Policy and Planning GUIDELINES for Development of WIND ENERGY Facilities in Victoria

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VICTORIA State Government | Environment, Land, Water and Planning

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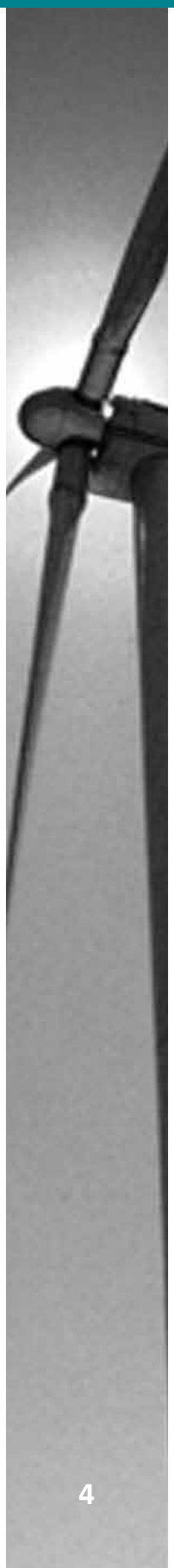
Introduction



Victoria has abundant wind resources, and wind energy facilities have the potential to provide for a significant proportion of Victoria's growth in electricity consumption. Victoria's wind resources are well suited to supporting a large-scale grid of connected wind energy facilities. The Victorian Government supports the development of the renewable energy sector as an important contributor to the sustainable delivery of Victoria's future energy needs.

These guidelines provide advice to a responsible authority, proponents and the community to provide guidance about suitable sites to locate wind energy facilities and to inform planning decisions about a wind energy facility proposal.

The purpose of these guidelines is to set out:

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

The guidelines also provide advice about locations in the state that are not appropriate to locate wind energy facilities and provide a framework to ensure proposals for wind energy facilities are thoroughly assessed, including where necessary the need for an Environment Effects Statement (EES).

These guidelines include a glossary where certain terms used in the guidelines are defined.

Section 1

Wind energy facilities

This section defines a Victorian wind energy facility and associated infrastructure for the purposes of the Victoria Planning Provisions (VPP).

1.1 What is a wind energy facility?

A wind energy facility has the following definition in all planning schemes (refer to Clause 74 (Land use terms) in the VPP):

> *Land used to generate electricity by wind force. It includes land use for:*
>
> *a) any turbine, building, or other structure or thing used in or in connection with the generation of electricity by wind force*
>
> *b) an anemometer.*
>
> *It does not include turbines principally used to supply electricity for domestic or rural use of the land.*

1.2 Anemometers and electricity grid connections

1.2.1 Anemometer

In Clause 72 (General terms) of the VPP, an anemometer is defined as a 'wind measuring device. It is used to measure the wind speed and direction at a site.

In accordance with Clause 62 of the VPP, a temporary anemometer may be located on a site for up to three years to monitor the suitability of the wind resource for a potential wind energy facility, without requiring a planning permit. At the end of the three-year period, the temporary anemometer must be removed or a planning permit issued for its long-term use.

An anemometer can also be assessed and approved as part of a wind energy facility.

1.2.2 Electricity grid connections

A wind energy facility requires a transmission or distribution system of power lines including substations and converter installations and other works to connect the wind energy facility to the electricity network. The transmission or distribution system is generally off-site and distant to the wind energy facility. However proponents are often seeking sites with close proximity to the existing distrubiton system.

The use of land to transmit or distribute electricity generated by wind, whether or not on the same land title as a wind energy facility, is a separate land use to that of a wind energy facility. The transmission or distribution system is defined as either a 'utility installation' or a 'minor utility installation' in Clause 74 (Land us terms) of the VPP, depending on the nature and

capacity of the transmission or distribution infrastructure. The Minister for Planning is the responsible authority for planning permit applications for transmission infrastructure associated with a wind energy facility. This includes any removal of native vegetation associated with this infrastructure.

A single planning permit application can include the wind energy facility and electricity network connection. Refer to Sections 3.2 (Who is the responsible authority?) and 4.3 (Meeting application requirements) of these guidelines.

1.3 Characteristics of a wind energy facility

Wind energy facilities need to be located on sites that have strong, steady winds throughout the year, good road access, proximity to the electricity grid and the capacity of the grid (existing and planned). They can vary considerably in size and scale depending on the physical features of the land, the wind resource available and the amount of energy to be generated.

A wind energy facility typically includes:

- a series of wind turbines
- one or more substations
- wind monitoring equipment, which can include an anemometer
- access tracks
- underground cabling connecting the wind turbines to the on-site metered point of output from the converter station where the generated electricity will enter the distribution system. This includes connections from the wind turbines to the on-site substations (i.e. an electricity generation, transmission and distribution system where voltage is transformed from high to low, or the reverse, using transformers).

A larger facility may also include:

- a quarry
- a temporary construction compound
- concrete batching plant(s)

The wind turbines used in commercial wind energy facilities are generally large, slowly rotating, three-bladed machines that produce between 1.5 and 3.0 MW of electrical output. The most common wind turbine has a generator and rotor blades mounted on top of a steel tower. The rotor blades generally rotate on a horizontal axis and the tower may be 110 metres or more in height.

Turbine height is driven by technological developments including:

- international improvements in technology, leading to larger, higher output turbines with longer rotor blades that require mounting on taller towers
- larger turbine diameters to harvest lower energy winds from a larger inflow area without increasing the cost of the rotor
- taller towers to take advantage of increasing wind speed at greater heights
- more efficient generation equipment and power electronics to accommodate sustained light wind operation at lower power levels without increasing electrical system costs.

The above trends could see turbine height increase in the next five to ten years. As technology develops, other forms of turbines may also be proposed.

Section 2

Wind energy in Victoria

This section describes Victoria's wind energy resource and outlines the broad planning policy and statutory context most relevant to assessment of wind facilities in Victoria.

2.1 Victorian wind resources

Wind speed is the single most important factor affecting the financial viability of a wind energy facility. Even small changes in wind speed due to the siting of individual wind turbines can substantially affect their energy output and therefore the financial viability of a wind energy project.

In Victoria, the prevailing winds tend to blow from the south-west direction and wind speeds vary significantly throughout the state. The highest wind speeds can be found along the coast, in central Victoria and in Victoria's alpine region.

The average wind speed across Victoria is 6.5 metres per second. Approximately two-thirds of Victoria's land area has average wind speed of 5.8 to 7.2 metres per second.

Local topographic conditions and temperature difference between land and sea can have a significant effect on wind speed, with minor changes in location resulting in major variations in speed.

The *Victorian Wind Atlas* (2003) provides detailed information about the wind resource in Victoria based on the results of the CSIRO's modelling and analysis of the wind resources for:

- the state as a whole
- individual local government areas.

The atlas provides information about Victoria's average wind resources at 65 metres above ground level to a resolution of three kilometres.

The modelled wind speed data is presented with a range of other information including:

- land use category
- electricity network
- elevation
- vegetation cover
- reference towns.

The *Victorian Wind Atlas* provides useful information for wind facility developers, councils and communities to assist in determining appropriate locations for a wind energy facility in a particular region. The information is correct to 2003 and for particular projects it will need to be supplemented with more recent site specific data and assessments.

2.2 Identifying suitable locations for wind energy development in Victoria

Wind energy facilities should not lead to unacceptable impacts on critical environmental, cultural or landscape values. Critical values are those protected under Commonwealth or Victorian legislation and assets of state or regional significance, mapped and recognised through planning schemes, including the State Planning Policy Framework (SPPF). In order to identify suitable locations for new wind energy development, the following matters need to be taken into consideration.

2.2.1 Environmental values

A responsible authority and applicants must consider a range of relevant environmental values and risk factors when identifying suitable sites for wind energy facility development.

These matters are set out in the VPP and include (but are not confined to) the following considerations:

(a) Flora and fauna

Impacts on flora and fauna species and habitat from wind energy facilities and associated infrastructure can be minimised through siting and design measures at the project planning stage. Project specific impacts can vary widely with location and species. The assessment of a proposed development must carefully examine any risk to flora and fauna species and project design and adaptive management measures should be applied where necessary.

Flora and fauna can be protected at the national and state levels.

At the national level, a responsible authority and proponent need to be aware of the following:

- The Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act) provides for the protection of matters of national environmental significance, including nationally significant threatened species and wetlands protected under the Convention of Wetlands of International Importance (the Ramsar Convention).
- The habitat values of wetlands and wetland wildlife habitat designated under the Ramsar Convention, or utilised by designated species under the Japan-Australia Migratory Birds Agreement (JAMBA) or the China-Australia Migratory Birds Agreement (CAMBA).

At the state level, a responsible authority and proponent must consider (as relevant) the following:

- The *Flora and Fauna Guarantee Act 1988* which provides protection for species and ecosystems that are of state-wide importance.
- The SPPF which sets out the state planning objectives for protection and conservation of biodiversity- refer to Clause 12.01 (Biodiversity) of the VPP.
- Clause 52.17 (Native Vegetation) of the VPP which provides the relevant decision making framework for native vegetation protection and conservation.

(b) Native vegetation

Losses of native vegetation and habitat could occur as a result of the siting of turbines and associated infrastructure. If native vegetation is proposed to be removed as part of a development proposal the responsible authority must have regard to *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industry 2013).

The SPPF sets out the Victorian Government's policy objective and provides relevant strategies and guidelines for native vegetation management in Clause 12.01-2 (Biodiversity) of the VPP. Additional planning provisions are set out in Clause 52.16 (Native vegetation precinct plan) and Clause 52.17 (Native vegetation).

Other environmental values and risk factors must also be considered in identifying suitable sites for wind energy facilities as set out in the SPPF.

2.2.2 Significant landscape values

The Victorian Government recognises that the Victorian community places a high value on landscapes with significant visual amenity due to their environmental, social and economic benefits. Strategic planning plays an important role in identifying and managing these important landscapes.

A responsible authority and proponents must consider (as relevant) Clause 12.04 (Significant environments and landscapes) of the SPPF.

In addition, strategic landscape studies have been completed for a number of regions across Victoria, including the *Great Ocean Road Region Landscape Assessment Study* (2004) and the *Coastal Spaces Landscape Assessment Study* (2006). These studies identify visually significant landscapes and provide appropriate recommendations for improved planning scheme guidance. Clause 12.02 (Coastal areas) of the SPPF requires these studies to be considered by a decision maker.

In planning schemes relevant local strategic studies may also be referenced in the Local Planning Policy Framework, and significant landscapes may be recognised in overlays, such as the Environmental Significance Overlay, Vegetation Protection Overlay or the Significant Landscape Overlay.

To help guide appropriate site selection, design and layout of individual wind turbines, consideration should be given to the significance of the landscape as described in relevant planning scheme objectives, including relevant overlays and strategic studies referenced in the planning scheme.

Suggested mitigation measures to minimise the potential impact of wind energy facilities on a landscape set out in section 5.1.3 of these guidelines should also be considered.

There are also requirements relating to landscape assessment under the state environmental assessment process. For details refer to section 3.4.1 of these guidelines.

2.2.3 Aboriginal cultural heritage values

Wind energy facilities and associated infrastructure have the potential to impact on Aboriginal cultural heritage values. These values are protected under Victoria's *Aboriginal Heritage Act 2006* and Aboriginal Heritage Regulations 2007. It is important that any impacts and the views of relevant Aboriginal people are considered in the early planning stages of a wind energy facility. The Department of Environment, Land, Water and Planning's (DELWP) practice note *The Aboriginal Heritage Act 2006 and the planning permit process* provides guidance and assistance. The practice note can be obtained at www.delwp.vic.gov.au/planning-practice-notes.

Where wind energy facilities are located on Crown Land, a range of legal requirements, including the provisions of the Commonwealth *Native Title Act 1993*, may apply.

A responsible authority and proponents must also consider Clause 15.03-2 (Aboriginal cultural heritage) of the SPPF, which sets out the Victorian Government's policy for the protection and conservation of places of Aboriginal cultural heritage significance.

2.2.4 Exclusion of wind energy facilities in National Parks, State Parks and Coastal Parks and other high quality environmental and landscape locations in the state

Wind energy facilities are not permitted in the following areas, in recognition of their landscape and environmental values:

- National Parks and other land subject to the *National Parks Act 1975*
- Ramsar wetlands as defined under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
- Yarra Valley and Dandenong ranges, Bellarine and Mornington Peninsulas, the Great Ocean Road area within five kilometres of the high water mark, and Macedon and McHarg Ranges
- the area within five kilometres of the high water mark of the Bass Coast, west of Wilsons Promontory.

The specific locations of these areas where wind energy facilities are not permitted are specified in the relevant planning schemes, in Clause 52.32-2 and the schedule to this clause.

Exceptions to wind energy facility prohibitions include:

1. where the turbines are principally used to supply electricity for domestic or rural use of the land. These turbines are excluded from the definition of a wind energy facility in the *Victoria Planning Provisions*.*
2. turbines on land in a residential zone, an industrial zone, a commercial zone or a special purpose zone that are integrated as part of the development. This allows for the consideration of turbines in an urban setting which would allow for the generation of electricity to support the energy needs of a dwelling, industry, business or the like on the land.*
3. turbines principally used to supply electricity to a facility used in conjunction with conservation, recreation, administration, or accommodation use on land described in a schedule to the *National Parks Act 1975*. This allows for the generation of electricity for park facilities.

*A turbine generating electricity for on-site use may be connected to the grid. The critical question in these circumstances is whether the wind energy facility or turbine(s) generates an amount of electricity that is generally proportional to the electricity requirements of the use of the land.

2.2.5 Exclusion of wind energy facilities in locations that are likely to be required for future population growth

A wind energy facility is a prohibited use in an Urban Growth Zone.

A wind energy facility is also prohibited on land within five kilometres of major regional cities and centres specified in the Regional Victoria Settlement Framework plan in the SPPF, being:

> Ararat, Bairnsdale, Ballarat, Bendigo, Benalla, Colac, Echuca, Geelong, Hamilton, Horsham, Mildura, Moe, Morwell, Portland, Shepparton, Swan Hill, Traralgon, Sale, Wangaratta, Warrnambool and Wodonga.

These locations are specified in the relevant planning schemes in the schedule to Clause 52.32-2. The five kilometre exclusion areas are proposed to be replaced by more specific locations once the future growth planning for these centres has been completed.

These prohibitions do not apply:

1. where the turbine is principally used to supply electricity for domestic or rural use of the land
2. on land in a residential zone, an industrial zone, a commercial zone or a special purpose zone that are integrated as part of the development. This allows for the consideration of turbines in an urban setting which would allow for the generation of electricity to support the energy needs of a dwelling, industry, business or the like on the land.

2.2.6 Turbines within one kilometre of an existing dwelling

If an existing dwelling is located within one kilometre of any turbine that forms part of a proposed wind energy facility, the permit application must be accompanied by evidence of the written consent of the owner of the dwelling. The application is prohibited by the planning scheme where evidence of written consent is not provided. This does not apply:

1. where the turbine is principally used to supply electricity for domestic or rural use of the land
2. on land in a residential zone, an industrial zone, a commercial zone or a special purpose zone. This allows for the consideration of turbines in an urban setting
3. to an application to amend an existing permit unless the amendment proposes to increase the number of turbines or move a turbine so that it is located closer to an existing dwelling (within one kilometre of a turbine) than the closest permitted turbine to that dwelling. Refer to Section 4.3.1(b) Application to amend a planning permit.

Section 3

Planning framework for wind energy facility proposals

This section provides a decision-making framework for the assessment of wind energy facility applications.

3.1 Decision-making framework for a planning permit application

The use and development of land for the purpose of a wind energy facility requires a planning permit, under Clause 52.32-2 of the VPP.

All planning schemes include provisions that apply to assessing proposals for wind energy facilities. These provisions include:

- the definition of a wind energy facility in Clause 74 (Land use terms)
- state planning policy for renewable energy in Clause 19.01 of the State Planning Policy Framework (SPPF)
- planning provisions and requirements for planning permit applications set out in Clause 52.32 (Wind Energy Facility)
- planning permit exemptions for anemometers erected for less than three years set out in Clause 62.01.

3.2 Who is the responsible authority?

The Minister for Planning is the responsible authority for a new application for a permit for a wind energy facility.

Refer to Section 6 of these guidelines regarding planning permit adminstration and enforcement.

Note: If a project is subject to the requirements of the *Environment Effects Act 1978*, the *Planning and Environment Act 1987* prescribes the planning permit process that will apply. See section 3.4.1 of these guidelines.

3.3 Other statutory approvals

Apart from obtaining planning approval for a wind energy facility, proponents should be aware that there may be other regulatory requirements at both the state level in Victoria and the national level. These include:

- for Victoria:
  - *Environment Effects Act 1978*
  - *Aboriginal Heritage Act 2006*
  - *Flora and Fauna Guarantee Act 1988* (FFG Act)
- for the Commonwealth
  - *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
  - *Native Title Act 1993*

The onus is on the proponent to contact the relevant agency to determine its requirements. Relevant agency contacts and a list of legislation that may impact on a proposed wind energy facility can be found at www.delwp.vic.gov.au/planning-wind-energy.

3.3.1 State environmental assessment

The Minister for Planning is responsible for administering the *Environment Effects Act 1978* and for deciding whether an Environment Effects Statement (EES) is required under that Act. If a proposal is likely to have a significant effect on the environment, it should be referred to the Minister for a decision on the need for an EES.

The onus is on the proponent to refer a proposal to the Minister for Planning to determine whether an EES is required.

The Minister for Planning will require a preliminary landscape assessment to accompany a referral of a proposed wind energy facility. Should an EES be required, then it must include an independently peer-reviewed visual impact assessment by a suitably qualified and experienced person.

The ministerial guidelines for assessment of environmental effects under the *Environment Effects Act 1978* provide guidance on EES processes. More information can be found at www.delwp.vic.gov.au/environmental-assessment.

3.3.2 Commonwealth environmental assessment

A proposal may also need approval under the EPBC Act if it is likely to have a significant impact on matters of national environmental significance, for example, listed threatened or migratory species.

When a person proposes to take an action that they believe may need approval under the EPBC Act, they must refer the proposal to the Commonwealth Minister for Environment. If the Minister determines that an approval is required, the proposed action must be assessed under the EPBC Act.

Further information on the operation of the EPBC Act is available from the Federal Department of Environment, or for help in deciding whether an action should be referred, you should consult the EPBC Administrative Guidelines on Significance at www.environment.gov.au/epbc/publications, including the *Significant Impact Guidelines 1.1: Matters of National Environmental Significance* (2009) and the *EPBC Act Policy Statement 2.3 – Wind Farm Industry* (2009).

If approval is required under the EPBC Act, the project may need to be assessed using an assessment process specified under that Act, or an accredited state impact assessment process may be able to be used.

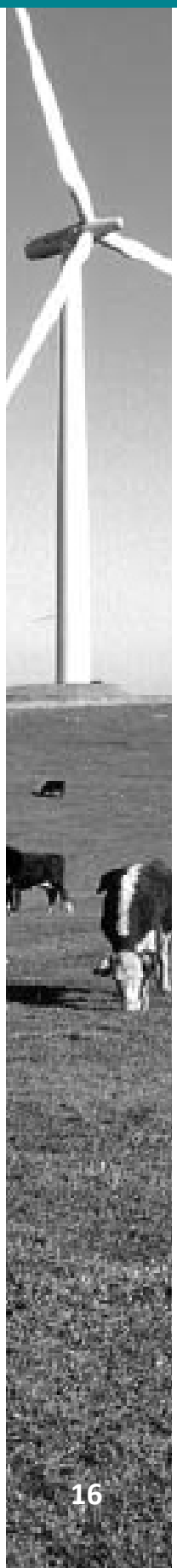
Under the Bilateral Agreement (2009) between Victoria and the Commonwealth, the following Victorian processes can be accredited:

- EES process
- Advisory Committee process
- planning permit process.

The Commonwealth Minister for Environment will make the final decision under the EPBC Act, even if a project is assessed using an accredited state impact assessment process.

Section 4

Planning permit applications – information for applicants



This section provides information for persons making an application for a permit for a wind energy facility.

4.1 The planning permit application process

The diagram on page 18 sets out the steps in a typical assessment process for a wind energy facility. Section 4.2 of these guidelines provides further details about preparing a planning permit application.

Proponents should also determine if any other parts of the proposal trigger the need for planning permit approval, such as off-site works or native vegetation removal.

Planning scheme zoning and overlay information for any location in Victoria can be obtained from www.dtpli.vic.gov.au/planningschemes.

4.1.1 Pre-application consultation with community and stakeholders

Pre-application consultation with the community and other stakeholders provides an opportunity for information gathering and exchange.

The development of a community and stakeholder communications and consultation plan is highly recommended, as it will help drive an effective and efficient consultative program.

Pre-application consultation is not a formal statutory requirement of the planning process, however effective pre-application consultation offers benefits for proponents and interested parties alike. After a planning permit application is lodged, there are statutory requirements to notify the public of a proposal.

Pre-application consultation provides the proponent with an opportunity to identify and understand any concerns of the community and stakeholders, and to obtain information and feedback on existing conditions and potential issues to address before the public notification phase of the planning permit application. Early consultation will assist in developing a well conceived proposal and contribute to an efficient assessment process.

Some principles to guide consultation include:

- start early
- ensure the consultation is well planned
- provide suitable opportunities for input by particular community and stakeholder groups

- communicate effectively by:
  - listening to what stakeholders and the public have to say
  - listening to what the local council, DELWP and other agencies have to say
  - providing sufficient information to enable stakeholders to make a useful contribution
  - providing briefings on progress and further information on request
  - being prepared to make improvements/changes to the proposal in response to stakeholder inputs
  - monitoring stakeholder involvement and inputs to refine and better target the consultation.

The proponent can contact the appropriate council or regional office of the relevant government department for advice regarding pre-application consultation and issues relating to planning and natural resource management.

For further guidance on preparing an appropriate community and stakeholder engagement framework and an effective community and stakeholder communications and consultation plan, refer to the:

- draft *National Wind Farm Development Guidelines* (July 2010), as amended, which are available at www.scew.gov.au
- *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia* (Auswind, December 2006), which are available at www.cleanenergycouncil.org.au
- *Effective Engagement Kit* – DSE (Version 3 September 2005), which is available at www.dse.vic.gov.au/engage

4.1.2 Lodgement and processing of planning permit applications

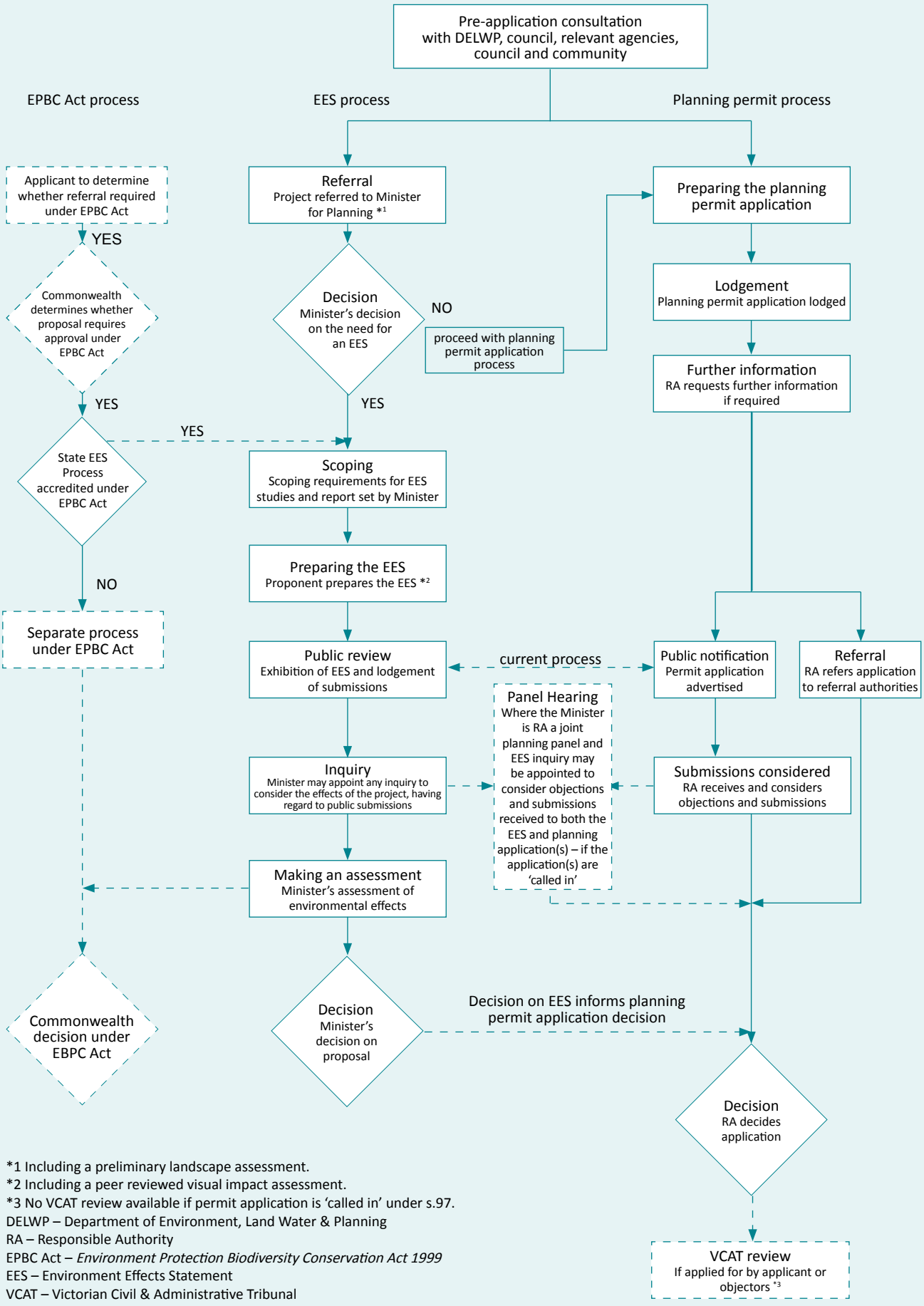
A planning permit application must be lodged with the responsible authority.

An application will not proceed until the proponent provides all the required information. A planning application must include sufficient information and explanation to allow the responsible authority to come to a sound and timely decision. Clauses 52.32-3 and 52.32-4 contain details of information that must be submitted with an application.

These guidelines will assist proponents in the design and siting of proposed wind energy facilities and in preparing planning permit applications. The draft *National Wind Farm Development Guidelines* (July 2010) and the *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia* (Auswind, December 2006) also provide guidance on the design and siting of wind energy facilities.

When all the relevant information has been received, the responsible authority will proceed with the public notification and referral requirements. Upon completion of notice and referral, the responsible authority will determine the application. Refer to the assessment process flowchart on page 18.

The assessment process flowchart



*1 Including a preliminary landscape assessment.
*2 Including a peer reviewed visual impact assessment.
*3 No VCAT review available if permit application is 'called in' under s.97.
DELWP – Department of Environment, Land Water & Planning
RA – Responsible Authority
EPBC Act – *Environment Protection Biodiversity Conservation Act 1999*
EES – Environment Effects Statement
VCAT – Victorian Civil & Administrative Tribunal

4.1.3 Decision options

The responsible authority may decide to grant a permit, refuse to grant a permit, or where objections have been received, issue notice of decision to grant a permit, giving objectors an opportunity to lodge an application for review at VCAT.

When drafting a permit, a responsible authority must comply with Form 4 of the Planning and Environment Regulations 2005. The manual *Writing Planning Permits* (2007) provides guidance on preparing planning permits. It is available at www.delwp.vic.gov.au/planning. Model conditions for permits for wind energy facilities have also been developed and are attached to these guidelines (see Attachment B).

If a permit is granted or notice of decision issued for a wind energy facility, it will normally be subject to conditions relating to noise, lighting of turbines, site environmental management, decommissioning and rehabilitation requirements, among other things.

If a permit is issued under Division 6 of the *Planning and Environment Act 1987* then the Minister's decision is final and cannot be reviewed by VCAT.

4.2 Preparing a planning permit application

4.2.1 Pre-application discussions

Research the planning controls and then talk to the responsible authority regarding:

- the relevant state and local planning policies, guidelines and other planning scheme requirements that apply to the proposal
- if there are any referral authorities or other agencies that may have an interest in the proposal, it is important at this point to talk to them about what their requirements might be
- who may be affected by the proposal
- information required to accompany the application.

Talk to DELWP to find out if the proposal should be referred to the Minister for Planning to determine whether an assessment under the *Environment Effects Act 1978* will be required. If so, a preliminary landscape assessment must be prepared by the proponent and provided to the department.

Talk to DELWP regional biodiversity, flora/fauna officers to determine the likelihood of impact on native vegetation, threatened species, and the type/extent of surveys which may be expected.

Contact the Commonwealth Department of Environment to find out whether the proposal is an action that is likely to have a significant impact on matters of national environmental significance or on Commonwealth land, and should be referred to the Commonwealth for assessment and approval under the EPBC Act.

In addition, contact the Australian Energy Market Operator for early advice about grid connection matters.

Undertake pre-application consultation with the community and stakeholders. While not a formal requirement of the planning process, pre-consultation provides a forum for informal and open consultation to exchange information and gain feedback on the proposal and potential measures to be addressed before public notification of the development application.

4.2.2 Seek expert advice

An application should be accompanied by an assessment of the ecological, visual, noise and other environmental impacts of the proposal prepared by suitably qualified persons.

Expert advice on these matters should be sought early to inform the site selection process and the preparation of the site analysis and design response. The assessments submitted with the application should clearly state the facts, matters and all assumptions on which the assessments were based.

Refer to the draft *National Wind Farm Development Guidelines* (July 2010) and *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia* (Auswind, December 2006).

4.2.3 Prepare the site analysis

A site analysis is an audit of the subject site and its surrounds. It will comprise a plan, photographs or some other suitable information describing the land and the matters that influence the proposal.

The information requirements for a site analysis for a wind energy facility are set out in section 4.3.2 of these guidelines. If the land is also to be used for other purposes, such as agriculture, the site analysis should include information about this.

4.3 Meeting application requirements

Clause 52.32 (Wind energy facility) in all planning schemes outlines information which must accompany an application for a permit for a wind energy facility.

The following provides assistance to applicants on matters that should be addressed to meet these information requirements. The level of information required to be provided by proponents will vary depending on the size and extent of the proposal, and the requirements of the responsible authority and any referral authorities.

4.3.1 Turbines within one kilometre of a dwelling

(a) Evidence of written consent

The responsible authority is required to establish if an application for a wind energy facility is discretionary under the planning scheme. Where an application includes a turbine or turbines within one kilometre of an existing dwelling, the responsible authority must be provided evidence of written consent of the owner of that dwelling or dwellings. The application

requirements in Clause 52.32-3 require a planning permit application to include:

1. a plan showing all dwellings within one kilometre of a proposed turbine that forms part of the wind energy facility
2. evidence of the written consent of the owner of any existing dwelling located within one kilometre of a proposed turbine that forms part of the wind energy facility.

This does not apply to a wind energy facility that is located on land in a residential zone, an industrial zone, a commercial zone or a special purpose zone.

Evidence of written consent should include:

- a statement of consent that includes
  - the name and address of the owner(s) of the dwelling
  - the address of, and title particulars for, the land on which the dwelling is located
  - a statement that the owner consents to an application being made that includes a turbine(s) located as shown on the attached plan
- a plan showing:
  - the dwelling
  - the proposed location of the turbine(s) within one kilometre of the dwelling
  - the distance between the dwelling and the proposed turbine(s).

The location of the turbine(s) can be a specific site or a more general area in which the turbine(s) will be sited.

The plan should be able to be read and reconciled with the plans of the wind energy facility that form part of the application (including the plan showing all dwellings within one kilometre of a proposed turbine that forms part of the wind energy facility).

The statement of consent and the attached plan should both be signed and dated by the owner of the dwelling.

Attachment A can be used as a statement of consent.

(b) Applications to amend a planning permit

Clause 52.32-3 in all planning schemes enables amendments to a planning permit to be considered by the responsible authority without the need for a dwelling owner consent where turbines are within one kilometre of a dwelling.

To be exempt from dwelling owner consent the following requirements apply to an application to amend a planning permit:

- it does not increase the number of proposed turbines, or
- the movement of a turbine, measured from the centre of its tower at ground level, does not result in it being located closer to a dwelling (within one kilometre of a turbine) than the closest permitted turbine to that dwelling.

Proposals to amend a planning permit will be required to meet the relevant application requirements (refer to Section 4.3) and may be subject to a public notification process at the discretion of the responsible authority.

Refer to Section 6 of these guidelines to determine who is the responsible authority for an amendment to an existing permit.

4.3.2 Site and context analysis

(a) A site and context analysis

A site and context analysis is an application requirement of the planning scheme. The site analysis may include a site plan, photographs or other techniques to accurately describe:

- in relation to the site:
  - site shape, dimensions and size
  - orientation and contours
  - current land use
  - the existing use and siting of existing buildings or works on the land
  - existing vegetation types, condition and coverage
  - the landscape of the site
  - species of flora and fauna listed under the FFG Act and the EPBC Act
  - sites of cultural heritage significance
  - wind characteristics
  - any other notable features, constraints (e.g. acid sulphate soil, highly erodible soils and land instability) or other characteristics of the site
- in relation to the surrounding area:
  - existing land uses
  - above-ground utilities
  - access to infrastructure
  - direction and distances to nearby dwellings, townships, urban areas, significant conservation and recreation areas, water features, tourist routes and walking tracks, major roads, airports, aerodromes and existing and proposed wind energy facilities
  - the siting and use of buildings on adjacent properties
  - the location of all existing dwellings within one kilometre of the nearest turbine (adopting a precautionary approach, accounting for micro-siting variation in final placement of turbines). Where the proposal includes any turbines within one kilometre of an existing dwelling, the application must be accompanied by evidence of the written consent of the owner of the dwelling. The application is prohibited under the planning scheme where evidence of the written consent is not provided

- the landscape, including any significant landscape features
- views to and from the site, including views from existing dwellings and key vantage points including major roads, walking tracks, tourist routes and regional population growth corridors
- sites of flora and fauna listed under the FFG and EPBC Acts, including significant habitat corridors, and movement corridors for these fauna
- sites of cultural heritage significance
- National Parks, State Parks, Coastal Reserves and other land subject to the *National Parks Act 1975*
- land declared a Ramsar wetland as defined under section 17 of the EPBC Act
- location of any nearby land included in the schedule to Clause 52.32-2 of the planning scheme (i.e specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres) showing that the setback requirements are met
- any other notable features or characteristics of the area
- bushfire risks.

(b) A location plan

A plan showing the area around the site including:

- local electricity grid (including capacity)
- access roads to the site.

4.3.3 Design response

(a) A development plan

A development plan comprising:

- detailed plans of the proposed development showing:
  - the layout of the wind turbine generators and associated buildings and works (this can include anemometers)
  - proposed connections to the electricity grid (the on-site metered point of output from the converter station where the generated electricity units will enter the distribution system)
  - access roads on the site
- a concept plan that includes the capacity of new grid connections, network transmission infrastructure, electricity utility works and access road options
- accurate visual simulations showing the appearance of the development in the context of the surrounding area and from key public view points

- measures to manage any fire risks associated with the facility or connections to the electricity grid
- a rehabilitation plan for the site, including plans for revegetation and regeneration works.

(b) Written reports

Written reports including:

- a written response that explains how the proposed design derives from and responds to the site analysis
- a description of the proposal, including:
  - the number, location and specifications of the wind generator turbines (including the height of each turbine to the tip of the turbine blade when vertical above ground level)
  - the amount of electricity to be exported from the site
  - a summary of the contribution of the proposal to:
    - minimising greenhouse emissions
    - increasing Victoria's diversity and security of energy supply
    - economic and social outcomes of the proposal, including local and regional considerations
  - infrastructure requirements, including proposed connections to the electricity grid and vehicle access routes
- 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 landscape, including land that is described in a schedule to the *National Parks Act 1975*, Ramsar wetlands and coastal areas
- an assessment of the impact of the proposal on fauna, including any species (examining particularly birds and bats) listed under the FFG Act or EPBC Act
- an assessment of the noise impact of the proposal prepared in accordance with the New Zealand Standard NZS 6808:2010, Acoustics – Wind Farm Noise (the Standard), including an assessment of whether a high amenity noise limit is applicable, as assessed under Section 5.3 of the Standard (www.standards.co.nz).
- an assessment of the impacts upon Aboriginal and non-Aboriginal cultural heritage
- an assessment of the traffic impacts of the proposal during construction and delivery of materials and the impact on road pavements
- an explanation of why the site is suitable for a wind energy facility having regard to:
  - the SPPF and the Local Planning Policy Framework, including the Municipal Strategic Statement and any relevant local planning policy

- the suitability of the site in comparison to other potential sites in the area
- how the proposal responds to likely amenity effects on the surrounding area, existing dwellings and nearby settlements due to visual, noise and other environmental impacts, and including aviation safety lighting, blade glint, shadow flicker, overshadowing, and electromagnetic interference
- the extent to which the proposal has been designed to manage any potential adverse impacts
- how the proposal responds to any declared (or notifiable) animal or plant pests and disease, or invasive plant and animal species risks associated with construction and ongoing management of the area identified in the planning scheme (and consistent with biosecurity related provisions in the *Catchment and Land Protection Act 1994*, *Livestock Disease Control Act 1994* and *Plant Health and Plant Products Act 1995*
- the cumulative effects of the proposal having regard to other existing or proposed wind energy facilities in the area and other sources of industrial noise emissions
- the economic and social impacts of the proposal.

Written reports may include plans, drawings, photographs, computer-based simulations and other documents.

4.3.4 Flora and fauna impacts assessment

In the first instance, proponents should contact DELWP or the Commonwealth Department of Environment directly for advice regarding whether the proposed wind energy facility may impact species of flora or fauna protected under the FFG Act or the EPBC Act.

Where it is reasonably likely that species listed under the FFG Act or the EPBC Act will be present on or near the site, or using the site as a migratory corridor, applicants for a wind energy facility permit should conduct surveys at the appropriate time for at least 12 months preceding the planning permit application. DELWP or the Commonwealth Department of Environment (as appropriate) should be consulted on the timing of the surveys. Survey work should determine the species present, any adverse impacts likely to arise from the proposed wind energy facility, and any appropriate mitigation measures.

Potential biodiversity impacts

Possible impacts of a wind energy facility on biodiversity can be considered under six categories set out below. The responsible authority should consider the following matters in assessing applications and developing permit conditions:

Direct removal of native vegetation and habitat

- May arise for turbine tower footings, tracks and other infrastructure
- May be minimised by layout design and micro-siting
- Address unavoidable losses under Victoria's Native Vegetation Framework

Native fauna casualties resulting from construction activities

- Site induction to minimise risks to wildlife on-site
- Minimise risks to wildlife arising from excavation works

Bird and bat casualties resulting from collisions with moving turbine blades

- Site selection and to an extent layout and micro-siting will impact on risk level, especially for large, slow-flying birds (e.g. waterbirds, raptors)
- As well as direct collision, bats can be killed by barotraumas (lung injury)
- Some bird and bat species may require special consideration due to significance, behaviour or movement patterns

Bird and bat casualties resulting from collisions with stationary infrastructure (for example towers, anemometers, fences, powerlines)

- Lighting may disorient birds at night, increasing collision risk
- Fences, wires and transmission lines can be difficult for many species to avoid
- Transmission lines pose a well-documented hazard for many species of large birds

Indirect habitat loss resulting from avoidance

- Some species may avoid turbines by large margins, leading to loss of access to adjacent habitat
- Different avoidance distances may apply to different species or to particular species at different seasons

Cumulative barrier effects

- Migratory or otherwise mobile species may require turbine-free corridors through which to travel between critical sites (e.g. breeding and non-breeding habitats).
- Corridor needs may vary according to relevant species.

In evaluating wind energy facility impacts on birds and bats include cumulative impacts of a number of discrete wind energy developments within a broad area. It is important to place the collision risks inherent in wind farms in context with other anthropogenic collision risks such as fences, windows and motor vehicles. However, potential impacts of specific developments should still be identified, quantified, minimised and where necessary offset to ensure that the net impact of wind farm developments on biodiversity values, especially with regard to threatened species, is at worst neutral.

Further advice is provided in the draft *National Wind Farm Development Guidelines* (July 2010) and species guidelines produced by DELWP.

4.3.5 Environmental Management Plan

The preparation of an environmental management plan (EMP) will be required. An environmental management plan details how the site will be managed through construction, and sets out future operational and maintenance requirements. It should include:

- principles of environmental management relevant to the site and nature and scale of the facility

- standards to be met
- environmental mitigation measures
- monitoring requirements
- post-construction adaptive management measures where monitoring shows the proposal may have significant impacts on EPBC Act and FFG Act listed species
- noise complaints registration and response processes
- emergency management and response plan
- decommissioning and rehabilitation requirements.

Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

4.3.6 Aircraft safety issues

The height of wind energy turbines can be substantial, resulting in potential impacts upon nearby airfields and air safety navigation. Applicants for a wind energy facility permit should address aircraft safety issues by considering the proximity of the site to airports, aerodromes, or landing strips.

Applicants should consult with the Civil Aviation Safety Authority (CASA) for wind energy facility proposals that:

- are within 30 kilometres of a declared aerodrome or airfield
- infringe the Obstacle Limitation Surface around a declared aerodrome
- include a building or structure the top of which will be 110 metres or more above natural ground level (height of a wind turbine is that reached by the tip of the turbine blade when vertical above ground level).

Section 5

Information for a responsible authority assessing a wind energy facility

This section outlines the key criteria for evaluation of the planning merits of a wind energy facility.

5.1 Assessing wind energy facility proposals – matters for consideration

Proposals for wind energy facilities must be assessed against state planning policy, local planning policy and other matters specified in section 60 of the *Planning and Environment Act 1987*.

These guidelines provide a responsible authority with assistance for the assessment of a wind energy facility. The extent and breadth of issues that arise and require assessment will differ between proposals and will need to be determined on a case-by-case basis. A responsible authority should endeavour to balance environmental, social and economic matters in favour of net community benefit and sustainable development.

An explanation of matters to be considered by a responsible authority in assessing permit applications for wind energy facilities follows. Some suggested impact reduction measures specific to wind energy facilities are outlined below.

5.1.1 Contribution to government policy objectives

The State Planning Policy Framework (SPPF) in all planning schemes requires that a planning authority make decisions on the basis of fair, orderly, economic and sustainable use and development of land. In this context the SPPF contains a specific policy position regarding renewable energy – refer to Clause 19.01 (Renewable energy). This is the overarching policy statement regarding wind energy development which states:

> **Objective**
>
> To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.
>
> **Strategies**
>
> In considering proposals for renewable energy, consideration should be given to 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. (Paragraph 4 of 5)

More specific provisions relating to assessing wind energy developments are set out in Clause 52.32 (Wind Energy Facility) of the VPP.

A responsible authority must assess the impact of a wind energy facility on landscape values, flora and fauna, human wellbeing and amenity in a systematic manner. In assessing impacts and appropriate mitigation responses, a responsible authority should reference best practice standards including the draft *National Wind Farm Development Guidelines* (July 2010) and *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia* (Auswind, December 2006).

5.1.2 Amenity of the surrounding area

A wind energy facility can affect the amenity of the surrounding area due to noise, blade glint, shadow flicker, overshadowing and electromagnetic interference.

(a) Noise

A wind energy facility can create noise due to the:

- mechanical noise produced by the wind turbine generators
- movement of the rotor blades through the air
- construction noise.

The impact of the noise depends on the sensitivity of the surrounding land uses, existing background noise levels, topography and wind speed and direction.

A wind energy facility should comply with the noise limits recommended for dwellings and other noise sensitive locations in the New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise (the Standard).

The Standard specifies a general 40 decibel limit for wind farm sound levels, or the sound should not exceed the background sound level by more than five decibels, whichever is the greater.

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

Compliance with the higher standard can typically be achieved by a change in the location, number of operating mode of the turbines.

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

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

Measurement and compliance assessment methods are set out in the Standard.

Wind farm noise compliance

Wind farm noise compliance must be established by testing and reporting by specialist noise and acoustic consultants familiar with the application of the applicable standards and requirements. In seeking to achieve compliance, parties may seek to engage an environmental auditor, appointed under the *Environment Protection Act 1970*, to conduct an assessment and verification of wind farm noise compliance. This assessment would verify noise compliance, with regard to the relevant standards and planning permit conditions, and this guideline.

Proposed or existing wind farm operators should consider obtaining an assessment of compliance, as part of any submission, to demonstrate ongoing compliance to satisfy permit requirements. This arrangement may also be accessed by a responsible authority for the purposes of undertaking a peer review on noise compliance assessments. A full list of Environment Protection Authority (EPA) appointed auditors is available on the EPA website.

What is an assessment of compliance issued by an EPA appointed auditor?

An assessment of compliance consists of two documents, being a declaration and a report supporting the declaration (an example of a similar declaration can be found in the EPA publication *Landfill Licensing Guidelines,* Publication 1323.2).

The declaration referred to above, issued by an EPA appointed auditor is a declaration that the noise assessment meets the requirements of:

1. the appropriate standards
2. this guideline (as it relates to noise) and
3. the permit or other regulatory instrument.

The declaration must be accompanied by a report, signed by the auditor, addressing the matters 1. to 3. above and detailing the considerations they have relied upon in forming their view. This report should be thorough but concise. The report must have adequate detail including an annexure listing all documents examined or relied up on to permit any reader to follow the deliberations that the auditor undertook in forming their view.

Auditor duties

An EPA appointed auditor is expected in undertaking any function to apply sound engineering and audit practices, behaving in an ethical manner upholding the reputation of the “audit system” and adhere to the wording and intent of relevant guidelines. EPA has guidelines detailing the duties and responsibilities of an EPA appointed auditor. To find out more about the roles and responsibilities of an EPA appointed auditor please visit the EPA website. A good starting point is EPA publication 865 *Environmental Auditor Guidelines for Appointment and Conduct*.

(b) Blade glint

Blade glint can result from the sun reflecting from turbine blades.

Blades should be finished with a surface treatment of low reflectivity to ensure that glint is minimised. Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

(c) Shadow flicker

Shadow flicker results from the position of the sun in relation to the blades of the wind turbine as they rotate. This occurs under certain combinations of geographical position and time of day. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the site.

Shadow flicker can be modelled in advance and siting and design can mitigate the problem. This is more likely to be an issue for turbines located to the east or west of a dwelling.

The shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year as a result of the operation of the wind energy facility. Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

(d) Electromagnetic interference

The effect of wind turbines on electromagnetic waves will usually be relatively limited. Potential electromagnetic interference effects can be calculated from information about affected telecommunications transmitting or receiving stations, local conditions, turbine design and location.

The potential for electromagnetic interference from the generation of electricity from a wind energy facility should be minimised, if not eliminated, through appropriate turbine design and siting.

The siting of wind turbines in the 'line of sight' between transmitters and receivers should be avoided. Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

5.1.3 Landscape and visual amenity

The degree of visual impact of a wind energy facility depends on the extent of the change to the landscape caused by the development, taking into account:

- the visibility of the development
- the locations and distances from which the development can be viewed
- the significance of the landscape as described in the planning scheme (including in an overlay, a relevant strategic study or landscape features referenced in the planning scheme)
- landscape values associated with nearby parks described in a schedule to the *National Parks Act 1975* or Ramsar wetlands

- landscape values associated with nearby land included in the schedule to Clause 52.32-2 of the planning scheme, such as specified areas of landscape and environmental significance, specified coastal locations and areas identified to accommodate future population growth of regional cities and centres
- the sensitivity of the landscape features to change.

The visual impact of the development relates to:

- the number, height, scale, spacing, colour and surface reflectivity of the wind turbines
- the quantity and characteristics of lighting, including aviation obstacle lighting (subject to CASA requirements and advice)
- avoidance of visual clutter caused by turbine layout and ability to view through a cluster or array (visually well ordered series) of turbines in an orderly manner
- the removal or planting of vegetation
- the location and scale of other buildings and works including transmission lines and associated access roads
- proximity to sensitive areas
- proximity to an existing or proposed wind energy facility, having regard to cumulative visual effects.

The features of the landscape include:

- the topography of the land
- the amount and type of vegetation
- natural features such as waterways, cliffs, escarpments, hills, gullies and valleys
- visual boundaries between major landscape types
- the type, pattern, built form, scale and character of development, including roads and walking tracks
- flora and fauna habitat
- cultural heritage sites
- the skyline.

Wind energy facilities will have a degree of impact on the landscape.

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.

The visual impact of a proposal should have regard to relevant state and local government planning policy.

The following measures are suggested to reduce the visual impacts of wind energy facilities:

- siting and design to minimise impacts on views from areas used for recreation and from dwellings

- locating arrays of turbines to reflect dominant topographical and/or cultural features, such as ridgelines, the coastline, watercourses, windbreaks or transmission lines
- using turbine colour to reduce visual impacts from key public view points
- limiting night lighting to that required for safe operation of a wind energy facility and for aviation safety
- reducing the number of wind turbines with obstacle lights while not compromising aviation safety
- mitigating light glare from obstacle lighting through measures such as baffling
- selecting turbines that are consistent in height, appearance and rotate the same way
- spacing turbines to respond to landscape characteristics
- undergrounding electricity lines wherever practicable
- minimising earthworks and providing measures to protect drainage lines and waterways
- minimising removal of vegetation
- avoiding additional clutter on turbines, such as unrelated advertising and telecommunications apparatus.

Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

5.1.4 Flora and fauna

A responsible authority should consider the effects of the proposed wind energy facility on flora and fauna at the site and in the surrounding area. Consideration should be given to:

- whether the species and communities are protected under the EPBC Act or the FFG Act
- the sensitivity of any protected species to disturbance
- the potential loss of habitat of species protected under the EPBC Act or the FFG Act
- measures to minimise the impacts on any native species.

If the proposal is likely to have significant impacts on listed species, the responsible authority should consider whether the applicant has provided appropriate survey work (refer to section 4.3.4 of these guidelines for more detail). A responsible authority should consider whether to impose planning permit conditions requiring monitoring of flora and fauna, including further survey work, after construction of the wind energy facility. An environmental management plan may provide for the development of reasonable and cost effective steps to minimise any ongoing risks.

If native vegetation is proposed to be removed, a responsible authority must have regard to *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industry 2013). In applying the policy, there are three key steps for land managers and owners to address when considering vegetation clearing (as addressed in Clause 12.01-2 of the SPPF of all planning schemes):

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

Details regarding removing native vegetation can be found on the Department of Environment, Land, Water and Planning website at www.delwp.vic.gov.au or contact the relevant regional office.

5.1.5 Aircraft safety

The height of wind energy turbines can be substantial, resulting in potential impacts upon nearby airfields and air safety navigation. A responsible authority should consider the proximity of the site to airports, aerodromes or landing strips, and ensure that any aircraft safety issues are identified and addressed appropriately.

Although the Civil Aviation Safety Authority (CASA) is not a formal referral authority for wind energy facility permit applications, a responsible authority should nevertheless consult with CASA in relation to aircraft safety impacts of a wind energy facility proposal, particularly proposals that:

- are within 30 kilometres of a declared aerodrome or airfield
- infringe the obstacle limitation surface around a declared aerodrome
- include a building or structure the top of which will be 110 metres or more above natural ground level (height of a wind turbine is that reached by the tip of the turbine blade when vertical above ground level)

Other private airstrips may not be identified by consultation with CASA. These may be identified using aerial photographs, discussions with the relevant council, or consultation with local communities.

A responsible authority should ensure that the proponent has consulted appropriately with CASA in relation to aircraft safety and navigation issues. Refer to section 4.3.6 of these guidelines for more detail.

CASA may recommend appropriate safeguards to ensure aviation safety. These may include changes to turbine locations, turbine heights and/or the provision of aviation safety lighting. A responsible authority should ensure that any concerns raised by CASA are appropriately reflected in permit conditions.

Aviation safety lighting can have an impact on the amenity of the surrounding area. A responsible authority may consider the following impact reduction measures (subject to CASA requirements and advice):

- reducing the number of wind turbines with obstacle lights
- specifying an obstacle light that minimises light intensity at ground level
- specifying an obstacle light that matches light intensity to meteorological visibility
- mitigating light glare from obstacle lighting through measures such as baffling.

Further considerations are provided in the draft *National Wind Farm Development Guidelines* (July 2010).

5.1.6 Construction impacts and decommissioning

As outlined above, construction of a wind energy facility and associated infrastructure (access roads and transmission lines) must be managed to minimise on- and off-site adverse impacts on nearby residents and the environment. An environmental management plan (EMP) must be provided as part of every planning application, setting out how environmental impacts will be managed through construction and providing future operational and maintenance specifications. Refer to section 4.3.5 of these guidelines for more detail.

The approved EMP should be endorsed by the responsible authority and form part of the planning permit. A responsible authority should consider imposing a permit condition requiring that the use and development be conducted in accordance with the endorsed EMP.

The draft *National Wind Farm Development Guidelines* (July 2010) provide a standard expected framework for an EMP covering construction, operation and decommissioning phases of a wind energy facility.

Section 6

Planning permit administration and enforcement

This section describes the role of the responsible authority in administering and enforcing wind energy facility permit conditions.

6.1 Administration of planning permits

Section 13(a) of the *Planning and Environment Act 1987* (the Act) has the effect that the responsible authority for administration purposes is the local council unless the planning scheme specifies another person as the responsible authority for those purposes.

Clause 61.01-1 of all planning schemes specifies that the Minister for Planning is the responsible authority for considering and determining planning permit applications; and for matters required by a permit or the scheme to be done to the satisfaction of the responsible authority for the use and development of land for a wind energy facility.

In relation to permits issued prior to 2 April 2015 under Division 1 of Part 4 of the Act the Council is the responsible authority for extensions of time, corrections and amendment applications; and for matters required by the permit or the scheme to be done to the satisfaction of the responsible authority.

In relation to permits issued prior to 2 April 2015 under Division 6 of Part 4 of the Act, the Council is the responsible authority for matters required by the permit or the scheme to be done to the satisfaction of the responsible authority. Section 97H of the Act (together with Clause 61.01-1 of the scheme) specifies responsible authority status for other matters in relation to permits issued under Division 6 of Part 4.

6.2 Planning permit conditions

Planning permit conditions must be consistent with provisions set out in Clause 52.32 of the VPP, and should be generally consistent with these guidelines. Model planning permit conditions for wind energy facilities are attached to these guidelines (see Attachment B). These conditions can be customised by the responsible authority to reflect local planning policy and specific project circumstances.

6.3 Enforcement of planning scheme and planning permits

Section 13(a) of the Act has the effect that the responsible authority for enforcement purposes is the local council, unless the planning scheme specifies another person as the responsibility authority for those purposes.

The local council is the responsible authority for enforcement purposes.

Where a permit has been issued by the Minister under Division 6 of Part 4 of the Act section 97H of the Act, together with the planning scheme, specifies who is the responsible authority for administration and enforcement purposes.

GLOSSARY

TERMS

CASA	The Civil Aviation Safety Authority	
DELWP	Department of Environment, Land, Water and Planning	Victorian Department administering the FFG Act
DEDJTR	Department of Economic Development, Jobs, Transport and Resources	
DE	Department of Environment	Federal Department administering the EPBC Act
EES	Environment Effects Statement	A statement prepared under the **Environment Effects Act 1978** (Vic) assessing the significant environmental effects of proposed works
EMP	Environmental management plan	
EPA	Environment Protection Authority	
EPBC Act	**Environment Protection and Biodiversity Conservation Act 1999** (Cth)	Federal legislation dealing with the protection of, and assessment of impacts of activities on, matters of national environmental significance
FFG Act	**Flora and Fauna Guarantee Act 1988**	Victorian legislation dealing with the protection of listed species of flora and fauna
SPPF	State Planning Policy Framework	Contained in the VPP and all planning schemes
the Standard	New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise	The noise standard wind energy facilities applicable under Clause 52.32 of the VPP
VPP	Victoria Planning Provisions	A set of standard provisions on which all Victorian planning schemes are based
Wind energy facility	Land used to generate electricity by wind force. It includes land use for: a) any turbine, building, or other structure or thing used in or in connection with the generation of electricity by wind force b) an anemometer. It does not include turbines principally used to supply electricity for domestic or rural use of the land.	This is the definition of a wind energy facility in the VPP

UNITS

W: watt	A unit of power	The power generation capacity of a wind generator is measured in watts
MW: megawatt	A unit of energy	1 megawatt = 1000 watts
Wh: watt hour	A unit of energy	The amount of electricity a wind energy facility generates is measured in watt hours

Attachment A:
Statement of consent

APPLICATION FOR [A PLANNING PERMIT/AN AMENDMENT TO A PLANNING PERMIT] FOR A WIND ENERGY FACILITY

DWELLING LOCATED WITHIN ONE KILOMETRE OF A TURBINE

STATEMENT OF CONSENT

Full details of the property on which the dwelling is located:

Address: .....

Title Particulars: Volume ..... Folio .....

Name(s) and address(es) of the owner(s) of the dwelling

I/we as the owner/s of the existing dwelling on the above property:

- declare that I/we consent to an application for [a planning permit/an amendment to Planning Permit number [insert] for a wind energy facility to be made that includes a turbine or turbines in the location(s) shown on the attached plan
- acknowledge that the proposed turbine(s) will be located within one kilometre of the dwelling.

Signed: .....

Dated:.....

Attached: A plan showing the dwelling and the proposed location of the turbine(s) within one kilometre of the dwelling and the distance between the dwelling and the proposed turbine(s).

This plan should be able to be read and reconciled with the plans of the wind energy facility that form part of the planning permit application. The location of the turbine(s) can be a specific site or a more general area in which the turbine(s) will be sited.

Owner(s) must also sign and date the attached plan.

Attachment B: Example permit conditions to be applied as appropriate

EXAMPLE PREAMBLE

ADDRESS OF THE LAND	Land generally described as: [insert a general description of the land, for example, street address, bounded by …] [insert title details of land] [attach plan of all wind farm land]
WHAT WILL THE PERMIT ALLOW?	Use [and development] of the land for a Wind Energy Facility and [specify related on-site works – this should not include off-site transmission infrastructure, which is likely to require separate planning permission]

EXAMPLE CONDITIONS

DEVELOPMENT PLANS

1. Before the development starts, development plans must be prepared to the satisfaction of the responsible authority. When approved, the plans will be endorsed by the responsible authority and will then form part of this permit. The plans must be fully dimensioned, drawn to a scale of [specify scale if possible] and three copies must be provided.

   The plans must be generally in accordance with the application plans numbered [insert number], dated [insert date], prepared by [insert name], but modified to show [insert whichever of the following paragraphs are required]:

   a. the location, setbacks to property boundaries, layout and dimensions of all on-site buildings and works including [select as appropriate from the following list, and include any additional features not in the list if necessary – all turbines, access tracks, underground cables, any temporary concrete batching plant, the transmission line, the substation, the switchyard, any designated car parking areas, and ancillary works such as construction compounds, fire fighting infrastructure and water tanks, as well as off-site road works]

b. the following adjustment to the layout:

   i [specify details of adjustments to siting required to minimise on-site physical impacts, for example disturbance, to native vegetation and fauna habitat. Include as appropriate any siting adjustments arising from findings or recommendations in any surveys undertaken in connection with the application (e.g. flora and fauna surveys)]

   ii [specify details of adjustments to siting required to minimise off-site physical impacts. Include as appropriate any siting adjustments arising from findings or recommendations in any surveys]

   iii [specify any adjustment required in response to an approved cultural heritage management plan]

   iv [specify any other required adjustments e.g. landscaping]

   v no turbines are located closer than [insert] metres from [specify location, e.g. nearby remnant woodland]

c. in relation to the turbines:

   i details of the model and capacity of the turbines to be installed

   ii elevations and dimensions of the turbines, including overall maximum height of turbines to the tip of the rotor blade when vertical, and base diameter at ground level, including tower and concrete base

   iii materials and finishes of the turbines

   iv global positioning system coordinates using WGS84 datum for each turbine

   v distance of each turbine from:

      – each dwelling (if any) within 1 km of the turbine

      – each adjoining property boundary

      – [insert other locations as appropriate, e.g. nearby remnant woodland]

d. in relation to other buildings and works:

   i. locations, elevations and dimensions of the buildings and works

   ii. materials and finishes of the buildings and works

e. the location, size, type and intensity of any lighting (including aviation safety lighting), including any directional screening or baffling of lighting

f. any directional or business identification signage and any required safety signage

g. engineering plans showing all works required by this permit in [specify road names]. These plans must include cross sections, showing their formation, depth, and surface levels. The plans must be to the satisfaction of the responsible authority and prepared in consultation with VicRoads, council and the responsible authority. The works shown on the plan(s) must be undertaken and completed prior to the commencement of use.

h. [specify any other modifications required to the application plans arising from consideration of the application]

i. any staging of the permitted development, including the identification and timetabling of any required pre-construction works.

2. Despite any other condition of this permit, no plans will be endorsed by the responsible authority, and no variation to the endorsed plans will be approved by the responsible authority, which allow a turbine to be located within 1 kilometre of an existing dwelling (measured from closest point of the turbine to closest point of the dwelling) unless evidence has been provided to the satisfaction of the responsible authority that the owner of the dwelling has consented in writing to the location of the turbine.
3. Except as permitted under condition 5, and subject to condition 4, the use and development as shown on the endorsed plans must not be altered or modified without the written consent of the responsible authority.
4. The responsible authority will not consent to an alteration or modification of the use and development as shown on the endorsed plans under condition 3 unless the responsible authority is satisfied that the alteration or modification will not give rise to an adverse change to assessed landscape, vegetation, cultural heritage, visual amenity, shadow flicker, noise, fire risk or aviation impacts.

   Any application for the consent of the responsible authority for an alteration or modification to the endorsed plans under condition 3 must be accompanied by supporting material addressing the matters referred to in this condition, to the satisfaction of the responsible authority.

MICRO-SITING OF TURBINES

5. Subject to condition 6, micro-siting of turbines (as defined in this condition) is permitted with the consent of the responsible authority. Any micro-siting of turbines in accordance with conditions 5 and 6 will be regarded as being in accordance with the endorsed plans, and no amendment to the endorsed plans will be required to reflect the micro-siting of turbines.

   For the purpose of this permit, micro-siting of turbines means an alteration to the siting of a turbine by not more than 100 metres, provided that the turbine is not relocated any closer to:

   a. a dwelling within 1 kilometre of the turbine (measured from closest point of the turbine to closest point of the dwelling), unless evidence has been provided to the satisfaction of the responsible authority that the owner of the dwelling has consented in writing to the location of the turbine; or

   b. [specify any other locations that turbines cannot be closer to, e.g.].

   Micro-siting of turbines includes any consequential changes to access tracks and electricity reticulation lines.
6. The responsible authority will not consent to micro-siting of turbines unless the responsible authority is satisfied that it will not give rise to an adverse change to assessed landscape, vegetation, cultural heritage, visual amenity, shadow flicker, noise, fire risk or aviation impacts when compared to the site shown on the endorsed plans.

   Any application for the consent of the responsible authority to micro-siting a turbine under condition 5 must be accompanied by supporting material addressing the matters referred to in this condition, to the satisfaction of the responsible authority.

SPECIFICATIONS

7. The wind energy facility must meet the following requirements:
    a. the wind energy facility must comprise no more than [specify number] turbines
    b. hub height must not exceed [specify number] metres in height
    c. the overall maximum height of the turbines (to the tip of the rotor blade when vertical) must not exceed [specify] metres above natural ground level
    d. turbines must be mounted on a tubular tower with a height of no greater than [specify] metres
    e. each turbine is to have not more than three rotor blades, with each blade having a length of no greater than [specify] metres
    f. the transformer associated with each wind generator must be located beside each tower and pad mounted, or enclosed within the tower structure
    g. the colours and finishes of all buildings and works (including turbines) must minimise the visual impact of the development on the surrounding area, to the satisfaction of the responsible authority
    h. electricity reticulation lines associated with the wind energy facility must be placed underground, provided that clusters of up to [specify number] turbines may be connected together or to the wind farm substation by means of above-ground cabling, with the written consent of the responsible authority.

LANDSCAPING

On-site landscaping plan

8. Before the development starts, an on-site landscaping plan must be prepared to the satisfaction of the responsible authority. The plans must be fully dimensioned, drawn to a scale of [specify scale if possible] and three copies must be provided. When approved, the plan will be endorsed by the responsible authority and will then form part of this permit.

    The on-site landscaping plan must include:

    a. landscaping to screen the substation, switchyard and associated buildings (other than the turbines)
    b. details of plant species proposed to be used in the landscaping, including height and spread at maturity
    c. a timetable for implementation of all on-site landscaping works
    d. a maintenance and monitoring program to ensure the ongoing health of the landscaping.

9. The landscaping as shown on the endorsed on-site landscaping plan must be completed in accordance with the implementation timetable, and monitored and maintained, all to the satisfaction of the responsible authority.

Off-site landscaping program and plan

10. Within six months after the date of endorsement of the development plans under condition 1, a program of voluntary off-site landscape mitigation works must be prepared, to the satisfaction of the responsible authority.

The off-site landscaping mitigation works program must provide details of planting or other treatments that will be used to reduce the visual impact of the turbines at:

a. all dwellings within [specify] kilometres of the nearest turbine

b. dwellings at [clearly identify any additional specific dwellings to be included in the program].

11. The operator of the wind energy facility must make offers to undertake the off-site landscape mitigation works specified in the program to the relevant landowners within two weeks after the responsible authority confirms that it is satisfied with the program under condition 10.

12. If one or more of the offers to landowners referred to in condition 11 is accepted, an off-site landscaping plan must be prepared, in consultation with the relevant landowners and to the satisfaction of the responsible authority. The plans must be fully dimensioned, drawn to a scale of [specify scale if possible] and three copies must be provided. When approved, the off-site landscaping plan will be endorsed by the responsible authority.

    The off-site landscape plan must include:

    a. details of the properties on which off-site landscaping mitigation works will be undertaken, and the specific locations of the landscaping works on those properties

    b. details of plant species proposed to be used in the landscaping, including height and spread at maturity

    c. a timetable for implementation of the landscaping works (with each stage of the landscaping works to be completed not more than 12 months after the completion of the relevant stage of the wind energy facility to which the landscaping works relate)

    d. a maintenance and monitoring program to ensure the ongoing health of the landscaping.

13. The landscaping as shown on the endorsed off-site landscape plan must be completed in accordance with the implementation timetable, and monitored and maintained, all to the satisfaction of the responsible authority.

NOISE

Performance requirement

14. The operation of the wind energy facility must comply with New Zealand Standard 6808:2010, Acoustics – Wind Farm Noise (the Standard) as modified by this condition to the satisfaction of the responsible authority. The following requirements apply:

    a. The operator must ensure that at any wind speed, wind farm sound levels at noise sensitive locations (as defined in the Standard) do not exceed a noise limit of 40dB L A90 (10 min), provided that where the circumstances specified in condition 14(b) apply, the noise limit of 40dB L A90 (10 min) will be modified as specified in condition 14(b).

    b. At the specified assessment positions referred to in condition 15(b), the noise limit of 40dB L A90 (10 min) referred to in condition 14(a) will be modified in the following way when the following circumstances exist:

        i. where the background sound level is greater than 35 dB L A90 (10 min), the noise limit will be the background sound level L A90 (10 min) plus 5 dB;

ii. where special audible characteristics, including tonality, impulsive sound or amplitude modulation occur, the noise limit will be modified by applying a penalty of up to + 6 dB L90 in accordance with section 5.4 of the Standard;

iii. where a high amenity noise limit has been found to be justified, as defined by section 5.3 of the Standard, for specific locations determined to be high amenity areas following procedures outlined in clause C5.3.1 of the Standard.

Noise compliance assessment

15. For the purposes of determining compliance, the following requirements apply:

    a. Acoustic compliance reports shall be prepared by a suitably qualified and experienced independent acoustic engineer to demonstrate compliance with the noise limits specified in the Standard.

    b. Noise assessment positions must be located according to the Standard, and shown on a map.

    c. An initial acoustic compliance report must be submitted within six months of the commissioning of the first turbine, and at six monthly intervals thereafter until full operation (following completion of construction and commissioning).

    d. A final compliance report must be submitted to the responsible authority after a 12 month period following full operation of the facility.

    e. Compliance reports should be publically available.

    f. Following facility commissioning, all complaints shall be managed following procedures set out in the noise complaints management plan.

Noise complaints evaluation

16. For the purposes of complaints evaluation, the following requirements apply:

    a. Post installation sound levels shall, where practical, be measured at the same locations where the background sound levels were determined (GPS coordinates and a map showing these locations is to be provided).

    b. If a non-compliance with condition 14 is detected, or an acoustic investigation is required under the noise complaints plan endorsed under condition 17, an independent assessment report must be prepared by a suitably qualified and experienced independent acoustic engineer to:

        - identify the weather or operational conditions associated with the complaint / breach
        - analyse the uncertainty and confidence levels in the monitoring, and the steps taken to reduce uncertainty
        - target assessment to identify the cause and remediation actions
        - submit a remediation plan to the satisfaction of the responsible authority outlining, the investigation process, complainant communications, actions and timelines to resolve the complaint/breach

        If the complaint is not resolved through the processes outlined above, the responsible authority may request an independent peer review at the cost of the permit holder and on/off shut down testing to resolve uncertainty.

c. Following the initial post-construction reporting process, additional independent assessment may be requested by the responsible authority at any time, where complaints are received and are considered to reasonably warrant investigation.

d. If investigations indicate special audible characteristics are potentially occurring, procedures outlined in Appendix B of the Standard should be applied.

Noise complaint response plan

17. Before the first turbine is commissioned, the permit holder must prepare a noise complaint investigation and response plan to the satisfaction of the responsible authority.

    The plan shall include:

    - a process of investigation to resolve a complaint
    - a requirement that all complaints will be recorded in an incidents register
    - how contact details will be communicated to the public
    - a toll free telephone number and email contact for complaints and queries
    - details of the appropriate council contact telephone number and email address (where available)
    - a table outlining complaint information for each complaint received, including:
        - the complainant's name
        - any applicable property reference number if connected to a background testing location
        - the complainant's address
        - a receipt number for each complaint which is to be communicated to the complainant
        - the time, prevailing conditions and description of the complainant's concerns including the potential incidence of special audible characteristics
        - the processes of investigation to resolve the complaint.

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

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

    The owner of the wind energy facility must implement and comply with the Approved Noise Complaint, Investigation and Response Plan for the duration of the operation of the wind energy facility.

BLADE SHADOW FLICKER

Performance requirement

18. Shadow flicker from the wind energy facility must not exceed 30 hours per annum at any dwelling existing at [insert date of application].

    Note: Condition 18 does not apply if the operator of the wind energy facility has entered into an agreement with a landowner under which the landowner acknowledges and accepts that shadow flicker may exceed 30 hours per annum at the landowner's dwelling. Evidence of the agreement must be provided to the satisfaction of the responsible authority.

Blade shadow flicker complaint evaluation and response plan

19. Before the first turbine is commissioned, the operator of the wind energy facility must prepare a detailed shadow flicker complaint evaluation and response plan, to the satisfaction of the responsible authority.

    The plan must include the following elements:

    a. a toll free complaint telephone service

    b. a sign on site advising of the complaints telephone number

    c. procedures for assessing any alleged breach of condition 18.

20. The operator of the wind energy facility must implement and comply with the approved shadow flicker complaint evaluation and response plan.

BLADE GLINT

ELECTROMAGNETIC RADIATION

TELEVISION AND RADIO RECEPTION AND INTERFERENCE

21. Before the commencement of construction of the wind energy facility, a pre-construction survey must be carried out to determine television and radio reception strength in the area within 5 km of the site and in which dwellings are located as at [insert date of application], to the satisfaction of the responsible authority.

    The pre-construction survey must include testing at selected locations to enable the average television and radio reception strength in the area within 5 kms of the site to be determined. The specific locations of testing will be determined by an independent television and radio monitoring specialist, to the satisfaction of the responsible authority.

22. If, following commencement of the operation of the wind energy facility, a complaint is received regarding the wind energy facility having an adverse effect on television or radio reception at any dwelling within 5 km of the site which existed at [insert date of application], a post-construction survey must be carried out at the dwelling.

23. If the post-construction survey establishes any increase in interference to reception as a result of the wind energy facility, the operator of the wind energy facility must undertake measures to mitigate the interference and return the affected reception to pre-construction quality to the satisfaction of the responsible authority.

ACCESS TRACKS

24. Access tracks within the site must be sited and designed to minimise impacts on overland flows, soil erosion, the landscape value of the site, environmentally sensitive areas and, where appropriate, the farming activities on the site to the satisfaction of the responsible authority.

25. Access tracks must be surfaced in a manner which does not unduly contrast with the surrounding landscape.

LIGHTING INCLUDING AVIATION OBSTACLE LIGHTING

26. External lighting of infrastructure associated with the wind energy facility is not permitted other than:

    a. low-level, low-intensity security lighting

    b. aviation obstacle lighting in accordance with condition 24

    c. lighting necessary in the case of an emergency or for operational call-outs at reasonable times

    each of which must be to the satisfaction of the responsible authority.

27. Where required, aviation obstacle lighting must meet the following requirements:

    a. for each lit turbine, the lighting must consist of a pair of lights mounted above the nacelle so that at least one light is visible from an aircraft approaching from any direction

    b. each light must be a red, medium intensity, flashing light as required by CASA

    c. each light must be shielded so as to restrict the vertical spread of light to not more than 3.0 degrees and light spread below the horizontal to not more than 1.0 degree

    d. all lights must flash in unison

    e. the duration of the light flash must be the minimum period recommended by CASA and the duration of the period between the flashes must be the maximum period recommended by CASA

    f. the lights are to switch on and off during ambient lighting conditions as recommended by CASA.

28. Before the wind energy facility is commissioned, a lighting maintenance plan must be prepared to the satisfaction of the responsible authority. When approved, the lighting maintenance plan will be endorsed by the responsible authority and will then form part of this permit. The operator of the wind energy facility must implement and comply with the endorsed lighting maintenance plan.

AVIATION SAFETY CLEARANCES

29. Within 30 days of the endorsement of plans under condition 1, copies of the development plans endorsed under condition 1 must be provided to the following entities, to enable details of the wind energy facility to be shown on aeronautical charts of the area:

    a. CASA

    b. the Department of Defence (RAAF Aeronautical Information Service)

c. Airservices Australia

d. any aerodrome operator within 15 km of the outside property boundaries of the site

e. the Aerial Agriculture Association of Australia

f. any organisation responsible for providing air ambulance services in the area.

TRAFFIC MANAGEMENT

Traffic management plan

30. At least six weeks before the development starts, a traffic management plan must be endorsed by the responsible authority. The traffic management plan is to be prepared in consultation with VicRoads and [specify] Council in its capacity as road authority under the *Road Management Act 2004* for local public roads in the vicinity of the wind energy facility. The traffic management plan must be to the satisfaction of the responsible authority. When approved, the traffic management plan will be endorsed by the responsible authority. The traffic management plan must be complied with, unless varied by the written consent of the responsible authority.

    The traffic management plan must include:

    a. the nominated route for traffic accessing and departing the site

    b. an existing conditions survey of public roads that may be used in connection with the wind energy facility (for access, pre-construction or construction purposes), including details of the suitability, design, condition and construction standard of the relevant public roads

    c. the designation of all vehicle access points to the site from surrounding roads. Vehicle access points must be designed and located to ensure safe sight distances, turning movements, and avoid potential through traffic conflicts

    d. the designation of appropriate pre-construction, construction and transport vehicle routes to and from the site

    e. engineering plans demonstrating whether, and if so how, truck movements to and from the site can be accommodated on sealed roadways and turned without encroaching onto the incorrect side of the road

    f. recommendations regarding the need for road and intersection upgrades to accommodate any additional traffic or site access requirements (whether temporary or ongoing). Where upgrades are required, the traffic management plan must include:

        i. detailed engineering plans showing the required works

        ii. the timing of when the works are to be undertaken

    g. [insert any specific requirements regarding road upgrade works that are identified during the application process]

    h. a program of regular inspections to be carried out during the construction of the wind energy facility to identify maintenance works necessary as a result of construction traffic

i. the designation of operating hours and speed limits for trucks on routes accessing the site which:

   i. avoid school bus routes and school bus times where relevant

   ii. provide for resident safety

j. measures to be taken to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads

k. the number of anticipated vehicle movements and hours of travel

l. [insert any specific requirements regarding traffic management measures that are identified during the application process]

m. a program to rehabilitate existing public roads to the condition identified by the surveys required under condition 30b above:

   i. at the conclusion of the construction of the wind energy facility

   ii. every [five] years during the operation of the wind energy facility (if required).

Traffic management and road upgrade and maintenance works

31. The traffic management and road upgrade and maintenance works identified in the endorsed traffic management plan must be carried out in accordance with the endorsed traffic management plan to the satisfaction of the responsible authority.

    Upon completion of construction activities the permit holder must reinstate any damage to local roads caused by truck traffic, associated with construction related to the project to the satisfaction of the responsible authority and at no cost to council.

    Prior to the commencement of construction, a maintenance bond/bank guarantee to the value of 5 per cent of the cost of the external works shall be submitted to the [council] to be held for a period of 12 months from the date of practical completion of the works. Prior to the release of the bond/bank guarantee the permit holder must provide an independent report that certifies that the roads are in a satisfactory condition. (Do not use if conditions 49 and 50 are used.)

ENVIRONMENTAL MANAGEMENT PLAN

General requirement for an environmental management plan

32. Before the development starts, an environmental management plan must be prepared, to the satisfaction of the responsible authority. When approved, the environmental management plan will be endorsed by the responsible authority and will then form part of this permit.

    The environmental management plan:

    a. must be generally in accordance with [specify name of plan submitted with application]

    b. must be prepared in consultation with the agencies specified in conditions 31 to 38 or any other agency as directed by the responsible authority

    c. may be prepared in sections or stages

    d. must be in accordance with all applicable EPA requirements

    e. must meet the requirements of conditions 34 to 43 below.

33. The use and development must be carried out in accordance with the endorsed environmental management plan, to the satisfaction of the responsible authority.

Construction and work site management plan

34. The environmental management plan must include a construction and work site management plan.

    The construction and work site management plan must include:

    a. the identification of fuels, other hazardous materials and all other potential contaminants stored or used on site during the construction phase of the wind energy facility, and appropriate storage, construction and operational methods to control any identified contamination risks

    b. procedures for managing potential spills and leaks and pollution incidents, including incorporation of appropriate pollution control measures outlined in EPA Publication 480 Environmental Guidelines for Major Construction Sites

    c. procedures to suppress dust emissions from construction-related activities. Appropriate measures may include water spraying of roads and stockpiles, stabilising surfaces, temporary screening and wind fences, modifying construction activities during periods of heightened winds and revegetating exposed areas as soon as practicable

    d. procedures for managing noise emissions from construction-related activities

    e. criteria for the siting of any temporary concrete batching plant associated with the development of the wind energy facility and the procedure for its removal and reinstatement of the site once its use finishes. The establishment and operation of any temporary concrete batching plant must be designed and operated in accordance with EPA Publication 628 Environmental Guidelines for the Concrete Batching Industry

    f. appropriate sanitary facilities to be provided for construction and maintenance staff, which must be designed and operated in accordance with EPA Publication 891.2 *Code of Practice – Onsite wastewater management* (December 2008)

    g. the identification of waste re-use, recycling and disposal procedures

    h. a timetable, where practicable, for the construction of turbine bases, access tracks and power cabling during warmer months, to minimise impacts on ephemeral wetlands, local fauna and sediment mobilisation

    i. procedures to ensure that construction vehicles and equipment use designated tracks and works areas to avoid impacts on native vegetation

    j. procedures for covering trenches and holes at night, and filling trenches as soon as practical after excavation, to protect native fauna

    k. the removal of works, buildings and staging areas on completion of the construction phase of the project.

Sediment, erosion and water quality management plan

35. The environmental management plan must include a sediment, erosion and water quality management plan which must be prepared in consultation with the [specify name] Catchment Management Authority.

The sediment, erosion and water quality management plan must include:

a. identification of all construction and operational processes that could potentially lead to water contamination

b. procedures to ensure that silt from batters, cut-off drains, table drains and road works is retained on the site during and after construction and replaced as soon as possible. To this end:

   - all land disturbances must be confined to a minimum practical working area
   - soil to be removed must be stockpiled and separate soil horizons must be retained in separate stockpiles and not mixed, and soil must be replaced as soon as possible in sequence
   - stockpiles must be located away from drainage lines

c. the installation of geo-textile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive run-off from disturbed areas

d. procedures to ensure that steep batters are treated in accordance with EPA Publication 275 Construction Techniques for Sediment Pollution Control

e. procedures for waste water discharge management

f. a process for overland flow management to prevent the concentration and diversion of waters onto steep or erosion prone slopes

g. pollution management measures for stored and stockpiled materials including waste materials, litter, contaminated run-off and any other potential source of pollution to ground or surface waters

h. incorporation of appropriate pollution control measures outlined in EPA Publication 480 Environmental Guidelines for Major Construction Sites

i. an agreed program and appropriate capacity for annual inspection and regular maintenance of any on-site wastewater management system

j. siting of any concrete batching plant and any on-site wastewater disposal treatment fields at least 100 metres from any watercourse

k. a program of inspection and remediation of localised erosion within a specified response time.

Hydrocarbon and hazardous substances plan

36. The environmental management plan must include a hydrocarbon and hazardous substances plan.

    The hydrocarbon and hazardous substances plan must include:

    a. procedures for any on-site, permanent post-construction storage of fuels, lubricants, waste oil or other hazardous substances or potential contaminants to be in bunded areas

    b. contingency measures to ensure that any chemical or oil spills are contained on-site and cleaned up in accordance with EPA requirements.

Wildfire prevention and emergency response plan

37. The environmental management plan must include a wildfire prevention and emergency response plan prepared in consultation with and to the satisfaction of the CFA and DELWP.

    The wildfire prevention and emergency response plan must include:

    a. criteria for the provision of static water supply tanks solely for fire fighting purposes, including minimum capacities, appropriate connections and signage

    b. procedures for vegetation management, fuel control and the provision of fire fighting equipment during declared fire danger periods

    c. minimum standards for access roads and tracks to allow access for fire fighting vehicles, including criteria for access to static water supply tanks for fire fighting vehicles

    d. a requirement that, within three months after the commencement of the operation of the wind energy facility, the operator of the wind energy facility facilitates a familiarisation visit to the site and explanation of emergency services procedures for:

        i. the CFA (including headquarters level, the CFA Regional Office and local [insert name] volunteer brigade)

        ii. Rural Ambulance Victoria

        iii. [specify Council name]'s Municipal Emergency Management Committee

        iv. Victoria Police

    e. subsequent familiarisation sessions for new personnel of the organisations referred to in condition 34d on a regular basis as required

    f. if requested, training of personnel of the organisations referred to in condition 34d in relation to suppression of wind energy facility fires.

Blasting management plan *(only relevant where blasting is proposed)*

38. The environmental management plan must include a blasting management plan.

    The blasting management plan must include:

    a. name and qualification of the person responsible for blasting

    b. a description of the location of where explosives will be used

    c. a plan showing the location of every licensed bore on any property with a boundary within 1 km of the location of the blasting

    d. identification and assessment of any potentially sensitive site within 1 km of the location of the blasting, including the procedure for pre-blast and post-blast qualitative measurement or monitoring of the effects of the blasting on such sites

    e. the procedure for site clearance and post-blast re-occupation

    f. the procedure for the storage and handling of explosives

    g. a requirement that blasting only can occur after at least 48 hours prior written notification 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 km of the location of the proposed blasting

    h. a requirement that blasting only be undertaken between the hours of 8am and 4pm.

Vegetation management plan

39. The environmental management plan must include a vegetation management plan to be prepared in consultation with DELWP.

    The vegetation management plan must include:

    a. protocols so that net gains will be undertaken if native vegetation disturbance and removal cannot be avoided during the construction, operation and decommissioning stages of the wind energy facility

    b. procedures for the rehabilitation of construction zones with appropriate pasture species.

Biosecurity management plan

40. The environmental management plan must include a biosecurity management plan to be prepared in consultation with and to the satisfaction of DELWP and DEDJTR.

    The biosecurity management plan must address the risks of entry onto the site, establishment on the site or spread beyond the site of animal or plant pests and disease, or invasive plant and animal species, from people, earthmoving equipment and associated machinery, vehicles, materials and products including (but not limited to) soil, sand, gravel, rock, water, fertiliser, mulch, seed, plants, fodder and animals (referred to in this condition as biosecurity risks).

    The biosecurity management plan must include:

    a. procedures to prevent biosecurity risks, which may include (but are not limited to):

        i. the cleaning of all plant and equipment before transport onto and off the site and

        ii. the use of material/products on site which are free of invasive plants and animals

    b. a protocol for effective identification of biosecurity risks, early intervention to manage biosecurity risks, ongoing monitoring of biosecurity risks, trace-backs, and integrated control measures when entry, establishment or spread of specific risk targets is identified

    c. a requirement to comply with approved government or industry standards and procedures for the identification, prevention and management of biosecurity risks that apply from time to time, which include (but are not necessarily limited to):

        i. the DEDJTR's *Invasive Plant and Animal Management Policy Framework* (undated)

        ii. the DEDJTR's *Biosecurity Guidelines for Movement of Equipment Contractors Between Farms* (Note Number: AG1171 published in January 2005 and updated in July 2009; and

        iii. the DEDJTR's recommended standards and practices for managing viticulture biosecurity and plant biosecurity risks.

    Note: These standards are available at www.depi.vic.gov.au.

Environmental management plan training program

41. The environmental management plan must include a training program for construction workers and permanent employees or contractors at the wind energy facility site, including a site induction program relating to the range of issues addressed by the environmental management plan.

Environmental management plan reporting program

42. The environmental management plan must include a program for reporting environmental incidents, including:

    a. a register of environmental incidents, non-conformances and complaints, together with corrective actions taken in response to such incidents, non-conformances or complaints

    b. identification of the person to whom reports of environmental incidents, non-conformances and complaints should be made.

Implementation timetable

43. The environmental management plan must include a timetable for implementation of all programs and works referred to in conditions 34 to 42 above.

Review of the environmental management plan

44. The environmental management plan must be reviewed and if necessary amended in consultation with the responsible authority and other authorities as directed by the responsible authority every [five] years, to reflect operational experience and changes in environmental management standards and techniques.

    The amended environmental management plan must be submitted to the responsible authority for re-endorsement. Once re-endorsed, the amended environmental management plan will take the place of the earlier environmental management plan and will form part of this permit.

BATS AND AVIFAUNA MANAGEMENT PLAN

45. Before the development starts, a Bat and Avifauna Management Plan (BAM Plan) must be prepared in consultation with DELWP to the satisfaction of the responsible authority. When approved the plan will be endorsed by the responsible authority and will then form part of the permit.

    The BAM Plan must include:

    a. a statement of the objectives and overall strategy for managing and mitigating any significant bird and bat strike arising from the wind energy facility operations

    b. a monitoring program [of at least two years duration/on an ongoing basis] that:

        i. commences on the commissioning of the last turbine of the first stage of the use and development approved by this permit or such other time approved by the responsible authority

        ii. requires surveys to be undertaken during breeding and migratory seasons to ascertain:

            - [insert details of any specific species to be monitored]
            - the species, number, age and sex (if possible) and date of any bird or bat strike
            - the number and species of birds and bats struck at lit versus unlit turbines
            - any seasonal and yearly variation in the number of bird and bat strikes

- whether further detailed investigations of any potential impacts on birds and bats are warranted. Any further detailed investigations required are to be undertaken in consultation with DELWP and to the satisfaction of the responsible authority

c. procedures for the reporting of any bird and bat strikes to the responsible authority and to DELWP within seven days of becoming aware of any strike, identifying where possible whether the strike was at a lit or unlit turbine

d. information on the efficacy of searches for carcasses of birds and bats, and, where practicable, information on the rate of removal of carcases by scavengers, so that correction factors can be determined to enable calculations of the total number of mortalities

e. procedures for the regular removal of carcasses likely to attract raptors to areas near turbines

f. procedures for periodic reporting, within agreed timeframes, of the findings of the monitoring to the responsible authority, DELWP and the local community

g. recommendations in relation to a mortality rate for specified species which would trigger the requirement for responsive mitigation measures to be undertaken by the operator of the wind energy facility, to the satisfaction of the responsible authority and DELWP

h. procedures for developing measures, in consultation with the responsible authority and DELWP, to offset any impacts detected through the monitoring program, including:

   i. turbine operation management

   ii. on-site or off-site habitat enhancement (including management or improvement of habitat or breeding sites).

46. Following the completion of the monitoring program referred to in condition 43, a report must be submitted to the responsible authority and DELWP setting out the findings of the program to the satisfaction of the responsible authority. After consideration of this report, the responsible authority may direct that further investigation of potential or actual impacts on birds and bats is to be undertaken, in which case:

    a. the extent and details of the further investigation must be to the satisfaction of the responsible authority and DELWP

    b. the investigation must be carried out to the satisfaction of the responsible authority and DELWP.

47. The use and development of the wind energy facility must be carried out in accordance with the endorsed BAM management plan to the satisfaction of the responsible authority.

REFERRAL AUTHORITY CONDITIONS

48. [Include any additional conditions required by referral authorities. Ensure that other conditions do not repeat, and are consistent with, conditions required by a referral authority.]

SECURITY DEPOSIT/BOND *(only relevant where deposit/bond is applied)*

49. Before the development starts, the operator of the wind energy facility must provide one or more security deposits or bonds to secure:
    a. the performance of any works required under this permit
    b. the maintenance of those works for a period of 12 months after the works are completed.
50. The nature of the security deposit(s) or bond(s), and the terms on which they are provided, must be to the satisfaction of the responsible authority, and:
    a. the amount of the security deposit(s) or bond(s) must be calculated by reference to the value of the works to which the security deposit or bond relates
    b. the security deposit(s) or bond(s):
        i. must remain in place for a period of at least 12 months after the completion of the relevant works to which the security deposit or bond relates
        ii. may only be applied to any works to which the security deposit or bond relates that are not completed in accordance with the requirements of this permit
        iii. will be released at the completion of the maintenance period referred to in condition 49b.

SITE SECURITY

51. All access points to the site and to individual turbines must be locked when not in use and made inaccessible to the general public, to the satisfaction of the responsible authority.
52. All electrical equipment, spare parts and other equipment and materials associated with the wind energy facility must be located in screened, locked storage areas that are inaccessible to the public, to the satisfaction of the responsible authority.
53. Public safety warning signs must be located on all towers, to the satisfaction of the responsible authority.

DECOMMISSIONING

54. Within six months after the construction of the wind energy facility is completed, the operator of the wind energy facility and the owners of the properties which make up the site must enter into an agreement with the responsible authority under section 173 of the *Planning and Environment Act 1987*.

    The agreement must require the operator of the wind energy facility to do the following where any or all turbines have permanently ceased to generate electricity:

    a. notify the responsible authority in writing of the turbine(s) ceasing operation. Such notification must be given no later than two months after the turbine(s) cease operation

b. undertake the following to the satisfaction of the responsible authority within such timeframe as may be specified by the responsible authority:

   i. remove all above ground non-operational equipment

   ii. remove and clean up any residual contamination

   iii. rehabilitate all storage areas, construction areas, access tracks and other areas affected by the decommissioning of the turbine(s), if those areas are not otherwise useful to the on-going use or decommissioning of the wind energy facility

   iv. submit a decommissioning traffic management plan to the responsible authority and, when approved by the responsible authority, implement that plan

   v. submit a post-decommissioning revegetation management plan, including a timetable of works, to the responsible authority and, when approved by the responsible authority, implement that plan.

55. Application must be made to the Registrar of Titles to register the section 173 agreement on the title to the land under section 181 of the Act within one month after the agreement is executed.

56. The operator of the wind energy facility must pay the reasonable costs of the preparation, execution, registration and enforcement of the section 173 agreement.

STAGING

57. The use and development authorised by this permit may be completed in stages as shown on the endorsed development plans. The corresponding obligations arising under this permit may be similarly completed in stages, except the obligation to prepare and submit the development plans under condition 1.

PRELIMINARY INVESTIGATIVE WORKS

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

EXPIRY

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

    a. the development is not started within three years of the date of this permit

    b. the development is not completed within six years of the date of this permit.

Date issued:.....

Signature of Responsible Authority:.....

Notes:

1. Any off-site works required under this permit, or any native vegetation removal required in order to implement the use and development allowed under this permit, may require separate planning permission.
2. References in this permit to CASA are references to the Civil Aviation Safety Authority.
3. References in this permit to EPA are references to the Environment Protection Authority.
4. References in this permit to CFA are references to the Country Fire Authority.
5. References in this permit to DELWP are references to the Department of Environment, Land, Water and Planning.
6. References in this permit to DEDJTR are references to the Department of Economic Development, Jobs, Transport and Resources.

IMPORTANT INFORMATION ABOUT THIS NOTICE

WHAT HAS BEEN DECIDED?

The responsible authority has decided to grant a permit. The permit has not been issued.

This notice sets out what the permit will allow and what conditions the permit will be subject to if issued.

WHAT ABOUT APPEALS?

For the Applicant

- The person who applied for the permit may apply for review of any condition in the notice of decision to grant a permit. The application for review must be lodged within 60 days of the giving of this notice.

For an Objector

- An objector may apply for review of the decision of the responsible authority to grant a permit. The application for review must be lodged within 21 days of the giving of this notice.
- If there is no application for review, a permit will be issued after 21 days of the giving of this notice.

For all applications for review

- An application for review is lodged with the Victorian Civil and Administrative Tribunal.
- An application for review must be made on the Application for Review form which can be obtained from the Victorian Civil and Administrative Tribunal, and be accompanied by the applicable fee.
- An application for review must state the grounds upon which it is based.
- An application for review must also be served on the responsible authority.
- Notice of the application for review must be given in writing to all other parties to the review as soon as practicable after an application for review is lodged. An objector who applies for a review must give notice to the person who applied for the permit.

An applicant who applies for review must give notice to all objectors.

- Details about applications for review and the fees payable can be obtained from the Victorian Civil and Administrative Tribunal.

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This document is also available in accessible Word format at www.delwp.vic.gov.au/planning