting Management Plan to be approved and implemented to the satisfaction of the Responsible Authority (if required).

11 Integrated assessment of the permit applications

11.1 Guiding principles

Clause 65 of the Planning Scheme states:

> Because a permit can be granted does not imply that a permit should or will be granted. The Responsible Authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines of this clause.

Clause 71.02-3 requires a Responsible Authority considering a permit application (and, by extension, the Panel) to take an integrated approach, and to balance competing objectives in favour of net community benefit and sustainable development.

11.2 Relevant considerations

Decision guidelines and matters to be taken into consideration are specified in Clauses 35.07 (Farming Zone), 52.32 (Wind energy facilities), 53.13 (Renewable energy facilities) and 65.01 (Decision guidelines for approval of an application). The Wind Farm Guidelines (in Section 5) and the draft Solar Farm Guidelines also set out matters that a Responsible Authority (and, by extension, the Panel) should consider.

The matters the Panel and the Responsible Authority are required to take into consideration can be broadly grouped as follows:

(i) General issues

The Panel and Responsible Authority must consider:

- the Planning Policy Framework
- adopted government policy and the proposal's contribution to government policy objectives
- the orderly planning of the area
- the purpose of the zone and relevant particular provisions
- objections, and comments and decisions of referral authorities
- the Wind Farm Guidelines and the New Zealand Standard
- the matters specified in section 60 of the Act, including the Victorian planning objectives and the economic, social and environmental impacts of the proposed use and development
- the capability of the land to accommodate the proposed use or development
- how the proposed use or development relates to sustainable land management.

(ii) Agricultural issues and the impacts from non-agricultural uses

The Panel and Responsible Authority must consider:

- whether the use or development will support and enhance agricultural production
- whether the use or development will adversely affect soil quality or permanently remove land from agricultural production
- the potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses

- the agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.

(iii) Design and siting issues

The Panel and Responsible Authority must consider:

- landscape and visual amenity impacts, including impacts on significant views, visual corridors and sightlines
- impact on the character and appearance of the area or features of natural scenic beauty or importance
- flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land
- impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts
- impact on aviation safety
- the location and design of existing and proposed infrastructure and services.

(iv) Amenity impacts

The Panel and Responsible Authority must consider:

- the effect on the amenity of the area, including noise, blade glint, shadow flicker and EMI
- whether the use and development will require traffic management measures
- construction and decommissioning impacts.

(v) Environmental issues

The Panel and Responsible Authority must consider:

- the need to protect and enhance the biodiversity of the area, including the retention of vegetation and habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area
- impacts on flora and fauna, cultural heritage and the natural physical features and resources of the area, particularly soil and water quality
- the extent and character of native vegetation, the likelihood of its destruction, and whether it can be protected, planted or allowed to regenerate
- factors likely to cause or contribute to land degradation or reduce water quality.

11.3 Referral requirements

Clause 66.02 requires an application for buildings and works within 60m of a major electricity transmission easement to be referred to the relevant electricity transmission authority, which is a determining referral authority. The application was referred to AusNet, which did not object to the grant of a permit, provided conditions are included on the permit that include a requirement that no part of a wind turbine or anemometry mast be within 60m of the AusNet transmission line easement.

DELWP also sought advice on the permit application from other agencies, including CASA, DELWP's Environment Portfolio, VicRoads and Aboriginal Victoria. Their advice is discussed in the relevant issue-based chapters of this Report.

11.4 Evidence and submissions

The Proponent submitted that the project will result in a net community benefit and will contribute to sustainable development. The key benefit is the project's "*significant contribution*" to achieving the renewable energy targets discussed in Chapter 2.3, and the benefits to the community from renewable energy. It submitted:

> Wind power is an efficient technology to produce energy in a safe and environmentally sustainable manner. It has zero emissions, is local, inexhaustible, competitive and creates wealth and jobs. For these reasons, producing electricity through wind energy and its efficient use makes a significant contribution to sustainable development.
>
> Wind energy has a number of benefits. It reduces the generation of greenhouse gas emissions. It is a clean energy in that it does not emit toxic substances or contaminants – this makes a contribution to public health through avoiding the emission of particulate matter and noxious gases. It helps reduce dependence on fossil fuels, particularly coal, and thereby increases the diversity in energy supply. It creates construction and operational jobs. Where constructed on farm land, it can assist in the viability of continuing primary production.
>
> Solar energy provides similar benefits.

The Proponent highlighted the Indicative Economic Impact Assessment submitted with the permit applications, which outlines the contribution to the State economy from construction and operation of the facility, including:

- a combined investment of $194 million ($138 million for the wind farm, $44 million for the solar farm and $12 million for the battery storage)
- an estimated 377 full time equivalent jobs over the construction period, and 18.8 full time equivalent jobs per annum for the operational period.

However when read in detail, it appears that the authors of the Indicative Economic Impact Assessment assume that 40 to 60 per cent of the total investment will be imported from outside Victoria. The job numbers appear to be based on a general assumption about the number of jobs generated per $1 million invested, rather than actual employment positions likely to be created by the project.

Mr Iles' evidence highlighted a number of benefits that the project will deliver to the community, including those referred to in the Indicative Economic Impact Assessment. He also referred to the contribution to achieving renewable energy objectives, the increase in Victoria's share of the national renewable energy market, the benefits of the battery storage, an estimated saving of up to 220,000 tonnes of greenhouse gases per year and the Community Benefit Fund.

These benefits were echoed in submissions from the landowners of the project site. Mr Bieser pointed to the support for the project from the Geelong Manufacturing Council, and the recent announcements that the old Ford factory in Geelong is being converted to a manufacturing facility for turbine components, partly due to the proximity of operating and approved wind farms in the Western Districts. He submitted that this will bring

manufacturing jobs to Geelong, which will in turn provide a significant boost for the local economy.

DELWP queried the estimates of the project's contribution to jobs. It submitted that the Proponent's estimate of 380 construction jobs and 17 ongoing jobs appears excessive for a 16-turbine wind farm and 55,000 panel solar farm, noting that the Stockyard Hill wind farm (149 turbines currently under construction) has a workforce of only 300. It also queried whether the applications in fact included battery storage. The Panel has found (in Chapter 3.2) that the applications do not include battery storage.

Other submitters questioned the level of benefit to the community likely to be generated by the project. Mr Wissink pointed to the fact that average wind farm performances in Australia are 30 to 35 per cent of installed capacity, casting some doubt on the Proponent's claims about the extent the project will contribute to greenhouse gas savings and renewable energy targets. He submitted that, assuming an operational efficiency of 30 to 35 per cent, the cost of power produced by the project would be in the order of $20 million per MW of installed capacity. He submitted that the project is not economically sensible at this cost, and offshore wind farms (which typically have an operating efficiency of 60 to 65 per cent of installed capacity) should be preferred. He also questioned how many of the jobs supposedly generated by the proposal would actually go to the local community.

Mr Tucker's submissions also questioned the economic efficiency of the project, submitting that it was too small, and too costly, to generate electricity efficiently. On his calculations, the project would produce electricity at a cost of 10 to 15 cents per kW hour, compared to an Australian target of 4 to 7 cents per kW hour. This, he submitted, could impact on the community by driving up power prices. He submitted that if the project goes ahead, it should not be permitted to operate unless efficiency levels were at 7 cents per kW hour or less.

11.5 Discussion

(i) Relevant considerations

The issues and impacts required to be considered have been discussed at length in the issue-specific chapters of this Report. In essence the Panel considers:

General issues

Renewable energy projects have strong policy support. The project will contribute to some degree to the Government's adopted policy objectives of increasing renewable energy and reducing greenhouse gas emissions. The project is broadly consistent (or at least not inconsistent) with the purposes of the Farming Zone and other relevant provisions in the Planning Scheme, and there is nothing to suggest that the site is not capable of accommodating the project, or that the project will reduce the ability of the land to be managed sustainably in the long term.

Agricultural issues and the impacts from non-agricultural uses

Using and developing the site for a wind and solar farm can, subject to appropriate permit conditions, harmoniously achieve agricultural production and renewable energy policy

objectives. There is nothing to suggest that the project will adversely affect the agricultural qualities of the land, or permanently remove land from agricultural production. The project will provide an alternative income source for the host landowners, which may contribute to the sustainability of agricultural production on their land. Decommissioning can be dealt with through appropriately drafted permit conditions, to ensure that the land can be transitioned back to agricultural use once the project is complete.

There is some potential for the project to limit the operation and expansion of adjoining and nearby agricultural uses, unless the impacts of the project are carefully managed. The turbines could potentially interfere with aerial agricultural operations such as spraying for weed control. There is also the potential for the project to alter drainage patterns on the land, although based on the information before the Panel, off-site drainage impacts are unlikely.

These impacts can be acceptably managed through appropriate permit conditions. Ongoing cooperation will be required between the operator of the wind farm and surrounding aerial agricultural operators to ensure that aerial agricultural operations are not unduly impacted.

Design and siting issues

There is no doubt that the turbines will impact on the landscape and on visual corridors and sightlines from both public and particularly private viewpoints. The Panel considers that the Landscape and Visual Impact Assessment has underestimated the landscape and visual impact of the project in a number of respects. That said, the landscape is not recognised in the Planning Scheme as having any special value worthy of specific protection. On balance, the Panel concludes that on the basis of an objective assessment, the visual impacts of the project are not so severe as to justify refusing the permit applications.

More could be done to ameliorate the impacts of the turbines on private non-stakeholder dwellings in the vicinity of the site. Landscape mitigation should be offered to a distance of 5kms. Other aspects of the project, such as the substation and solar panels, also have the potential to have visual impacts but the Panel is satisfied that these can be ameliorated with landscape screening and suitable choices of materials.

The Panel is not persuaded that the project will cause unreasonable flood, erosion, salinity or fire risks. No material was presented to the Panel suggesting the project may cause or exacerbate erosion or salinity. While there is some suggestion that the project could have drainage impacts, the Panel is satisfied that conditions can be included on the permit to address these.

The project will impact on the use of the private landing strip at the Gnarwarre ALA. However the Panel does not consider that these impacts are unreasonable. The Panel is satisfied on the basis of the expert evidence that, with some adjustments to operating procedures at the airfield, it can continue to be used for its current purposes, provided Turbine 10 is removed and the anemometer mast is relocated outside the obstacle free area referred to in the Civil Aviation Regulations. The primary adjustment that will need to be made to operations at the airfield is the adoption of a standard LH circuit on RWY24, and a RH circuit on RWY06, for aircraft taking off and landing on the airstrip.

Amenity issues

The project will affect the amenity of the area. It will introduce large features that are not currently present in the immediate area. That said, the Panel has concluded that on balance, the visual impacts of the project are not so severe as to justify refusing the permits.

The Panel is satisfied that the noise modelling undertaken to date demonstrates that the project can meet the noise limits set out in the New Zealand Standard, although some further assessment will be required prior to works commencing. The operator of the wind farm will need to carefully consider the sound power output specifications of the turbines that are ultimately selected. The Panel is persuaded based on expert evidence that if non-compliances are detected once the project is operating, adjustments can be made to the operation of the turbines to ensure that the project is brought into compliance. Expert evidence suggests that there should be no difficulty the substation or the solar farm meeting the limits in NIRV.

The Panel is satisfied that the conditions in DELWP's without prejudice proposed conditions (Documents 85 and 86) provide a robust framework to manage noise impacts, and the community will not be left with a legacy of noise non-compliance.

The Panel has found that shadow flicker, blade glint and EMI can be adequately managed, although more robust conditions are required to ensure the community does not experience a reduction in access to essential telecommunications and other services through EMI. While the project will impact on local traffic, particularly during construction and decommissioning, those impacts can be appropriately managed through permit conditions.

DELWP's without prejudice proposed conditions require a robust Environment Management Plan to manage amenity and environmental impacts of the project through the construction, operation and decommissioning phases. Subject to some drafting improvements, the Panel is satisfied that these conditions are appropriate to manage the amenity impacts of the project. In particular, the conditions should be expanded to require a Blasting Management Plan to manage the impacts of blasting on the site, should it be necessary.

Environmental issues

It appears from the Biodiversity Assessment and Mr Organ's evidence that there is limited remnant vegetation present on the site, and limited high quality habitat for listed or threatened species. The project footprint appears to have been designed to avoid areas of remnant native vegetation and high quality habitat. With the possible exception of Brolga and Southern Bent-wing Bat, the project is unlikely to have significant impacts on listed or threatened species of flora or fauna. There is no evidence that the project is located along any riparian buffers, or in a saline environment, and could therefore impact on water quality. Issues in relation to land degradation, soil and water quality have been addressed above.

Impacts of the wind farm on Brolga have not been adequately assessed. Although there are limited records of Brolga activity on or near the site in databases such as the Victorian Biodiversity Atlas, several landowners in the area have seen Brolga on their properties. This was not factored into the Brolga assessments undertaken by Ecology and Heritage Partners, as Ecology and Heritage Partners did not consult with landowners. The absence of high

quality Brolga habitat on the site is not a proper basis for concluding that the project is unlikely to impact Brolga, as habitat quality can vary from year to year and season to season, and Brolga have been known to breed in low quality habitat.

That said, the Panel was not presented with positive evidence that Brolga have used the site or surrounding area for flocking or breeding activities, or that the buffers recommended in the Brolga Guidelines would not be met if the project were to proceed.

Given the deficiencies in the Proponent's Brolga assessments undertaken to date, ongoing monitoring of impacts on Brolga is a priority. If any impacts are detected, monitoring will need to continue for the life of the project, and suitable mitigation and offset measures will need to be put in place to ensure a net zero impact on the Brolga population.

The Panel considers that the BAM Plan should include a requirement for a roost habitat survey for Southern Bent-wing Bats within 20kms of the site, monitoring of impacts on Southern Bent-wing Bats (and other bat species), and mitigation of any impacts that are detected through the monitoring program to the extent practicable.

The Wadawurrung Aboriginal Corporation indicated in its submission to the permit application that the area is abundant with intangible cultural stories, and expressed concerns that the presence of Aboriginal heritage at the site had not been adequately assessed. The Proponent's consultants recommended the Proponent adopt the best practice approach of preparing a voluntary CHMP for the project. Despite the recommendations of its consultants and the concerns expressed by the Wadawurrung Aboriginal Corporation, the Proponent elected not to do so. Since then, the Minister for Aboriginal Affairs has directed the Proponent to prepare a CHMP. Permits for the project cannot issue, and the project cannot proceed, unless a CHMP is approved.

The Panel does not consider that the project is likely to significantly impact any non-Aboriginal cultural heritage values.

(ii) Overall assessment

The Panel accepts that the project will make some contribution toward achieving the State's renewable energy targets, and reducing greenhouse gases. The precise amount of that contribution is, however, unclear and will depend on the overall efficiency of the project, including the efficiency of the turbines that are ultimately selected. The Panel places no weight on the supposed benefits flowing from the battery storage, given the applications do not include battery storage.

The Panel places limited weight on the Indicative Economic Impact Assessment, and on Mr Iles' evidence that relied on the Indicative Economic Impact Assessment. It is unclear who authored this document, what their qualifications are, and whether they are independent of the Proponent. The assessment is a desktop assessment only, and is not based on primary consultation or research, or in definite costings. DELWP cast further doubt on the accuracy or reliability of the job estimates in the Indicative Economic Impact Assessment with its comparison with the job numbers created by the much larger Stockyard Hill project.

While the economic benefits of the project are somewhat unclear, there is nothing to suggest that the project will generate an economic disbenefit. Although the Panel

acknowledges the submissions of Mr Wissink and Mr Tucker, it is not persuaded that the project will have a harmful effect on the economy.

The project will have social impacts, including significant levels of stress in the surrounding community, and entrenched community division. These are effects of the project, not the application process. These effects have been contributed to by the Proponent's unsatisfactory approach to consultation and engagement, which has been far from best practice and falls well short of Government expectations. The Government has recognised that poor engagement with surrounding communities generates risk not only for the project concerned and its social licence to operate, but for the renewable industry more broadly.

On balance, the Panel considers that a permit should be granted for both the wind farm, and for the solar farm. While the claims of economic benefits in the Economic Impact Assessment are not persuasive, the project will result in some investment in the local area and may generate some local jobs. With the possible exception of Brolga, the project is unlikely to significantly impact listed and threatened flora and fauna species, or local water or soil quality. The project is likely to have an overall positive effect on the environment, given its contribution toward renewable energy generation and reduction of greenhouse gases.

The social impacts of the project are significant, and concerning. But they must be balanced against the other impacts and benefits of the project. When weighed as part of an objective and balanced assessment, the Panel considers that the social impacts of the project are not so severe as to justify refusing the permits.

That said, the Proponent will need to radically alter its approach to date, and make a concerted and genuine effort to improve its engagement and relationship with the surrounding community. The community will need to approach its ongoing relationship with the Proponent (or the ultimate operator of the project) with an open mind.

The Panel strongly urges the Proponent to rethink the approach taken to date on consultation in relation to the Community Benefit Fund, and to consider a more suitable and comprehensive community benefit sharing program, including neighbourhood benefit payments and compensation packages for the most affected non-stakeholder landowners.

11.6 Conclusion and recommendations

The Panel concludes:

- On balance, the project is likely to deliver a net community benefit and sustainable development. Permits should issue for both the wind farm and the solar farm.
- The social impacts of the project remain of concern to the Panel. The Panel considers that these impacts could be reduced, provided the Proponent radically alters its approach to community engagement and benefit sharing.
- Although the Panel is not able to make formal recommendations about community engagement and benefit sharing given its voluntary nature, the Panel urges the Responsible Authority to consider its conclusions in Chapter 8.

The Panel recommends:

Issue planning permit PA1800340 for a wind energy facility of no more than 15 turbines and associated infrastructure, native vegetation removal and business signage, subject to the conditions contained in Appendix D.

Issue planning permit 18/0356 for a renewable energy facility (solar farm) and associated cabling and infrastructure, subject to the conditions contained in Appendix E.

Appendix A1 Submitters to the Wind Farm

No.	Submitter	No.	Submitter
1	Jacqui White & Phil Tribe	29	Colin and Rowan Peel
2	Lee Watt	29.1	Colin and Rowan Peel
3	Raelene Young	30	Surf Coast Shire Council
3.1	Raelene and Anthony Young	31	Ian and Jennifer Dohle
4	Brad O'Connor	31.1	Ian and Jennifer Dohle
5	Elaine O'Connor	32	Rochelle Veitch
6	Surf Coast Walks	33	Warwick and Julie Peel
7	Annika Naylor	34	Aaron Ivers
8	Matt Henry	35	Neil and Monique Bath
9	Andrew Laird	36	David White
10	Matthew and Michelle Hand	37	Allan Shelley
11	Baystone Farm	37.1	Peter Falconer
12	Michael Muller	38	Golden Plains Shire Council
13	Sally Groom	39	Alan Barron
14	Ben Baker	40	Penrith Nominees
15	Brian Walker	41	Ross, Coral, Ewan and Eliza Peel
16	Barry McAdam	42	Julie Peel
17	Adrian Ford	43	Gail and Arthur Atkinson
18	Lloyd Gosling	44	Nigel and Moira Thomson
19	Murnong Farming	45	Anthony Russell
20	Wendy Berg	45.1	Anthony Russell
21	Jason Berg	46	Geoff & Isobel Oliver
22	Ebony Berg	46.1	Geoff & Isobel Oliver
23	Tyson Berg	47	Julie Dingle
24	John and Judy Meulblok	48	Duncan Campbell
25	Bart Wissink	49	M and D Campbell
25.1	Bart Wissink	50	Jacqueline White & Philip Tribe
26	Stevan and Lillian Brakus	51	Andrew Maschmedt
27	Barbara and Gary Barfoot	51.1	Andrew, Joanne and Rebecca Maschmedt
28	Carrie Vanderpool	51.2	Andrew Maschmedt

No.	Submitter	No.	Submitter
52	Insight Engineering Australia Pty Ltd	73	Legislative Assembly of Victoria
53	Wind Pacific	74	Phillippa Young
54	Melissa Ware	75	Andera Bolton
55	Louise, Scott, Molly, Max & Josh Worland	76	Peter Trevaskis
56	Wayne & Carmel Jennings	77	Leanne Prestipino
57	Margaret & John Wines	78	Annabelle Tucker
58	Gail Russell	79	Maureen Witcombe
59	Michael & Annabelle Tucker	80	Stephanie Witcombe
60	Paul Cole	81	Renee Urquhart
61	Mark Spowart	82	Wadawurrung Aboriginal Corporation
62	Doug Rolfe	83	Rose Grange Pastoral Co
63	Michael Peel	84	John Staples
64	National Trust of Australia (Victoria)	85	Geelong Environment Council Inc
65	Gordon Rich-Phillips, Shadow Minister for Aviation	86	Monique Fulwood
66	Geelong Manufacturing Council	87	Gary Kendell
67	Mark and Kathryn Bieser	88	Eliza Peel
68	John Kennealy	89	Louise and Kon Blersch
69	Wendy Verber	90	Brian and Maureen Barry
70	Tom Welsh	91	Tom Barry
71	Matt O'Connor	92	Brian and Donna Barry
72	Bart Wissink, Kaye Rodden & Anthony Russell	93	Barb Vallance

Appendix A2 Submitters to the Solar Farm

No.	Submitter	No.	Submitter
1	Bart Wissink	11	Warwick and Julie Peel
2	M and A Tucker	12	Gnarwarre Community Association Inc.
3	BR and KM Rodden	13	Ross and Coral, Ewan and Eliza Peel
4	Anthony Russell	14	National Trust of Australia
5	Wayne and Carmel Jennings	15	Raelene, Anthony & Erin Young
6	Peter Falconer	16	Mark Spowart
7	Maxine and Duncan Campbell	17	Erika and Lloyd Gosling
8	Duncan Campbell	18	Andrew Maschmedt
9	Ian and Jennifer Dohle	19	Gary and Barbara Maschmedt
10	Phillip Tribe and Jacqueline White		

Appendix B Parties to the Panel Hearing

Submitter	Represented by
Department of Environment, Land, Water and Planning	Planning Division - Michael Juttner, Tim Wild, Environment Division - Jessie McMasters, Geoff Brooks
Inverleigh Wind Farm Pty Ltd (the Proponent)	Paul Chiappi instructed by K&L Gates and Alistair Wilson (of the Proponent), who called expert evidence on: - town planning from Damian Iles of Hansen Partnership - visual and landscape impact from Steve Schutt of Hansen Partnership - noise from Tom Evans of Resonate Acoustics - biodiversity from Aaron Organ of Ecology and Heritage Partners - aviation from Richard Gower - aviation from Stirling Preston of Global Airspace Solutions - community engagement from Simon Klapish of Community Connect CSR
Surf Coast Shire Council	Bill Cathcart, Darryn Chiller and Rowan McKenzie
Civil Aviation Safety Authority	Kev Scrimshaw
Geelong Environment Council Inc.	Janet Calaby
National Trust of Australia (Victoria)	Jessica Hood
Gnarwarre Community Association Inc.	Wayne Jennings and Andrew Maschmedt, who called expert evidence on: - noise from Les Huson on acoustics
Andrew Maschmedt	Himself, who called expert evidence on: - aviation from Graeme Taberner
Penrith Nominees	Madeleine Steel
Wayne Jennings	
Jacqueline White and Phillip Tribe	
Raelene Young	
Mike Spowart	
Warwick Peel	
Maxine and Duncan Campbell	
Ian and Jennifer Dohle	
Ewen Peel	
Lee and Peter Watt	

Colin and Rowan Peel
Louise Worland
Geoff Oliver
Eliza Peel
Mark Bieser
John Staples
Anthony Russell and Rebecca Wall
Bart Wissink
Colin Richmond
Brian Barry
Nigel Thomson
Kaye Rodden
Renee Urquhart
Lloyd and Erika Gosling
Matt O'Connor
Garry Kendell
Louise and Kon Blersch
Michael Tucker

Appendix C Document list

No.	Date	Description	Presented by
1	12/9/18	DELWP Environment's request for information/ clarification	DELWP Environment
2	23/11/18	The response to the wind farm permit application from the Civil Aviation Safety Authority (CASA) dated 23 November 2018 (Document 2)	CASA
3	26/11/18	Letter from Panel to CASA	Planning Panels Victoria
4	3/12/18	The Panel's Directions	Planning Panels Victoria
5	5/12/18	Council correspondence to Panel with addresses of nearby property owners for site visit	Surf Coast Shire Council
6	19/12/18	DELWP Planning – email to Panel with attached letter to AusNet Services as referral authority	DELWP Planning
7	16/1/19	DELWP Environment – response to Direction 10	DELWP Environment
8	16/1/19	DELWP Environment – brolga breeding map	DELWP Environment
9	17/1/19	AusNet Services referral authority response	AusNet Services
10	18/1/19	DELWP Part A submission and attachments (copies of all written responses from government agencies in accordance with Direction 9.f)	DELWP Planning
11	18/1/19	Draft (Wind) without prejudice conditions	DELWP Planning
12	18/1/19	Draft (Solar) without prejudice conditions	DELWP Planning
13	21/1/19	Map showing location of submitters	DELWP Planning
14	23/1/19	Panel's site inspection itinerary	Planning Panels Victoria
15	25/1/19	Expert witness statement on Ecology – Aaron Organ	K&L Gates on behalf of Inverleigh Wind Farm Pty Ltd
16	25/1/19	Expert witness statement on Planning – Damian Iles	K&L Gates
17	25/1/19	Expert witness statement on Aviation/air safety – Richard Gower	K&L Gates
18	25/1/19	Expert witness statement on Community engagement – Simon Klapish	K&L Gates
19	25/1/19	Expert witness statement on Visual impact – Steve Schutt	K&L Gates

No.	Date	Description	Presented by
20	25/1/19	Expert witness statement on Aviation peer review – Stirling Preston	K&L Gates
21	25/1/19	Expert witness statement on Noise – Tom Evans	K&L Gates
22	25/1/19	Expert witness statement on Acoustics – Les Huson	Andrew Maschmedt
23	25/1/19	Aviation safety report: Assessment of Safety Implications on Users of the Gnarwarre Airfield by the proposed Inverleigh Wind Farm – Andrew Maschmedt	Mr Maschmedt
24	4/2/19	DELWP Planning Part B Submission	DELWP Planning
25	4/2/19	PowerPoint presentation - Damian Iles	Mr Iles
26	5/2/19	Photomontage package	Paul Chiappi on behalf of Inverleigh Wind Farm Pty Ltd
27	5/2/19	Mortlake Wind Farm panel report	DELWP Environment
28	6/2/19	Visual images of example grid connection infrastructure - 220kv	Mr Chiappi
29	6/2/19	Booklet of plans, maps & images	Mr Chiappi
30	6/2/19	PowerPoint presentation – Tom Evans	Mr Evans
31	6/2/19	Plans, photos and link to video - Stirling Preston	Stirling Preston
32	7/2/19	Site inspection itinerary & plan (prepared by community) for the Panel's second site inspection	Planning Panels Victoria
33	7/2/19	Plan of site with contour plans (wall poster & e-version)	Mr Chiappi
34	7/2/19	Submission for the Applicant	Mr Chiappi
35	7/2/19	Submission for Surf Coast Shire Council, including attachments (parts A, B & C)	Surf Coast Shire Council
36	7/2/19	Hinterland Futures Strategy – Surf Coast Shire	Surf Coast Shire Council
37	7/2/19	Submission for DELWP Environment	DELWP Environment
38	7/2/19	Map of Southern Bent-Wing Bat & Bent-Wing Bat Roost locations	DELWP Environment
39	7/2/19	Email from Mr Evans attaching paper on Influence on non-standard atmospheric conditions on turbine noise levels near wind farms	Alistair Wilson on behalf of Inverleigh Wind Farm Pty Ltd
40	7/2/19	Brochure on battery storage	Mr Chiappi
41	7/2/19	Two maps of power lines near site	DELWP Planning

No.	Date	Description	Presented by
42	7/2/19	Table of Victorian wind farms showing turbine heights and requirements for off-site landscaping	DELWP Planning
43	7/2/19	Map showing proximity of wind farms in the vicinity of site	DELWP Planning
44	7/2/19	Map of 34 houses within 4kms of site	Mr Wilson
45	7/2/19	Revised map of power lines showing 22kv lines	DELWP Planning
46	7/2/19	Visual images of example grid connection infrastructure - 66kv	Mr Wilson
47	5/2/19	Aaron Organ presentation on ecology	Aaron Organ
48	7/2/19	Surf Coast Landscape Assessment North of the Princes Highway	Surf Coast Shire Council
49	7/2/19	Surf Coast Shire Rural Strategy 2007	Surf Coast Shire Council
50	7/2/19	Great Ocean Road Region Landscape Assessment Study 2003 Municipal Toolkit	Surf Coast Shire Council
51	12/2/19	Email clarifying the inclusion of the Kokam Battery brochure in the wind farm planning application	Mr Wilson
52	12/2/19	Email clarifying the proposed 66kV lines connection for the wind solar battery facility with attached map on Geelong Powercor System Limitations	Mr Wilson
53	12/2/19	Proponent's Draft (Solar) Without prejudice conditions	Mr Wilson
54	12/2/19	Proponent's Draft (Wind) Without prejudice conditions	Mr Wilson
55	18/2/19	Gnarwarre Community Association Presentation	Wayne Jennings on behalf of the Gnarwarre Community Association
56	18/2/19	Precinct package 1.2 – Landscape Assessment Planisphere	Mr Jennings
57	18/2/19	PowerPoint Presentation – Les Huson	Les Huson
58	18/2/19	Presentation – Wayne & Carmel Jennings	Mr Jennings
59	19/2/19	Paper titled *Comparison of predicted and measured wind farm noise levels and implications for assessments of new wind farms*, Evans and Cooper, Paper no. 30, Proceedings of Acoustics 2011 November 2011, Gold Coast	Les Huson
60	19/2/19	Feedback on Draft Permit Conditions – M Tucker	Michael Tucker
61	19/2/19	*Wind energy facility noise auditor guidelines*, EPA publication 1692 October 2018	Mr Wilson

No.	Date	Description	Presented by
62	19/2/19	DELWP Supplementary comments based on Panel's questions, including brochure titled *Which bats are dying and why?*	Jessie McMaster on behalf of DELWP
62A	19/2/19	Letter from Wathaurung Aboriginal Corporation to Minister for Aboriginal Affairs	Paul Davis on behalf of Wathaurung Aboriginal Corporation
63	19/2/19	Presentation by P Tribe & J White	Phillip Tribe
64	19/2/19	Presentation by Submitter S16 W61	Submitter S16 W61
65	19/2/19	Presentation by W Peel	Warwick Peel
66	19/2/19	Presentation by Campbell Family	Maxine & Duncan Campbell
67	19/2/19	Presentation by I & J Dohle	Ian & Jenny Dohle
68	19/2/19	Proposed layout & information on PowerPlane	Ewen Peel
69	19/2/19	Presentation by E Peel	Ewen Peel
70	19/2/19	Presentation by L & P Watt	Lee & Peter Watt
71	19/2/19	Presentation by A, J & R Maschmedt	Andrew Maschmedt
72	19/2/19	Presentation by G Oliver	Geoff Oliver
73	19/2/19	Presentation by E Peel	Eliza Peel
74	19/2/19	Presentation by M Bieser	Mark Bieser
75	19/2/19	Plan showing possible relocation of Anemometer	Mr Wilson
76	19/2/19	Feedback on draft conditions (wind farm) – Surf Coast Shire	Surf Coast Shire
77	19/2/19	Feedback on draft conditions (solar farm) – Surf Coast Shire	Surf Coast Shire
78	19/2/19	DELWP draft (Wind) without prejudice conditions (clean version)	Mr Wild
79	19/2/19	DELWP draft (Solar) without prejudice conditions (clean version)	Mr Wild
80	20/2/19	Feedback on draft conditions – J White & P Tribe	Phillip Tribe
81	20/2/19	Feedback on draft conditions – A Maschmedt	Mr Maschmedt
82	20/2/19	Feedback on draft conditions – E Peel	Ewen Peel
83	20/2/19	Feedback on draft conditions – Gnarwarre Community Association	Wayne Jennings

No.	Date	Description	Presented by
83A	20/2/19	Feedback on draft conditions – M O'Connor	Matt O'Connor
83B	20/2/19	Feedback on draft conditions – W Peel and family	Warwick Peel
84	20/2/19	Feedback on draft conditions – M & D Campbell	Duncan Campbell
85	20/2/19	DELWP draft (Wind) without prejudice conditions (marked up version)	Mr Wild
86	20/2/19	DELWP draft (Solar) without prejudice conditions (marked up version)	Mr Wild
87	20/2/19	Links to studies referred to in L & P Watt's Submission	Mr Jennings
88	20/2/19	Presentation by Geelong Environment Council	Janet Calaby
89	20/2/19	Presentation by B Wissink, including attachments	Bart Wissink
90	20/2/19	Newspaper article	Anthony Russell
91	20/2/19	Letter from Surf Coast Shire to A Russell	Mr Russell
92	20/2/19	Notes from Megan, Kate & Emma Russell	Mr Russell
93	20/2/19	Article from Geelong Advertiser dated 26 May 2008	Mr Russell
94	20/2/19	Article from Yarram Standard News dated 19 July 2006	Mr Russell
95	20/2/19	Submissions for National Trust	Jessica Hood
96	20/2/19	Presentation by C Richmond	Colin Richmond
97	20/2/19	Presentation by B Barry	Brian Barry
98	20/2/19	Presentation by Penrith Nominees and Steel Family, including PowerPoint with photographs	Madeleine Steel
99	20/2/19	Book – Barro-abil by J Bantow & R Lewis	Jennifer Bantow
100	20/2/19	Presentation by M Tucker	Mr Tucker
101	20/2/19	Circular regarding community meeting about the project	Mr Wilson
102	20/2/19	Map of adjacent landowner sighting of Brolga referred to in Gnarwarre Community Association presentation (Doc 55)	Mr Jennings
103	20/2/19	Information on the Star of the South offshore wind energy facility	Mr Wissink
104	21/2/19	DELWP closing submission	Mr Juttner
105	21/2/19	Proponent closing submission	Mr Chiappi
106	21/2/19	Proposed draft condition for turbine 10	Mr Chiappi
107	21/2/19	Schedule to the Farming Zone, Surf Coast Planning Scheme	Mr Juttner
108	21/2/19	Copy of Permit for PowerPlane project	Surf Coast Shire

No.	Date	Description	Presented by
109	27/2/19	Updated Document 83, Gnarwarre Community Association's draft without prejudice permit conditions, with cross-references in the noise conditions corrected	Mr Jennings
110	29/3/19	Letter from the Minister for Aboriginal Affairs to Hansen Partnership (consultants for the Proponent) dated 22 March 2019, directing the preparation of a CHMP	Mr Juttner
111	29/3/19	Letter from the Minister for Aboriginal Affairs to the Minister for Planning dated 22 March 2019, informing him that the Proponent has been directed to prepare a CHMP	Mr Juttner

Appendix D Recommended conditions - wind farm

ADDRESS OF THE LAND:	Land in Plan of Consolidation 367372B (VOL 10835 FOL 610) Lot 2 on Plan of Subdivision 148005E (VOL 09600 FOL 307) Crown Allotments 1 and 2 Section 7 Parish of Carrung-e-murnong (VOL 04842 FOL 268) Crown Allotments 1,2,3 and 4 Section 6, Crown Allotment 3 Section 7 Parish of Carrung-e-murnong (VOL 04455 FOL 867
THE PERMIT ALLOWS:	Use and development of land for a wind energy facility, native vegetation removal and erection and display of business identification signage

THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT

DEVELOPMENT PLANS

1. Before development starts, amended development plans must be submitted to, approved and endorsed by the responsible authority. When endorsed, the plans will form part of this permit.

   The plans must be fully dimensioned and drawn to a scale. The plans must be generally in accordance with the application plans generally titled *Inverleigh Wind Farm Planning Permit Application: Booklet of Plans, Maps & Images, dated July 2018 (Revision 2)*, and must include:

   a. a maximum of 15 turbines with the following specifications:
      i. maximum blade tip height of 200m above ground level
      ii. minimum blade tip clearance of 42m from ground level
   b. deletion of turbine 10
   c. deletion of references to battery storage
   d. deletion of references to a temporary batching plant
   e. relocation of the anemometer mast in accordance with condition 68
   f. the location, elevation, model, specifications and materials of the turbines
   g. the location, elevation and materials of any ancillary buildings or works, which must be sited and designed to minimise visual impact

h. the colours and finishes of all buildings and works (including turbines), which must be non-reflective to minimise visual impact

i. the transformer associated with each turbine being located beside each tower or enclosed within the tower structure

j. electricity cabling between the turbines located underground

k. the location and design of any proposed business identification signage

l. the location and nature of any native vegetation that is permitted for removal, and all native vegetation to be retained within 100m of works

m. all turbines and anemometry mast(s) located so they cannot come within 60 metres of the AusNet Services easement

n. no buildings or structures located within the AusNet Services easement other than interface works required for connection of the wind energy facility electrical system to the 220-kilovolt transmission line

o. any staging of the permitted development.

2. Except as permitted under conditions 4 and 5, the use and development must be generally in accordance with the endorsed development plans. The endorsed plans must not be altered or modified without the written consent of the responsible authority.

STAGING

3. The use and development may be completed in stages in accordance with the endorsed development plans. The corresponding obligations arising under this permit may be completed in stages.

MICRO-SITING OF TURBINES

4. Before development starts, a Micro-siting Plan must be submitted to, approved and endorsed by the responsible authority, identifying a footprint at ground level within which each turbine may be located. When endorsed, the plan will form part of this permit.

   The Micro-siting Plan must be fully dimensioned and drawn to scale. The footprint for each turbine identified on the Micro-siting Plan:

   a. must not extend more than 100 metres in any direction from the centre of the turbine at ground level as shown on the development plans endorsed under condition 1

   b. must not be within 1 kilometre of a dwelling unless evidence is provided to the satisfaction of the responsible authority that the owner of the dwelling has consented in writing to the location of the turbine footprint.

5. Any changes to access tracks, electricity cabling and associated infrastructure arising from micro-siting a turbine in accordance with an endorsed Micro-siting Plan do not require further written consent of the responsible authority, and do not require amendments to the development plans endorsed under condition 1.

6. The endorsed Micro-siting Plan must not be altered or modified without the written consent of the responsible authority.

LANDSCAPING

On-Site Landscaping Plan

7. Before development starts, an On-Site Landscaping Plan must be submitted to, approved and endorsed by the responsible authority. When endorsed, the On-Site Landscaping Plan will form part of this permit.

   The plan must specify:

   a. details (type and location) of landscaping to screen all buildings and structures (other than the turbines) from Gnarwarre Road and other surrounding roads, including Mount Pollock Road, Peels Road and the Inverleigh-Winchelsea Road

   b. timing of planting, which must be before development starts

   c. height of plants at maturity

   d. maintenance program, including weed management and the replacement of dead or diseased plants.

8. The endorsed On-Site Landscaping Plan:

   a. must be implemented to the satisfaction of the responsible authority

   b. must not be altered or modified without the written consent of the responsible authority.

Off-Site Landscaping Program

9. Before development starts, an Off-Site Landscaping Program must be submitted to, approved and endorsed by the responsible authority. When endorsed, the Off-Site Landscaping Program will form part of this permit.

10. The Off-site Landscaping Program must:

    a. include a plan accurately identifying all non-stakeholder dwellings within 5 kilometres of a turbine, to the satisfaction of Surf Coast Shire Council

    b. provide for off-site landscaping or other treatments to reduce the visual impact of the turbines at any dwelling within 5 kilometres of a turbine

    c. include a methodology for determining:

       i. the type of landscaping treatments to be proposed

       ii. a timetable for establishing and maintaining the landscaping for at least two years

    d. include a process for making offers to affected landowners to undertake landscaping on the landowner's land

    e. include a process for recording:

       i. offers that have been made to landowners

ii. whether or not the offers are accepted

iii. when and how offers are actioned following acceptance

f. include a process for the preparation and provision of progress reports regarding the implementation of the endorsed off-site landscaping program to be provided to the responsible authority annually from the date of this permit, and at other times on request.

11. The endorsed Off-site Landscaping Program:

a. must be implemented to the satisfaction of the responsible authority

b. must not be altered or modified without the written consent of the responsible authority.

NOISE

In conditions 12-28:

a. 'the Standard' means *New Zealand Standard 6808:2010, Acoustics – Wind Farm Noise*

b. 'noise sensitive location' means a location that meets the definition in the Standard that existed at [insert date of the permit]

c. 'ancillary infrastructure' includes the substation

d. 'NIRV' *means EPA Publication 1411: Noise from Industry in Regional Victoria*

e. 'noise sensitive areas' are locations defined as such in the Glossary in NIRV.

Wind Farm Performance Requirements

12. Subject to condition 14, at any wind speed, noise emissions from the operation of the wind energy facility, when measured at noise sensitive locations, must comply with the limits specified in the Standard.

13. If sound from turbine(s) has a special audible characteristic at any noise sensitive location(s), the measured sound level will have a penalty applied in accordance with the Standard.

14. The limits specified in the Standard do not apply if an agreement has been entered into with the relevant landowner waiving the limits at a noise sensitive location. The agreement must be in a form that applies to the land comprising the noise sensitive location for the life of the wind energy facility, to the satisfaction of the responsible authority, and be provided to the responsible authority upon request.

Ancillary Infrastructure Performance Requirements

15. Subject to condition 16, noise from ancillary infrastructure associated with the wind energy facility must comply with the relevant recommended noise levels for noise sensitive areas in accordance with NIRV.

16. The levels specified in NIRV do not apply if an agreement has been entered into with the relevant landowner waiving the levels at a noise sensitive area. The agreement must be in a form that applies to the land comprising the noise sensitive area for the life of the

wind energy facility, to the satisfaction of the responsible authority, and be provided to the responsible authority upon request.

Pre-Construction Noise Assessment

17. Before development starts, a Pre-Construction Noise Assessment Report must be undertaken based on the final turbine layout, turbine model to be installed and the detailed design of the ancillary infrastructure. The report must be submitted to, approved and endorsed by the responsible authority.

18. The Pre-construction Noise Assessment Report must:

    a. be prepared in accordance with the Standard and NIRV and must demonstrate that the wind energy facility will comply with the performance requirements specified in the Standard and NIRV, to the satisfaction of the responsible authority

    b. include background noise monitoring conducted at the three closest houses described as House A, House B and House C in the *Inverleigh Wind Farm, Inverleigh, Victoria*, *Environmental Noise Assessment* prepared by Resonate Acoustics dated 24 January 2018, subject to approval from the property owners that meets the requirements of condition 19.

19. Background noise monitoring must:

    a. include at least 4,032 valid data points collected for each background noise monitoring site

    b. separately determine background noise levels for both all-time periods and for the night time period (10 pm to 7 am).

20. The Pre-Construction Noise Assessment Report must be accompanied by an environmental audit report prepared under Part IXD, Section 53V of the *Environment Protection Act 1970* from an environmental auditor appointed under Part IXD of the *Environment Protection Act 1970*. The environmental audit report must verify that the acoustic assessment undertaken for the purpose of the Pre-Construction Noise Assessment Report has been conducted in accordance with the Standard and NIRV and meets the requirements of this permit.

Post-Construction Noise Assessment

21. A Post-Construction Noise Assessment Report must be submitted to the responsible authority. If the wind energy facility is constructed in stages, additional Post-Construction Noise Assessment Reports for each stage must be submitted to the responsible authority.

    The Post-Construction Noise Assessment Report(s) must:

    a. be prepared in accordance with the Standard and NIRV

    b. demonstrate that the wind energy facility complies with the performance requirements specified in the Standard and NIRV and the requirements of this permit,

    all to the satisfaction of the responsible authority.

22. The initial Post-Construction Noise Assessment Report must be submitted to and approved by the responsible authority within 12 months of the first turbine commencing operation. If the wind energy facility is constructed in stages, the further Post-Construction Noise Assessment Reports must be submitted to the responsible authority annually from the date of the first report being submitted until one year after the final turbine commences operation.

23. Each Post-Construction Noise Assessment Report must be accompanied by an environmental audit report prepared under Part IXD, Section 53V of the *Environment Protection Act 1970* by an environmental auditor appointed under Part IXD of the *Environment Protection Act 1970*. The environmental audit report must verify that the acoustic assessment undertaken for the purpose of the Post-Construction Noise Assessment Report has been conducted in accordance with the Standard.

Noise Management Plan

24. Before development starts, a Noise Management Plan must be submitted to, approved and endorsed by the responsible authority. When endorsed, the Noise Management Plan will form part of this permit.

    The Noise Management Plan must specify the following, to the satisfaction of the responsible authority:

    a. Post-Construction Noise Assessment Reports: detailing how these will be prepared in accordance with the Standard and NIRV, to demonstrate whether or not the wind energy facility complies with the performance requirements specified in the Standard and NIRV and the requirements of this permit

    b. Noise Investigation Reports: detailing procedures for when complaints are received in accordance with the endorsed Complaints Investigation and Response Plan required by conditions 71 and 72 of this permit, or when potential non-compliance with the performance requirements in the Standard and NIRV is otherwise detected

    c. Noise Remediation Plans: detailing procedures for rectifying non-compliance with the performance requirements in the Standard and NIRV that may be found to have occurred

    d. the requirements for each of the documents referred to in conditions 24(a), 24(b) and 24(c), including what matters they must address, and when they must be submitted to the responsible authority.

25. The Noise Management Plan must be accompanied by an environmental audit report prepared under Part IXD, Section 53V of the *Environment Protection Act 1970* by an environmental auditor appointed under Part IXD of the *Environment Protection Act 1970*. The environmental audit report must verify that the Noise Management Plan meets the requirements of the Standard, NIRV and this permit.

26. The endorsed Noise Management Plan:

    a. must be implemented to the satisfaction of the responsible authority

b. must not be altered or modified without the written consent of the responsible authority.

Audit or Peer Review of Noise Reports and Plans

27. If requested by the responsible authority, the Noise Investigation Reports required under condition 24(b) must be accompanied by an environmental audit report prepared under Part IXD, Section 53V of the *Environment Protection Act 1970* by an environmental auditor appointed under Part IXD of the *Environment Protection Act 1970*. The environmental audit report must verify that the acoustic assessment undertaken for the purpose of the Noise Investigation Report has been conducted in accordance with the Standard.

28. The environmental auditor or peer reviewer for all noise reports or plans required under this permit must be independent of the author of the report or plan being reviewed.

SHADOW FLICKER

29. Shadow flicker from the wind energy facility must not exceed 30 hours per annum at any dwelling existing at [insert the date of the permit], unless an agreement has been entered into with the relevant landowner waiving this requirement. The agreement must be in a form that applies to the land on which the dwelling is located for the life of the wind energy facility, to the satisfaction of the responsible authority, and must be provided to the responsible authority upon request.

TELECOMMUNICATIONS, TELEVISION AND RADIO RECEPTION AND INTERFERENCE

30. Before development starts, a Telecommunications, Television and Radio Reception Strength Survey must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the survey will form part of this permit.

    The Telecommunications, Television and Radio Reception Strength Survey must:

    a. be carried out by an independent, suitably qualified and experienced telecommunications, television and radio reception monitoring specialist

    b. include a baseline survey of all relevant services, including mobile phone services and GPS guidance systems used for precision agronomy, within 5 kilometres of the wind energy facility to enable the average signal strengths to be determined for all relevant services

    c. include testing at selected locations within 5 kilometres of the wind energy facility to enable the average telecommunications, television and radio reception strength to be determined.

31. If a complaint is received regarding the effect of the wind energy facility on telecommunications, television or radio reception at a dwelling existing at [insert the date of the permit] within 5 kilometres of the site, the operator must:

    a. investigate the complaint in accordance with the Complaint Investigation and Response Plan required by this permit

    b. if the investigation indicates that the facility has had a detrimental impact on the quality of reception, restore reception at the dwelling to at least the quality

determined in the Telecommunications, Television and Radio Reception Strength Survey required by this permit,

all to the satisfaction of the responsible authority.

TRAFFIC MANAGEMENT

Pre-Construction Public Road Survey

32. Before development starts, a Pre-Construction Public Road Survey must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the survey will form part of this permit.

    The Pre-Construction Public Road Survey must:

    a. be prepared by a suitably qualified and experienced independent civil or traffic engineer

    b. be approved by the Surf Coast Shire Council as road authority prior to submission to the responsible authority for endorsement

    c. include a pre-development assessment of the Inverleigh-Winchelsea Road, Peels Road, Gnarwarre Road and Mount Pollock Road, including details of their suitability, design and construction standard

    d. include recommendations, if any, regarding upgrades required to accommodate construction traffic, and to meet the requirements of condition 33.

Vehicle Access Points

33. Vehicle access points must be designed and located to the following standards, to the satisfaction of the relevant road management authority (or authorities):

    a. truck movements to and from the land must be able to be accommodated on sealed roadways where available

    b. to the extent practicable, access points must be able to accommodate turning movements without vehicles encroaching onto the incorrect side of the road

    c. safe sight distances must be provided

    d. potential through traffic conflicts must be avoided.

34. Access points must not be included on Mount Pollock Road unless it is upgraded to the satisfaction of Surf Coast Shire Council as road management authority before development starts.

Traffic Management Plan

35. Before development starts, a Traffic Management Plan must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the plan will form part of this permit.

    The Traffic Management Plan must:

    a. be prepared by a suitably qualified and experienced independent civil or traffic engineer

b. be approved by the relevant road management authority (or authorities) prior to submission to the responsible authority for endorsement

c. designate appropriate construction and transport vehicle routes to the site. Routes must not include Mount Pollock Road unless it is upgraded to the satisfaction of Surf Coast Shire Council as road management authority prior to development starting

d. include detailed engineering plans for the upgrade of:

   i. Peels Road, between Inverleigh-Winchelsea Road and Gnarwarre Road, to a sealed road as well as the timing of such works, to allow for safe truck turning movements

   ii. the following intersections:

   - Princes Highway and Inverleigh-Winchelsea Road
   - Peels Road and Inverleigh-Winchelsea Road
   - Peels Road and Gnarwarre Road
   - Gnarwarre Road and the site access point

   iii. Mount Pollock Road, if upgrades are required pursuant to condition 35(c)

e. designate principal and other vehicle access points to the wind energy facility from surrounding roads, and specify the detailed design of the connection between the internal access tracks and public roads. Vehicle access points must meet the requirements of conditions 33 and 34

f. specify measures to be taken to appropriately eliminate, reduce or mitigate road safety hazards and traffic impacts associated with the construction of the wind energy facility

g. address potential environmental and social impacts of associated with traffic generated by construction of the wind energy facility. This must include coordination between construction traffic and school bus travel, demonstrating consultation with Public Transport Victoria on this matter, including hours that construction traffic will use public roads

h. include details of signage to be removed, installed or replaced during specific construction activities such as the delivery of over-size infrastructure to the site

i. identify any areas of roadside native vegetation that may require removal or protection, the practices to be followed, and acknowledging that additional approvals may be required if removal of native vegetation is required

j. include a program with suitable timeframes to regularly inspect and maintain as well as (where required) repair public roads used by construction traffic.

36. The endorsed Traffic Management Plan must be implemented to the satisfaction of the responsible authority and relevant road management authority (or authorities).

37. The endorsed Traffic Management Plan must not be altered or modified without the written consent of the responsible authority. Any proposed alteration or modification to the endorsed Traffic Management Plan must be approved by the relevant road management authority (or authorities) prior to submission to the responsible authority for endorsement.

Post-Construction Public Road Survey

38. Once construction of the development is completed, a Post-Construction Public Road Survey must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the survey will form part of this permit.

    The Post-Construction Public Road Survey must:

    a. be prepared by a suitably qualified and experienced independent civil or traffic engineer

    b. be approved by the Surf Coast Shire Council as road authority prior to submission to the responsible authority for endorsement

    c. include a post-construction assessment of the Inverleigh-Winchelsea Road, Peels Road, Gnarwarre Road and Mount Pollock Road

    d. include recommendations, if any, regarding works required to repair damage done by construction traffic.

39. Any damage to the roads identified in the Post-Construction Survey must be remediated to the satisfaction of the Surf Coast Shire Council as road authority within four weeks of the completion of construction of the development, or by an alternative date agreed in writing with the Surf Coast Shire Council.

Roadworks

40. The developer must carry out any roadworks required under this permit or the Traffic Management Plan to the satisfaction of the relevant road authority. If works are not completed within nominated timeframes, the works may be undertaken by the road authority at the developer's expense. If Surf Coast Shire Council does not receive reimbursement of any costs it incurs pursuant to this condition within four weeks after the works are completed, the amount will be deducted from the security deposit or bond paid under condition 41.

Note: Works required under this permit or the Traffic Management Plan may require additional permits from the relevant road authority, including an Asset Protection Permit or a Works Within Road Reserve Permit from Surf Coast Shire Council. Any such permits must be obtained before works commence.

Security Deposit or Bond

41. Before development starts, a payment of a security deposit or bond for $150,000 must be made to the Surf Coast Shire Council, as road authority, for a period of 12 months commencing upon completion of the construction of development, for rectifying any defects identified in local roads or road-related infrastructure upgraded, repaired or maintained under the conditions of this permit or the Traffic Management Plan.

ENVIRONMENT MANAGEMENT PLAN

In conditions 42-49:

a. 'The Biodiversity Assessment' means *Biodiversity Assessment, Inverleigh Wind Farm, Gnawarre, Victoria,* dated May 2018 by Ecology and Heritage Partners.

Environment Management Plan

42. Before development starts, an Environment Management Plan must be submitted to, approved and endorsed by the responsible authority. The Environment Management Plan must be prepared in consultation with DELWP. When endorsed, the Environmental Management Plan will form part of this permit.

    The Environment Management Plan must:

    a. describe measures to minimise any amenity and environmental impacts of the construction, operation and decommissioning of the wind energy facility and the solar farm permitted under Permit 18/0356 dated [insert]

    b. be generally in accordance with the Biodiversity Assessment, including mitigation measures outlined on page 36

    c. include organisational responsibilities, and procedures for staff training and communication.

43. The endorsed Environment Management Plan:

    a. must be implemented to the satisfaction of the responsible authority

    b. must not be altered or modified without the written consent of the responsible authority.

Construction Environment Management Plan

44. The Environment Management Plan must include a Construction Environment Management Plan, which must include:

    a. procedures to manage noise emissions generally in accordance with the requirements of the *Noise Control Guidelines* (EPA Publication 1254) and the Environmental Guidelines for major construction sites (EPA Publication 480)

    b. erosion and sediment control measures to ensure that no polluted and/or sediment laden run-off is discharged directly or indirectly into drains or watercourses. Straw or hay must not be used for these measures

    c. procedures to manage dust emissions, including ensuring that any on-site blasting or crushing of rocks is appropriately located within the site to manage amenity impacts on surrounding properties

    d. procedures and measures to identify and protect native vegetation and fauna habitat to be retained during works, including the Stony Knoll Shrubland, as identified in Figure 3 in the Biodiversity Assessment

    e. vehicle and equipment hygiene measures to prevent the spread of weeds and pathogens to and from the site

f. procedures to remove temporary works, plant, equipment, buildings and staging areas, and reinstate the affected parts of the land, and to rehabilitate construction zones with appropriate species (i.e. pasture), when construction is complete

g. the persons responsible for implementing the above measures.

Bat and Avifauna Management Plan

In conditions 45-49, 'listed species' means all bat and avifauna species listed as:

a. threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act)

b. threatened or migratory under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

45. The Environment Management Plan must include a Bat and Avifauna Management Plan (BAM Plan). The BAM Plan must be prepared in consultation with the DELWP. Once endorsed, the BAM Plan must be placed on the project website without delay and remain on the website for the operating life of the wind energy facility.

    The BAM Plan must include:

    a. a statement of the objectives and overall strategy for minimising bird and bat mortalities arising from the operation of the facility, which must include:

        i. strategies to detect, manage and if possible mitigate significant impacts on listed species due to collisions arising from the operation of the facility

        ii. a definition of 'significant impact'

    b. a comprehensive, science-based monitoring program to monitor and detect mortality of listed species and any other bat and avifauna species (including the statistical analysis of results). The monitoring program must commence when the first turbine commences operating and must be carried out for a duration of five years. The duration and timing of the monitoring plan may be altered with the written consent of the responsible authority. The monitoring program must include:

        i. surveys conducted at an agreed time interval and agreed sampling frequency to confidently ascertain:

            - the species, number, age, sex (if possible) and date of any listed species mortality and any other bat and avifauna species mortality
            - seasonal and yearly variation in listed species and any other bat and avifauna species mortality
            - whether further detailed investigations of any potential impacts on listed species and any other bat and avifauna species mortality are warranted

        ii. procedures for reporting strikes/mortalities of listed species to DELWP within 7 days of becoming aware of any strike/mortality

        iii. procedures for reporting strikes/mortalities of bat and avifauna species other than listed species, including Wedge-tailed Eagle, to DELWP quarterly

iv. measures for mitigating any significant impact on the Wedge-tailed Eagle population, where practicable

v. information on the efficacy of searches for carcasses of species, and information on the rate of removal of carcasses by scavengers, so that correction factors can be determined to enable calculations of the likely total number of mortalities

vi. procedures for determining whether further detailed investigations of any potential impacts on native bat and avifauna species are warranted. Any further detailed investigations required are to be undertaken in consultation with DELWP and to the satisfaction of the responsible authority

Brolga

46. In relation to Brolga, the BAM Plan must also include:

    a. a thorough assessment prepared in consultation with DELWP of any breeding or flocking sites and their significance to the wind energy facility layout with reference to the *Interim Guidelines for Assessment, Avoidance, Mitigation and Offsetting of Potential Wind Farm Impacts on the Victorian Brolga Population* 2011 (DSE 2012), (the Interim Brolga Guidelines)

    b. if Brolga breeding or flocking activity is identified within 3.5km and 5.3km respectively of the wind energy facility, Brolga mortality monitoring must be undertaken for the life of the facility

    c. If mortality of Brolga is detected during operation of the wind farm, mitigation and offsetting the mortality must occur to achieve zero net impact in line with the Interim Brolga Guidelines.

Southern Bent-Wing Bat

47. In relation to Southern Bent-Wing Bat, the BAM Plan must also include a desktop assessment of any potential Southern Bent-wing Bat roosting habitat within 20kms of the wind energy facility to the satisfaction of DELWP. The survey must be completed before development starts.

Reporting

48. When the monitoring program required under the BAM Plan is complete, the operator must submit a report to the responsible authority setting out the findings of the program. The report must be:

    a. To the satisfaction of the responsible authority.

    b. Made publicly available on the project website for the operating life of the wind energy facility.

49. After considering the information reported under conditions 45(b)(ii) and 46(b), and after consultation with DELWP, the responsible authority may direct the operator to conduct further investigation of impacts on listed species. The further investigation must be undertaken by the operator to the satisfaction of the responsible authority.

Data sharing

50. Reporting under conditions 45(b)(ii) and (iii) and 46(b) must be made publicly available on the project website without delay and remain on the website for the length of the operation of the wind energy facility.

51. The developer must enter a data sharing agreement with DELWP to provide georeferenced, time stamped, data that is collected as part of the BAM Plan including timely addition to the Victorian Biodiversity Atlas.

Blasting Management Plan

52. If any blasting is proposed to be undertaken on the site as part of construction of the wind energy facility, the Environmental Management Plan must include a Blasting Management Plan. The Blasting Management Plan must include:

    a. the name and qualification of the person responsible for blasting

    b. a description of the locations where the explosives will be used, and the locations of every licensed bore on any property with an adjoining boundary within 1 kilometre of the blasting

    c. a requirement that blasting only occur at least 48 hours after 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 1 kilometre of the location of the proposed blasting

    d. a requirement for the identification and assessment of any potentially sensitive site within 1 kilometre of the location of blasting, including the procedure for pre-blast and post-blast qualitative measurement or monitoring at such sites

    e. procedures for site clearance and post blast reoccupation

    f. procedures for the storage and handling of explosives

    g. a requirement that blasting only be undertaken between the hours of 8am and 4pm.

    For the purposes of this condition, a 'sensitive site' means any land within 10 metres of a residence, hospital, school, or other premises in which people could reasonably expect to be free from undue annoyance and nuisance caused by blasting.

NATIVE VEGETATION

In conditions 53-56:

    a. 'the Biodiversity Assessment' means *Biodiversity Assessment, Inverleigh Wind Farm, Gnawarre, Victoria,* dated May 2018 by Ecology and Heritage Partners.

53. Before any native vegetation is removed, all persons undertaking vegetation removal or works on site must be advised of all relevant permit conditions and associated statutory requirements or approvals.

54. Native vegetation removal must be generally in accordance the plans endorsed under condition 1 of this permit.

55. There must be no removal of any ecological vegetation classes identified in Figure 3 in the Biodiversity Assessment.
56. The following activities are prohibited within the area of native vegetation to be retained as shown in Figure 3 of the Biodiversity Assessment, except with the written consent of the responsible authority:
    a. vehicular or pedestrian access
    b. trenching or soil excavations
    c. storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products
    d. entry and exit pits for the provision of underground services
    e. any other actions or activities that may result in adverse impacts to retained native vegetation.

REFERRAL AUTHORITY CONDITIONS

AusNet Services

57. No part of any wind turbine or anemometry mast shall be capable of coming within 60 metres of AusNet Transmission Group's easement.
58. No buildings or structures are permitted on AusNet Transmission Group's easement other than interface works required for connection of the wind farm electrical system to the 220-kilovolt transmission line. Design plans for such work must be submitted to and approved in writing by AusNet Transmission Group prior to the commencement of construction.
59. Details of any road or track construction and the installation of services within the easement must be submitted to AusNet Transmission Group and approved in writing prior to the commencement of work on site.
60. Gates must be installed in any new boundary fences that cross the easement to enable access by AusNet Transmission Group vehicles.
61. Natural ground surface levels on the easement must not be altered by the stockpiling of excavated material or by landscaping without prior written approval from AusNet Transmission Group.
62. A 'Permit to Work Adjacent to Exposed High Voltage Electrical Apparatus' must be obtained prior to the commencement of any works on the easement that involves the use of any plant or equipment exceeding 3 metres operating height.
63. Parking, loading, unloading and load adjustment of large commercial vehicles is not permitted on the easement.
64. All future works in the easement must be submitted to AusNet Transmission Group and approved in writing prior to the commencement of work on site.

AVIATION

65. Within 30 days of the endorsement of development plans under condition 1, copies of the endorsed plans must be provided to:
    a. the Civil Aviation Safety Authority
    b. the Department of Defence (Royal Australian Air Force Aeronautical Information Service)
    c. Airservices Australia
    d. any aerodrome operator within 30 kilometres of the external property boundaries of the site
    e. the owner and operator of the Gnarwarre Aircraft Landing Area
    f. the Aerial Application Association of Australia
    g. any agency responsible for providing aerial firefighting or air ambulance services in the area (e.g. Country Fire Authority or Rural Ambulance Victoria).
66. If there are any changes to the location or height of turbines or anemometer masts during construction, Airservices Australia must be advised or the proposed change before construction of the relevant turbine or anemometer mast starts, to enable details of any changes to be shown on aeronautical charts of the area.
67. The position of the anemometer mast shown on the plans contained in the *Inverleigh Wind Farm Planning Permit Application: Booklet of Plans, Maps & Images*, dated July 2018 (Revision 2) submitted with the application must be reviewed by a suitably qualified independent person to ensure use of the Gnarwarre Aircraft Landing Area can continue safely without significant impact from the anemometer mast, to the satisfaction of the responsible authority.
68. Obstacle marking on the anemometer mast must be provided in accordance with section 39 of the National Airports Safeguarding Framework Guideline D, which recommends the following:
    a. the top one third of wind monitoring towers to be painted in alternating contrasting bands of colour. Examples of effective measures can be found in the Manual of Standards for Part 139 of the Civil Aviation Safety Regulations 1998
    b. in areas where aerial agriculture operations take place, marker balls or high visibility flags can be used to increase the visibility of the towers
    c. marker balls, high visibility flags or high visibility sleeves to be placed on the outside guy wires
    d. the guy wire ground attachment points to have contrasting colours to the surrounding ground/vegetation.
69. Before development starts, the developer must develop an agreed set of protocols with the local aerial agricultural operators for all relevant operational issues, including notification of proposed aerial operations, to the satisfaction of the responsible authority.

EMERGENCY MANAGEMENT

Fire and Emergency Management Plan

70. Before development starts, a Fire and Emergency Management Plan must be prepared to the satisfaction of the responsible authority. The Fire and Emergency Management Plan must relate to both the wind energy facility and the solar farm permitted under Permit 18/0356 dated [insert]. Once endorsed, the plan will form part of this permit.

    The Fire and Emergency Management Plan must be prepared in consultation with the Country Fire Authority, and must include:

    a. a Fire Management Plan that incorporates measures to minimise the risk of fire breaking out on the site

    b. a Bushfire Risk Assessment, incorporating water supply requirements

    c. a Fuel Reduction and Maintenance Plan

    d. an Emergency Management Plan which ensures adequate fire-fighting and emergency vehicle access around and within the site

    e. any other risk management measures for the site.

COMPLAINTS

Complaint Investigation and Response Plan

71. Before development starts, a Complaint Investigation and Response Plan must be submitted to, approved and endorsed by the responsible authority. When endorsed the plan will form part of this permit.

    The Complaint Investigation and Response Plan must:

    a. respond to all aspects of the construction and operation of the wind energy facility

    b. be prepared in accordance with *Australian/New Zealand Standard AS/NZS 10002:2014 – Guidelines for complaint management in organisations*

    c. include a process to investigate and resolve complaints (different processes may be required for different types of complaints).

72. The endorsed Complaint Investigation and Response Plan:

    a. must be implemented to the satisfaction of the responsible authority

    b. must not be altered or modified without the written consent of the responsible authority.

Publishing Information about Complaints Handling

73. Before development starts, the following information must be made publicly available and readily accessible on the wind farm project website, or another publicly available resource to the satisfaction of the responsible authority:

    a. a copy of the endorsed Complaints Investigation and Response Plan

b. a toll-free telephone number and email contact for complaints and queries to the wind energy facility operator.

Complaints Register

74. Before development starts, a Complaints Register must be established which records:

    a. the complainant's name and address (if provided), including (for noise complaints) any applicable property reference number contained in the report titled *Inverleigh Wind Farm: Environmental Noise Assessment, by Resonate Acoustics, dated 24 January 2018, ref. M16637RP1 (Rev. A)*

    b. a receipt number for each complaint, which must be communicated to the complainant

    c. the time and date of the incident, and the prevailing weather and operational conditions at the time of the incident

    d. a description of the complainant's concerns, including (for a noise complaint) the potential occurrence of special audible characteristics

    e. the process for investigating the complaint, and the outcome of the investigation, including:

        i. the actions taken to resolve the complaint

        ii. for noise complaints, the findings and recommendations of an investigation report undertaken in accordance with the endorsed Noise Management Plan.

75. All complaints received must be recorded in the Complaints Register.

76. A complete copy of the Complaints Register along with a reference map of complaint locations must be provided to the responsible authority on each anniversary of the date of this permit, and at other times on request.

DECOMMISSIONING

77. Subject to condition 78, once a turbine(s) permanently cease operation, all infrastructure and structures must be removed, and the site must be rehabilitated to the condition it was in prior to development starting, to allow it to be used for agricultural purposes (or any proposed alternative use).

    Infrastructure to be removed includes, but is not limited to, all turbines, turbine foundations, substation, buildings, access tracks and above and below ground electrical infrastructure.

78. If the landowner requests, items of infrastructure that are suitable for the ongoing agricultural use of the land (or proposed alternative use) may be retained, subject to the approval of the responsible authority.

79. Within two months of a turbine(s) permanently ceasing operation, a Decommissioning Management Plan prepared by a suitably qualified person must be submitted to, approved and endorsed by the responsible authority. When endorsed, the Plan will form part of this permit.

The Plan must include, as a minimum:

a. identification of structures to be removed, and details of how infrastructure and structures will be removed

b. details of how the site will be rehabilitated to meet the requirements of condition 77

c. a requirement that a Decommissioning Traffic Management Plan be submitted to, approved and endorsed by the Surf Coast Shire Council prior to decommissioning works starting. The plan must specify measures to manage traffic impacts associated with removing the turbine(s) and associated infrastructure from the site, to the satisfaction of Surf Coast Shire Council

d. a requirement that all decommissioning works identified in the Decommissioning Management Plan be completed to satisfaction of the responsible authority as soon as practicable, but no later than 12 months after the Plan is endorsed, or such other period approved by the responsible authority.

80. The endorsed Decommissioning Management Plan:

a. must be implemented to the satisfaction of the responsible authority

b. must not be altered or modified without the written consent of the responsible authority.

EXPIRY

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

a. the development is not started within three (3) years of the date of this permit

b. the development is not completed within six (6) years of the date of this permit.

Appendix E Recommended conditions - solar farm

ADDRESS OF THE LAND:	Crown Allotments 1 and 2 Section 7 Parish of Carrung-e-murnong (VOL 04842 FOL 268)
THE PERMIT ALLOWS:	Use and development of land for a renewable energy facility, and earthworks

THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT

DEVELOPMENT PLANS

1. Before development starts, amended development plans must be submitted to, approved and endorsed by the responsible authority. When endorsed, the plans will form part of this permit.

   The plans must be fully dimensioned and drawn to a scale. The plans must be generally in accordance with the application plans generally titled *Inverleigh Solar Farm – Development Plan 1* and *Inverleigh Solar Farm – Development Plan 2 (both dated August 2018)* and *Inverleigh Solar Farm: Schematic of Proposed Solar Module (undated)*, and must include:

   a. the location, model, specifications, materials and finishes of the solar panels

   b. the location, elevation, materials and finishes of any ancillary buildings or works, which must be sighted and designed to minimise visual impact

   c. the colours and finishes of all buildings and works (including solar panels and supporting infrastructure), which must be non-reflective to minimise visual impact

   d. electricity cabling being located underground

   e. deletion of references to battery storage

   f. deletion of references to a temporary batching plant

   g. the location and design of any proposed business identification signage

   h. the location and nature of any native vegetation that is permitted for removal and all native vegetation to be retained within 100m of works.

2. The use and development must be generally in accordance with the endorsed development plans. The endorsed development plans must not be altered or modified without the written consent of the responsible authority.

STAGING

3. The use and development may be completed in stages in accordance with the endorsed development plans. The corresponding obligations arising under this permit may be completed in stages.

LANDSCAPING PLAN

4. Before the development starts, three copies of a Landscaping Plan must be prepared to the satisfaction of the responsible authority. The plan must be drawn to scale with dimensions. When approved, the plan will be endorsed and will form part of the permit.

   The plan must include:

   a. details (type, location and species) of vegetation buffers to provide screening of the solar panels from surrounding roads and from longer range views from elevated locations. The buffers must be a minimum width of seven metres and a minimum height of three metres

   b. details (type, location and species) of landscaping to screen buildings and structures (other than the solar panels) from surrounding roads

   c. details of how the land under the solar panels maintains ground cover at a reasonable level and the management of ground cover in the fire season

   d. timing of planting, which must be before development starts

   e. height of plants at maturity

   f. maintenance program, including weed management and the replacement of dead or diseased plants.

5. The endorsed Landscaping Plan:

   a. must be implemented to the satisfaction of the responsible authority

   b. must not be altered or modified without the written consent of the responsible authority.

NOISE

6. Noise from the renewable energy facility must comply with the relevant recommended noise levels for noise sensitive areas in accordance with the *EPA Publication 1411: Noise from Industry in Regional Victoria*.

TRAFFIC MANAGEMENT

Vehicle Access Points

7. Vehicle access points must be designed and located to the following standards, to the satisfaction of the relevant road management authority (or authorities):

   a. truck movements to and from the land must be able to be accommodated on sealed roadways where available

   b. to the extent practicable, access points must be able to accommodate turning movements without vehicles encroaching onto the incorrect side of the road

c. safe sight distances must be provided

d. potential through traffic conflicts must be avoided.

Traffic Management Plan

8. Before development starts, a Traffic Management Plan must be submitted to, approved and endorsed by the responsible authority. Once endorsed, the plan will form part of this permit.

   The Traffic Management Plan must:

   a. be prepared by a suitably qualified and experienced independent civil or traffic engineer

   b. be approved by the relevant road management authority (or authorities) prior to submission to the responsible authority for endorsement

   c. designate appropriate construction and transport vehicle routes to the site. Routes must not include Mount Pollock Road unless it is upgraded to the satisfaction of Surf Coast Shire Council as road management authority prior to development starting

   d. specify measures to be taken to appropriately eliminate, reduce or mitigate road safety hazards and traffic impacts associated with the construction of the solar farm

   e. address potential environmental and social impacts of associated with traffic generated by construction of the solar farm. This must include coordination between construction traffic and school bus travel, demonstrating consultation with Public Transport Victoria on this matter, including hours that construction traffic will use public roads.

9. The endorsed Traffic Management Plan must be implemented to the satisfaction of the responsible authority and relevant road management authority (or authorities).

10. The endorsed Traffic Management Plan must not be altered or modified without the written consent of the responsible authority. Any proposed alteration or modification to the endorsed Traffic Management Plan must be approved by the relevant road management authority (or authorities) prior to submission to the responsible authority for endorsement.

ENVIRONMENT MANAGEMENT PLAN

In conditions 11-13:

a. 'the Biodiversity Assessment' means *Biodiversity Assessment, Inverleigh Wind Farm, Gnawarre, Victoria,* dated May 2018 by Ecology and Heritage Partners.

Environment Management Plan

11. Before development starts, an Environment Management Plan must be submitted to, approved and endorsed by the responsible authority. The Environment Management Plan must be prepared in consultation with DELWP. When endorsed, the Environmental Management Plan will form part of this permit.

The Environment Management Plan must:

a. describe measures to minimise any amenity and environmental impacts of the construction, operation and decommissioning of the solar farm and the wind energy facility permitted under Permit PA1800340 dated [insert]

b. be generally in accordance with the Biodiversity Assessment, including mitigation measures outlined on page 36

c. include organisational responsibilities, and procedures for staff training and communication.

12. The endorsed Environment Management Plan:

a. must be implemented to the satisfaction of the responsible authority

b. must not be altered or modified without the written consent of the responsible authority.

Construction Environment Management Plan

13. The Environment Management Plan must include a Construction Environment Management Plan, which must include:

a. procedures to manage noise emissions generally in accordance with the requirements of the *Noise Control Guidelines* (EPA Publication 1254) and the Environmental Guidelines for major construction sites (EPA Publication 480)

b. erosion and sediment control measures to ensure that no polluted and/or sediment laden run-off is discharged directly or indirectly into drains or watercourses. Straw or hay must not be used for these measures

c. procedures to manage dust emissions, including ensuring that any on-site blasting or crushing of rocks is appropriately located within the site to manage amenity impacts on surrounding properties

d. procedures and measures to identify and protect native vegetation and fauna habitat to be retained during works, including the Stony Knoll Shrubland, as identified in Figure 3 in the Biodiversity Assessment

e. vehicle and equipment hygiene measures to prevent the spread of weeds and pathogens to and from the site

f. procedures to remove temporary works, plant, equipment, buildings and staging areas, and reinstate the affected parts of the land, and to rehabilitate construction zones with appropriate species (i.e. pasture), when construction is complete

g. the persons responsible for implementing the above measures.

Wildlife Management Plan

14. The Environment Management Plan must include a Wildlife Management Plan, outlining how the possible impact of white cockatoos or any other bird species on the solar panels or any other infrastructure would be mitigated by use of non-lethal control methods.

Drainage and Stormwater Plan

15. The Environment Management Plan must include a Drainage and Stormwater Plan, which must include:
    a. details (and computations) of how the works on the land are to be drained including drains conveying stormwater to the legal point of discharge
    b. details of how the drainage design allows for the continuation of existing overland flow paths across the land
    c. assessment of impacts of the development on onsite infiltration and surface flow patterns and downstream environments, wetlands, and adjacent landholders.

Glare, Glint and Light Spill Management Plan

16. The Environment Management Plan must include a Glare, Glint and Light Spill Management Plan, which must:
    a. demonstrate how glare, glint and light spill from the facility, in particular the solar panels, will be managed to minimise impacts on the surrounding area
    b. include details of how any lighting within the site is designed and located to effectively illuminate all pertinent public areas without spilling onto road reserves or adjoining land
    c. require lighting to be connected to a time switch or other approved system to the satisfaction of the responsible authority.

NATIVE VEGETATION

In conditions 17-20:

a. 'the Biodiversity Assessment' means *Biodiversity Assessment, Inverleigh Wind Farm, Gnawarre, Victoria,* dated May 2018 by Ecology and Heritage Partners.

17. Before any native vegetation is removed, all persons undertaking vegetation removal or works on site must be advised of all relevant permit conditions and associated statutory requirements or approvals.
18. Native vegetation removal must be generally in accordance the plans endorsed under condition 1 of this permit.
19. There must be no removal of any ecological vegetation classes identified in Figure 3 in the Biodiversity Assessment.
20. The following activities are prohibited within the area of native vegetation to be retained as shown in Figure 3 of the Biodiversity Assessment, except with the written consent of the responsible authority:
    a. vehicular or pedestrian access
    b. trenching or soil excavations
    c. storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products

d. entry and exit pits for the provision of underground services

e. any other actions or activities that may result in adverse impacts to retained native vegetation.

EMERGENCY MANAGEMENT

Fire and Emergency Management Plan

21. Before development starts, a Fire and Emergency Management Plan must be prepared to the satisfaction of the responsible authority. The Fire and Emergency Management Plan must relate to both the solar farm and the wind energy facility permitted under Permit PA1800340 dated [insert]. Once endorsed, the plan will form part of this permit.

    The Fire and Emergency Management Plan must be prepared in consultation with the Country Fire Authority, and must include:

    a. a Fire Management Plan that incorporates measures to minimise the risk of fire breaking out on the site

    b. a Bushfire Risk Assessment, incorporating water supply requirements

    c. a Fuel Reduction and Maintenance Plan

    d. an Emergency Management Plan which ensures adequate fire-fighting and emergency vehicle access around and within the site

    e. any other risk management measures for the site.

COMPLAINTS

Complaint Investigation and Response Plan

22. Before development starts, a Complaint Investigation and Response Plan must be submitted to, approved and endorsed by the responsible authority. When endorsed the plan will form part of this permit.

    The Complaint Investigation and Response Plan must:

    a. respond to all aspects of the construction and operation of the renewable energy facility

    b. be prepared in accordance with *Australian/New Zealand Standard AS/NZS 10002:2014 – Guidelines for complaint management in organisations*

    c. include a process to investigate and resolve complaints (different processes may be required for different types of complaints).

23. The endorsed Complaint Investigation and Response Plan:

    a. must be implemented to the satisfaction of the responsible authority

    b. must not be altered or modified without the written consent of the responsible authority.

Publishing Information about Complaints Handling

24. Before development starts, the following information must be made publicly available and readily accessible from the renewable energy facility project website, or another publicly available resource to the satisfaction of the responsible authority:
    a. a copy of the endorsed Complaints Investigation and Response Plan
    b. a toll-free telephone number and email contact for complaints and queries to the renewable energy facility operator.

Complaints Register

25. Before development starts, a Complaints Register must be established which records:
    a. the complainant's name and address (if provided)
    b. a receipt number for each complaint, which must be communicated to the complainant
    c. the time and date of the incident, and the prevailing weather and operational conditions at the time of the incident
    d. a description of the complainant's concerns
    e. the process for investigating the complaint, and the outcome of the investigation, including:
        i. the actions taken to resolve the complaint
        ii. the findings and recommendations of an investigation report undertaken.
26. All complaints received must be recorded in the Complaints Register.
27. A complete copy of the Complaints Register along with a reference map of complaint locations must be provided to the responsible authority on each anniversary of the date of this permit, and at other times on request.

DECOMMISSIONING

28. Subject to condition 29, once the solar farm permanently ceases operation, all infrastructure and structures must be removed, and the site must be rehabilitated to the condition it was in prior to the start of development, to allow it to be used for agricultural purposes (or any proposed alternative use).

    Infrastructure to be removed includes, but is not limited to, all solar panels, supporting infrastructure including foundations, substation, buildings, access tracks and above and below ground electrical infrastructure.
29. If the landowner requests, items of infrastructure that are suitable for the ongoing agricultural use of the land (or any proposed alternative use) may be retained, subject to the approval of the responsible authority.
30. Within two months of the solar farm permanently ceasing operation, a Decommissioning Management Plan prepared by a suitably qualified person must be submitted to, approved and endorsed by the responsible authority. When endorsed, the Plan will form part of this permit.

The Plan must include, as a minimum:

a. identification of structures to be removed, and details of how infrastructure and structures will be removed

b. details of how the site will be rehabilitated to meet the requirements of condition 28

c. a requirement that all decommissioning works identified in the Decommissioning Management Plan be completed to satisfaction of the responsible authority as soon as practicable, but no later than 12 months after the Plan is endorsed, or such other period approved by the responsible authority.

31. The endorsed Decommissioning Management Plan:

    a. must be implemented to the satisfaction of the responsible authority

    b. must not be altered or modified without the written consent of the responsible authority.

EXPIRY

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

    a. The development is not started within three (3) years of the date of this permit

    b. The development is not completed within six (6) years of the date of this permit.