

Policy and planning guidelines for development of wind energy facilities in Victoria

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Ministers' foreword



The Brumby Government is committed to facilitating the development of a secure, affordable, and sustainable energy supply for all Victorians.

Our goal is to reduce greenhouse gas emissions across the State by 60 per cent of 2000 levels by 2050 to meet the climate change challenge and create a clean energy future for Victoria.

There is no single, simple answer to delivering clean energy for Victoria. We are investing in clean coal technologies, renewable energy and increased energy efficiency, and supporting the development of a national emissions trading scheme.

Renewable energy, and wind energy in particular, will be critical to achieving our goals for a sustainable future. Wind in Victoria is a valuable natural resource, and one that will help us meet our future energy needs. Given our State's unique geography, we have ready access to wind energy - a valuable natural resource that can help us to meet our future energy needs.

We must ensure that we develop Victoria's wind resource in a way that balances environmental, economic and social factors.

Assessment of proposals for wind energy facilities requires appropriate consideration of the broader energy supply and greenhouse benefits of such facilities, while at the same time providing suitable standards for their development.

Since their introduction in 2002, the *Policy and planning guidelines for development of wind energy facilities in Victoria* (the Guidelines) have ensured a consistent approach to the development of wind energy facilities across the State.

This updated version of the Guidelines responds to technology, design and construction issues that have emerged since 2002. The Guidelines improve the guidance provided to proponents, authorities and the Victorian community in considering the merits and impacts of wind energy proposals.

The Guidelines also clarify that where the Minister for Planning is the responsible authority all planning approvals relevant to the wind energy facility will be considered simultaneously, which will save time and help attract renewable energy investors to Victoria.

Peter Batchelor MP
Minister for Energy and Resources

Justin Madden MP
Minister for Planning

Introduction



This section outlines the purpose of the Guidelines and provides a summary of their content.

1.1 Purpose

The purpose of the *Policy and planning guidelines for the development of wind energy facilities in Victoria* (Guidelines) is to outline how the Victorian Government will facilitate the appropriate development of wind energy facilities, balancing environmental, social and economic outcomes.

This document updates and replaces the *Policy and planning guidelines for the development of wind energy facilities in Victoria* released by the Victorian Government in 2003.

The Guidelines outline:

- the Government's renewable energy policy
- the role of wind energy projects in achieving a sustainable energy future for Victoria
- the State assessment mechanism for wind energy projects of 30MW or greater
- a planning framework for the consideration of all wind energy projects which will ensure a consistent and balanced approach to assessment across the State.

The Guidelines provide a framework that ensures proposals for wind energy facilities are thoroughly assessed, including where necessary, the need for an Environment Effects Statement (EES).

Wind energy will help us meet our future energy needs without producing the greenhouse gas emissions that threaten some of Victoria's most precious areas, such as our alpine ecosystems, National Parks and wetlands.



1.2 Summary of content

The Guidelines comprise:

Section 1 outlines the purpose of the Guidelines and a summary of their content.

Section 2 defines a wind energy facility in Victoria.

Section 3 describes Victoria's wind energy resource and outlines the Victorian Government's policy approach to encourage appropriate wind energy development in the State.

Section 4 describes the way in which wind energy facility developments fit into the planning system by outlining a State planning policy and a decision making framework that balances environmental, economic and social issues.

Glossary explains the terms used in the Guidelines.

Wind energy facilities



This section defines a Victorian wind energy facility.

2.1 What is a wind energy facility?

2.1.1 Wind energy facility definition

A wind energy facility has the following definition in all planning schemes (refer to Clause 74 – Land use terms, in the relevant planning scheme).

A wind energy facility is land used to generate electricity by wind force. It includes any turbine, building, or other structure or thing used in or in connection with the generation of electricity by wind force. It can include an anemometer.

It does not include turbines principally used to supply electricity for domestic or rural use of the land.

2.1.2 Anemometers, utility installation and electricity grid connections

Anemometer

An anemometer is a device used to measure the wind speed and direction at a site.

A temporary anemometer may be located on a site for up to 3 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 3-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.

Wind energy facilities need to be located on sites that have strong, steady winds throughout the year, good road access and proximity to the electricity grid.



Utility installation

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 defined as either a 'utility installation' or a 'minor utility installation' depending on the nature and capacity of the transmission or distribution infrastructure.

The transmission or distribution system of power lines necessary to connect a wind farm to the electricity grid is a separate land use to that of a wind energy facility. The distribution starting point is defined as the on-site metering point of output from the converter station where the electricity will enter the distribution system.

The wind energy facility and the electricity grid connections are normally subject to separate planning applications. While the applications can run in parallel, there may be two different responsible authorities (ie the Minister for Planning and Council for some projects) and timelines for approval could differ depending on the nature of the applications. Where they are separate applications, details of the power line infrastructure are not required to be provided as part of the wind energy facility application, with the exception of the distribution starting point.

2.1.3 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 and proximity to the electricity grid. 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 comprises:

- a series of wind turbines
- a substation
- 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, including connections from the wind turbines to the on-site substations (an electricity generation, transmission and distribution system where voltage is transformed from high to low, or the reverse, using transformers)
- wind monitoring equipment, which can include an anemometer, and
- temporary or permanent access tracks.

The wind turbines used in commercial wind energy facilities today are generally large, slowly rotating, 3-bladed machines that typically 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, and
- 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 5 to 10 years. As technology develops, other forms of turbines may also be proposed.

Section 3

Wind energy in Victoria



This section describes Victoria's wind energy resource and outlines the Victorian Government's policy approach to encourage appropriate wind energy development in the State.

3.1 Wind energy in Victoria

Victoria has abundant wind resources and wind energy facilities have the potential to meet a significant proportion of Victoria's growth in electricity consumption over the next 10 years. Victoria's wind resources are well suited to supporting a large scale grid of connected wind energy facilities. A 10MW wind energy facility can generate enough electricity to supply around 4,000 Victorian homes and displace approximately 30,000 tonnes of greenhouse gas emissions per annum.

In order to facilitate wind energy development, the following matters need to be taken into consideration.

3.1.1 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/second. Approximately two thirds of Victoria's land area has average wind speed of 5.8 to 7.2 metres/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.

Commercial wind energy facilities are excluded from land reserved under the National Parks Act which represents approximately 43% of the length of Victoria's coastline.



Improving information on Victoria's wind resources

It is important that wind energy developers have access to information about Victoria's wind resource. In 2003 the Government released the *Victorian Wind Atlas*, which provides detailed information about the wind resource in Victoria, land reserved under the *National Parks Act 1975* and commercial constraints to wind energy development, such as proximity to electricity transmission systems.

The *Victorian Wind Atlas* presents the results of the CSIRO's modelling and analysis of the wind resources for:

- the state as a whole, and
- 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, and
- reference towns.

The *Victorian Wind Atlas* has increased the quality and consistency of information about Victoria's wind resources, and is designed to assist in communications between developers, councils and communities about appropriate locations for wind energy development in a particular region.

3.2 Policy context

3.2.1 A sustainable energy future

Access to affordable and reliable sources of energy underpins Victoria's economic and social development. Our transport and communications systems, food production, manufacturing and service sectors all depend on the availability of energy. The Victorian Government is committed to maintaining a secure, efficient, affordable and sustainable supply of energy.

The Victorian Government also recognises that climate change is the most serious environmental problem we face. In *Growing Victoria Together*, the Victorian Government confirmed its commitment to sustainable development – in relation to the environment, the economy and the community.

Around 60 per cent of Victoria's greenhouse gas emissions come from the stationary energy sector. The largest contribution to stationary energy sector emissions comes from the generation of electricity from brown coal.



The Government is committed to a long-term target to reduce Victoria's greenhouse emissions by 60 per cent by 2050 compared to 2000 levels. The steps needed to prepare our economy for a carbon-constrained future require all sectors – government, business, and households – to reduce greenhouse gas emissions.

The Government has developed a comprehensive climate change policy package to reduce greenhouse gas emissions from the stationary energy sector in a way that also provides an attractive regulatory environment for investment and maintains the State's economic growth.

The *Greenhouse Challenge for Energy: Driving investment, creating jobs and reducing emissions Position Paper* (2004) highlighted the need for a comprehensive climate change policy approach to meeting Victoria's future energy needs in a sustainable way, rather than concentrating all efforts in just one energy source.

For these reasons, the Victorian Government is pursuing further investments in a range of technologies including cleaner coal technologies, renewable energy and energy efficiency, as well as supporting the introduction of the national emissions trading scheme known as the Carbon Pollution Reduction Scheme, which is intended to commence operation in 2011.

3.2.2 Renewable Energy Action Plan

While fossil fuels are likely to remain a cornerstone of our energy production for many decades, Victoria has abundant renewable energy sources that have the potential to play a greater role in meeting our energy needs in a more sustainable way.

Renewable energy can play a role in:

- delivering greenhouse gas abatement in the long-term, protecting Victoria against future carbon constraints
- contributing to the diversity and security of Victoria's energy supplies, by reducing exposure to the risks inherent in relying on a narrow range of energy sources, and
- driving regional investment and employment in emerging and sustainable industries.

Following a decision by the Commonwealth Government in 2006 to not expand its mandatory renewable energy target, Victoria introduced a *Victorian Renewable Energy Target Scheme* (VRET) on January 2007. This scheme sets a target of 10 per cent of Victoria's electricity consumption to be supplied from renewable energy sources by 2016.

In 2007, the Commonwealth Government committed to ensuring that 20 per cent of Australia's electricity supply comes from renewable energy sources by 2020 through an expanded Renewable Energy Target. The Victorian Government supports this proposal in principle and will work closely with the Federal Government to ensure that this expanded target will provide a level of support that is equal or greater than that provided under the VRET scheme.



Further initiatives to accelerate the uptake of renewable energy and drive development of the renewable energy sector in Victoria are outlined in the *Government's Renewable Energy Action Plan* (2006).

3.2.3 Complementary energy policy initiatives

The Victorian Government's support for renewable energy is complemented by other policy initiatives aimed at reducing greenhouse gas emissions from the stationary energy sector. These have the potential to stimulate growth of the renewable energy sector.

In the stationary energy sector, the cost of low emissions fuels and technologies are generally higher than conventional ones. The Government has developed several energy policies to address this cost barrier including:

- support for a national emissions trading scheme, and
- Victoria's Energy Technology Innovation Strategy.

3.2.4 A balanced approach to wind energy development

Wind energy projects contribute significantly to meeting renewable energy targets. Assessing wind energy developments therefore requires that appropriate consideration be given to these broader benefits, while protecting critical environmental, cultural and local values.

Employment and regional development

The Victorian Government is committed to supporting industries that can provide significant employment and regional development benefits for the State.

The construction of wind energy facilities provides employment in steel tower fabrication and other areas of engineering.

The wind energy industry is one of the fastest growing industries in the world. The world's demand for energy is projected to grow by 50 per cent in the next 20 years, with a significant proportion of the growth in the Asian region. A number of countries in the region, most notably China and India, have committed to ambitious renewable energy targets. With a rising demand for wind energy in the Asian region, there will be an increasing need for wind generation components as well as expertise in the design and installation of wind energy facilities.

In light of Victoria's VRET scheme and the introduction of the Commonwealth's expanded Renewable Energy Target there is scope to expand the manufacturing base in Victoria to build wind energy facility components. The development of the wind industry has the potential to attract substantial investment and create more jobs in regional areas, as this is generally where the best wind resources are located. The addition of wind energy expertise to Victoria's already considerable capability in the development of energy infrastructure will increase the ability of Victorian companies to compete internationally and open up new export markets for the State.



Protecting critical values

Wind energy facilities should not lead to unacceptable impacts on critical environmental or cultural values. Critical values are those protected under Commonwealth or Victorian legislation.

Exclusion of wind energy facilities in National Parks

National Parks protect many of the most significant landscapes on the coast. In recognition of the landscape and environmental values embodied in many National Parks, wind energy facility developments are not permitted on any land subject to the *National Parks Act 1975*.

The exclusion of wind energy development from land protected under the National Parks Act excludes wind energy facilities from approximately 43 per cent of the length of Victoria's coastline, and from approximately 32 per cent of the area within 1km of the coast.

Environmental Values

(a) Flora and Fauna

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

At the national level, responsible authorities and proponents 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 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).

International experience and Victorian research shows that the level of bird mortality associated with modern wind energy facilities is not significant. Nevertheless, in assessing a proposed development, any risk to protected bird species needs to be carefully assessed and adaptive management applied where relevant.

At the State level, responsible authorities and proponents need to be aware of the following:

- The *Flora and Fauna Guarantee Act 1988* provides protection for species and ecosystems which are of state-wide importance.
- The *National Parks Act 1975*. National Parks and Reserves provide protection for over 68 percent of Victoria's protected flora and 91 percent of Victoria's protected fauna, affording substantial protection to flora and fauna by the exclusion of wind energy facilities from land protected under this Act.
- The State Planning Policy Framework (Clause 15.09 – Conservation of native flora and fauna) of all planning schemes provides the relevant decision making framework for responsible authorities.



(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, responsible authorities must have regard to Victoria's Native Vegetation Management – A Framework for Action (Department of Natural Resources and Environment 2002).

Significant Landscape Values

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

In a number of regions across Victoria strategic landscape studies have been completed, including the *Great Ocean Road Region Landscape Assessment Study* (2004) and the *Coastal Spaces Landscape Assessment Study* (2006). These studies identify visually significant landscapes across Victoria's non-metropolitan coastal hinterland and provide appropriate recommendations for improved planning scheme guidance. The State Planning Policy Framework of the *Victoria Planning Provisions* (Clause 15.08 'Coastal areas') requires these studies to be considered by decision makers.

Relevant strategic studies undertaken at the municipal level may also be referenced within the Local Planning Policy Framework of planning schemes and significant landscapes may be recognised in planning scheme overlays, such as the Environmental Significance Overlay, Vegetation Protection Overlay or a Significant Landscape Overlay.

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

In addition to addressing landscape assessments and planning scheme provisions, suggested mitigation measures to minimise the potential impact of wind energy facilities on a landscape should also be considered. Refer to Section 4.

There are also requirements relating to landscape assessment under the State environmental assessment process. For details refer to page 15 State environmental assessment.

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. Details of the planning permit process are provided in the Department of Planning and Community Development's general practice note *The Aboriginal Heritage Act 2006 and the planning permit process*. Refer to www.dpcd.vic.gov.au/planning.

Where wind energy proposals are on Crown Land, the provisions of the Commonwealth's *Native Title Act 1993* apply.

Planning framework for wind energy facility proposals



This section provides a clear decision making framework that balances environmental, economic and social issues.

Part A - Planning Permit Applications

This section outlines the planning permit process and application requirements.

4.1 A clear decision making framework

All planning schemes include provisions to assist responsible authorities in assessing proposals for wind energy facilities. These provisions include:

- a definition of a wind energy facility (Refer to Section 2)
- a State Planning Policy on wind energy facilities in the context of Victoria's renewable energy objectives
- requirements for planning permit applications – Clause 52.32 Wind Energy Facility, and
- no planning permit requirements for anemometers erected for less than 3 years.

Planning and responsible authorities are required to take into account the Guidelines in their decision making.

4.2 Who is the responsible authority?

Reflecting the government's policy commitment in support of wind energy development:

- The Minister for Planning is responsible for assessing proposals that have a capacity 30 MW or greater. This arrangement recognises that large scale wind energy facilities are projects of State Significance requiring timely and expert assessment.

In assessing wind energy facilities, considerable weight should be given to the contribution to Government policy objectives for the development of renewable energy.



- In the event that a single project requires a number of permits that are 30 MW or greater when combined, it can be anticipated that the Minister would call-in the proposals in order to coordinate decision making.

Council is the responsible authority for the following proposals:

- Wind energy facilities that have a capacity of less than 30MW.
- A utility installation outside a proposed wind energy facility and connecting the on-site metering point of output from the converter station to the existing electricity grid.
- An anemometer located on a site for 3 years or more.
- Native vegetation removal not directly related to the use and development of a wind energy facility.

Consult with the relevant local council to establish whether other approvals are required.

4.3 Where can a wind energy facility be constructed?

A permit may be granted for a wind energy facility on any land except for land subject to the *National Parks Act 1975*.

4.4 Consideration of planning permit applications

Use and development of land for the purpose of a wind energy facility triggers a requirement for a planning permit under all planning schemes.

Section 13(a) of the *Planning and Environment Act 1987* provides that the municipal council is the responsible authority for administration of a planning scheme unless a scheme provides to the contrary. The Minister for Planning is the responsible authority for a wind energy facility 30MW or greater in all Victorian planning schemes.

Where the Minister is the responsible authority for a wind energy facility and where works, such as native vegetation removal or main road access require separate planning approval the Minister will consider all planning approvals relevant to the wind energy facility at the same time. For example, the placement of a wind turbine may require the removal of native vegetation. Provided the works are required as part of the development of the wind energy facility, a separate permit application is not required to be submitted to the local council. The Minister is able to consider all such matters as part of a single permit application for approval of the wind energy facility, associated native vegetation removal and creation or alteration of road access.

Proponents may consult with Department of Planning and Community Development regional officers to establish whether related development can be considered by the Minister in the planning permit application for a wind energy facility.

Where works aren't considered to have a real connection to the wind energy facility, the local council may be required to consider some matters related to the proposal and to determine them as the responsible authority.



In circumstances where multiple permit applications are required to be made to separate responsible authorities, there are two options available to enable the applications to be assessed and determined by the Minister for Planning:

- The Minister for Planning may 'call in' the related planning permit application (eg a permit application to remove native vegetation) made to the local council as the responsible authority under Section 97B of the *Planning and Environment Act 1987*, OR
- The local council, as responsible authority, may request under Section 97C of the *Planning and Environment Act 1987* that the Minister for Planning decide the application.

Where two separate permit applications are before the Minister for Planning (for example, one each for a wind energy facility and vegetation removal) and the applications have been considered and determined, the Minister is required to issue a separate planning permit or refusal for each application.

4.5 The planning permit application process

This section provides a general overview of the planning permit application process. It also touches on the State's environmental assessment process given that Victoria's planning and environmental assessment processes inter-relate. The diagram on page 20 outlines the steps in a typical assessment process for a wind energy facility. Section 4.7 provides further details about preparing a planning permit application.

Requirement for a planning permit

A planning permit is required to use and develop land for a wind energy facility. The *Planning and Environment Act 1987* prescribes the planning permit process and the local council can advise which planning scheme provisions apply to the land.

Proponents should also establish any other ancillary matters that trigger the need for planning permit approval, such as native vegetation removal.

Planning scheme zoning and overlay information can also be obtained on the Department of Planning and Community Development's web site www.dpcd.vic.gov.au/planningschemes

Pre-application consultation with community and stakeholders

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

Pre-application consultation is not a formal statutory requirement of the planning process, however it 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 is the proponent's main chance to anticipate the concerns of the community and stakeholders, obtain information and gain feedback on existing conditions and potential issues to address before the public notification phase of the development application. Early consultation will assist in developing a well conceived proposal and may lead to a more efficient 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 the Department of Planning and Community Development, other agencies and local council's have to say
 - listening to what other stakeholders and the public 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, and
 - monitoring stakeholder involvement and inputs to refine and better target the consultation.

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

The proponent may 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:

- *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia* – Australian Wind Energy Association (Auswind), and
- Effective Engagement Kit – Department of Sustainability and Environment www.dse.vic.gov.au/engage



Lodgement and processing of planning permit applications

Applications are lodged with the relevant responsible authority (either the local council or the Minister for Planning).

An application does not proceed until all the relevant information is at hand. Planning applications need to include sufficient information and explanation to allow the responsible authority to come to sound and timely decisions. These Guidelines are provided to assist proponents in the design and siting of proposed wind energy facilities and in preparing planning permit applications. The Australian Wind Energy Association's (AusWEA) *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia 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 diagram on page 20.

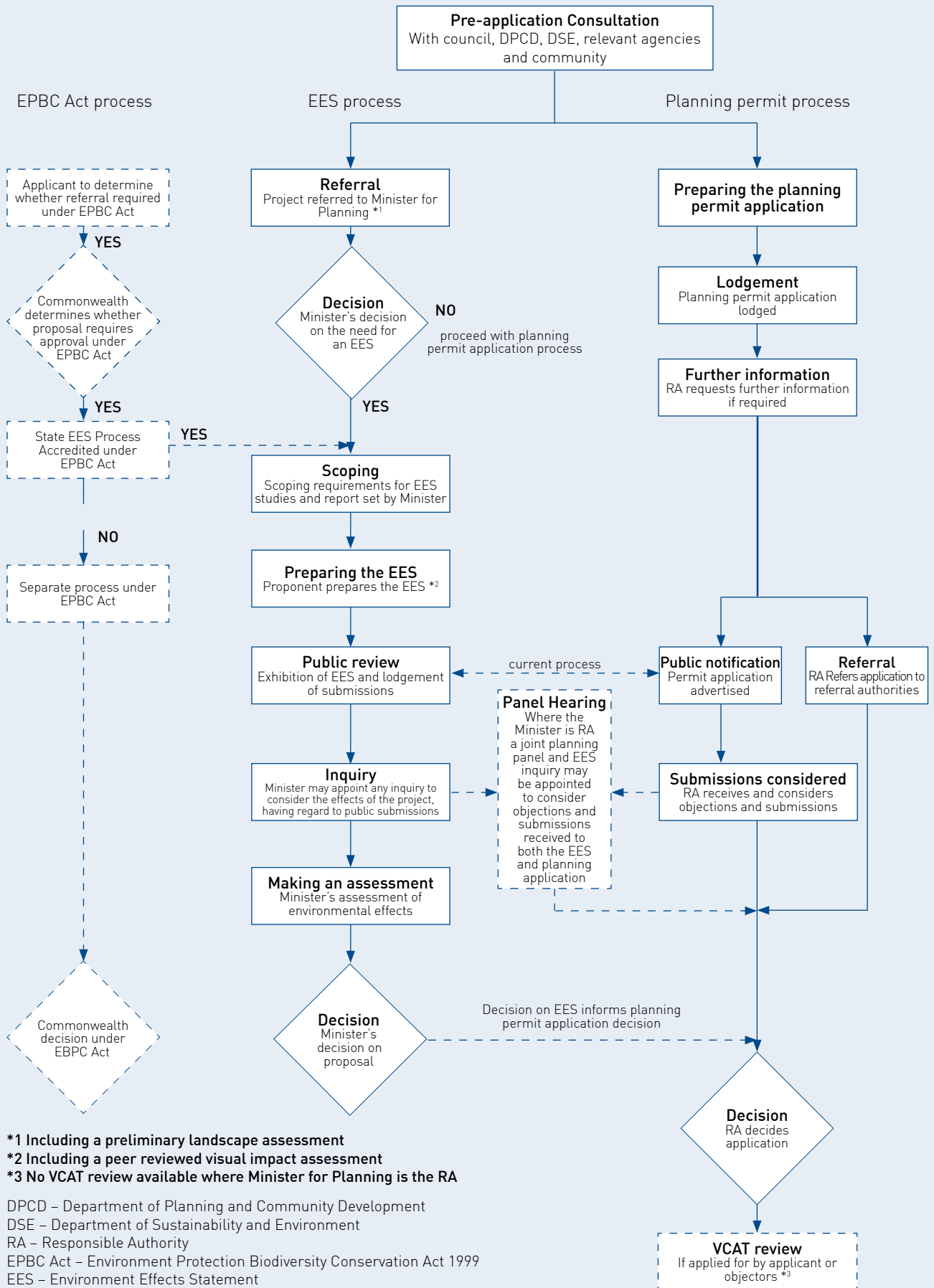
Decision options

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, it must comply with Form 4 of the Planning and Environment Regulations 1988. The manual, *Writing Planning Permits*, prepared by DSE and the Municipal Association of Victoria, provides guidance on preparing planning permits.

If a permit or notice of decision is granted 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 for example.

The assessment process flowchart





4.6 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:

Victoria

- *Environment Effects Act 1978*
- *Aboriginal Heritage Act 2006*
- *Flora and Fauna Guarantee Act 1988* (FFG Act)

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 on the [Department of Planning and Community Development's web page](#).

State environmental assessment

The Minister for Planning is also responsible for administering the *Environmental Effects Act 1978* and for deciding whether an Environmental Effects Statement (EES) is required under this 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 referral guidelines in the *Ministerial guidelines for assessment of environmental effects under the Environmental Effects Act 1978* provide guidance on EES processes.

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

Since 2003, the Minister for Planning has required a preliminary landscape assessment to accompany a referral of a proposed wind energy facility to the Minister for advice under the *Environment Effects Act 1978*. Should an EES be required, then it must include an independently peer reviewed visual impact assessment by a suitably qualified and experienced person.

It is anticipated that most wind energy facilities can be adequately assessed through the planning permit process.

Commonwealth environmental assessment

A proposal may also need approval under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) if it is likely to have a significant impact on matters of national environmental significance, for example, listed threatened and 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 the Environment, Water, Heritage and the Arts. 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 legislation is available from the Australian Government Department of Environment, Water, Heritage and the Arts, or for help in deciding whether an action should be referred, you should consult the 'EPBC Administrative Guidelines on Significance'.

If approval is required under the EPBC Act, either an assessment process specified under that Act or an accredited process can be applied.

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.

Victoria is able to accredit either the EES process or Advisory Committee process. However, the Commonwealth will need to agree to the application of the planning permit process in specific instances.

While the Commonwealth has accredited these assessment processes, it will make the final decision under the EPBC Act.



4.7 Preparing a planning permit application

This table provides advice on preparing an application for a wind energy facility.

1. Pre-application discussions

Talk to the responsible authority to find out:

- 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 (if the application will be referred to other agencies, it is important at this point to talk to them about what their requirements might be), eg native vegetation removal
- who may be affected by the proposal, and
- information required to accompany the application.

Talk to the Department of Sustainability and Environment's 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.

Talk to the Department of Planning and Community Development to find out if the proposal should be referred to the Minister for Planning to determine whether an Environment Effects Statement will be required. If so, a preliminary landscape assessment must be prepared by the proponent and provided to the Department to accompany the referral.

Talk to the Australian Government Department of Environment, Water, Heritage and the Arts 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.

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.

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 *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia*, Australian Wind Energy Association (Auswind).

3. Prepare the site analysis

This is a site audit. It may be a plan, photographs or some other suitable way of 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 the following section of these Guidelines. If the site is also to be used for other purposes, such as agriculture, the site analysis should include information about this.

4. Prepare the application

Use the information collected at Steps 1 to 3 above as the basis for finalising the details of the proposal and preparing the application. The information required to accompany the application is set out in the following section of these Guidelines.



4.8 Application requirements

The Particular Provisions in all planning schemes outline information which must accompany an application for a wind energy facility (refer to Clause 52.32 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.

Site and context analysis

A site analysis

The site analysis may use a site plan, photographs or other techniques to accurately describe:

- In relation to the site:
 - Site shape, dimensions and size
 - Orientation and contours
 - Access to infrastructure
 - The existing use and siting of buildings or works on the land
 - Existing vegetation
 - The landscape of the site
 - Species of flora and fauna listed under the Flora and Fauna Act 1988 (FFG) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC)
 - Sites of cultural heritage significance
 - Wind characteristics
 - Any other notable features or characteristics of the site.
- In relation to the surrounding area:
 - Existing land uses
 - Direction and distances to nearby dwellings, townships, urban areas, significant conservation and recreation areas, major roads, tourist routes, airports, aerodromes and existing and proposed wind energy facilities
 - The siting and use of buildings on adjacent properties
 - The location of all dwellings within a 500 metre radius of the site
 - The landscape, including any significant landscape features
 - Views to and from the site, including views from existing dwellings, major roads, walking tracks and tourist routes
 - Sites of flora and fauna listed under the FFG and EPBC Acts, including significant habitat corridors for the movement of these fauna
 - Sites of cultural heritage significance
 - National Parks and land subject to the *National Parks Act 1975*
 - Any other notable features or characteristics of the area.

A location plan

A location plan showing:

- The full site area
- Local electricity grid
- Access roads to the site.



Design response

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
- Accurate visual simulations showing the appearance of the development in the context of the surrounding area and from key public view points
- A rehabilitation plan for the site, including plans for revegetation and regeneration works.

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 above ground level)
 - The amount of electricity to be exported from the site
 - Expected greenhouse gas savings
 - Infrastructure requirements including, proposed connections to the electricity grid
 - Traffic movements.
- 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.
- An assessment of the visual impact on abutting land that is subject to the *National Parks Act 1975*.
- An assessment of the impact of the proposal on any species (including birds and bats) listed under the FFG Act or EPBC Act.
- An assessment of the noise impact of the proposal on existing dwellings prepared in accordance with New Zealand Standard NZ6808:1998, Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators.
- An assessment of the impacts upon Aboriginal and non-Aboriginal cultural heritage.



Written reports cont...

- An explanation of why the site is suitable for the wind energy facility having regard to:
 - The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and any relevant local planning policy
 - The contribution of the proposal to increasing Victoria's diversity and security of energy supply
 - The contribution of the proposal to minimising greenhouse emissions
 - The economic and social impacts of the proposal
 - The suitability of the site in comparison to other potential sites in the area.
 - Likely amenity effects on the surrounding area due to blade glint, shadow flicker, overshadowing and electromagnetic interference
 - The extent to which the proposal has been designed to manage any potential adverse impacts
 - The impact on aircraft safety including the views of the Civil Aviation Safety Authority if within a 30 kilometres radius of an airfield or if one or more turbines are more than 110 metres in height (to the tip of the turbine blade from ground level)
 - The cumulative effects of the proposal having regard to other existing or proposed wind energy facilities in the area.

The report may include plans, drawings, photographs, computer based simulations and other documents.

Environmental Management Plan

The preparation of an environmental management plan may be required.

- An environmental management plan details how the site will be managed through construction and sets out future operational and maintenance requirements and may include:
 - Principles of environmental management
 - Environmental mitigation measures
 - Standards to be met
 - Monitoring requirements
 - Decommissioning and rehabilitation requirements
 - Post construction adaptive management measures where monitoring shows significant impacts of EPBC Act and FFG Act listed species.



Part B – Assessing wind energy facilities

This section outlines the key criteria for evaluation of the planning merits of wind energy facilities by responsible authorities.

4.9 Assessing wind energy facility proposals

The Victorian Government is committed to the development of appropriate wind energy facilities in the State. Proposals for wind energy facilities will be assessed against State planning policy in the first instance, local planning policies in the relevant planning scheme, information provided by proponents and other matters specified in Section 60 of the *Planning and Environment Act 1987*.

The Guidelines provide responsible authorities with assistance for the assessment of wind energy facilities. 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. Responsible authorities should endeavour to balance environmental, social and economic matters in favour of net community benefit and sustainable development.

Some suggested impact reduction measures specific to wind energy facilities are outlined below.

4.9.1 Matters for consideration

The following is an explanation of matters to be considered by responsible authorities in assessing permit applications for wind energy facilities.

1 Contribution to Government Policy Objectives

State Planning Policy

The State Planning Policy Framework in all planning schemes contains a specific policy position regarding renewable energy – Clause 15.14 Renewable energy. This is the overarching policy statement regarding wind energy development. Responsible authorities must take account of and give effect to Clause 15.14 which states:

“Objective

To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.

General Implementation

Planning should facilitate renewable energy development in appropriate locations.

Planning should consider the economic and environmental benefits to the broader community of renewable energy generation and the effects on the local environment.



In planning for wind energy facilities, planning should:

- Facilitate the consideration of wind energy development proposals
- Recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year and that such sites may be highly localised, and

must take into account the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, 2009.

In considering proposals for renewable energy, planning and responsible authorities should have regard to the Renewable Energy Action Plan, July 2006”.

Evaluation by the responsible authority

Considerable weight should be given to the contribution to Government policy objectives in relation to the development of renewable energy.

2 Landscape and visual amenity

The degree to which a wind energy facility has a visual impact depends on the magnitude 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 a planning scheme overlay or a relevant strategic study referenced in the planning scheme
- landscape values associated with adjacent National Parks and land subject to the *National Parks Act 1975*, and
- the sensitivity of the landscape 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
- proximity to sensitive areas, and
- 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, and
- the skyline.

Evaluation by the responsible authority

It is accepted that wind energy facilities will have a degree of impact on the landscape.

In deciding whether or not the visual impact of a wind energy facility in the landscape is acceptable, it may be useful to 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.

Consideration of the visual impact of a proposal should be weighted having regard to the Government's Policy in support of renewable energy development.

Suggested impact reduction measures

The following measures are suggested:

- siting and designing to minimise impacts on views from areas used for recreation based on landscape values 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
- reducing light glare from obstacle lighting through appropriate mitigation such as baffling
- selecting turbines that are consistent in height, look alike and rotate the same way
- spacing turbines to respond to landscape characteristics



- undergrounding electricity lines wherever practicable
- minimising earthworks and provide measures to protect drainage lines and waterways
- minimising removal of vegetation, and
- avoiding additional clutter on turbines such as unrelated advertising and telecommunications apparatus.

3 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, and
- construction noise.

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

Evaluation by the responsible authority

A wind energy facility should comply with the noise levels recommended for dwellings in the New Zealand standard NZ6808:1998 *Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators*. www.standards.co.nz

During the assessment phase of the noise impact, particular attention to the following matters within the Standard is required:

- Separate correlation of background sound levels with the wind speed for different wind directions and/or the time of day (Clause 4.5.5 of the Standard), and
- Wind speed measurements at the hub height of the proposed turbines as recommended in the Note to Clause 4.5.6.

Application of wind energy facility noise standards

- Post installation noise compliance testing is to be provided for by condition of permit to the satisfaction of the responsible authority.
- Assessment of compliance is an expert task for certification of compliance 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.

(b) Blade glint

Blade glint can result from reflection of the sun from the turbine blades.

Evaluation by the responsible authority

Blades should be finished with a surface treatment of low reflectivity to ensure that glint is minimised.

(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.

Evaluation by the responsible authority

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.

(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.

Evaluation by the responsible authority

The siting of wind turbines in the 'line of sight' between transmitters and receivers should be avoided.



4 Aircraft Safety

The height of wind energy turbines can be substantial, resulting in potential impact upon nearby airfields and air safety navigation.

Aircraft safety issues should be addressed by considering the proximity of the site to airports, aerodromes, or landing strips. Consultation with the Civil Aviation Safety Authority (CASA) by proponents is required for wind energy proposals that:

- are within 30 kilometres of a declared aerodrome or airfield;
- infringe the obstacle limitation surface around a declared aerodrome, or
- 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 above ground level).

Evaluation by the responsible authority

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.

Upon consultation, CASA may require appropriate safeguards to ensure aviation safety. These may include changes to turbine locations, turbine heights and/or the provision of aviation safety lighting.

Suggested impact reduction measures

The following impact reduction measures may be considered (subject to CASA requirements and advice):

- reducing the number of wind turbines with obstacle lights
- specifying an obstacle light that minimizes light intensity at ground level
- specifying an obstacle light that matches light intensity to meteorological visibility, and
- reducing light glare from obstacle lighting through appropriate mitigation such as baffling.



5 Flora and Fauna

The flora and fauna found at a site should be considered in relation to:

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

In the first instance, proponents should contact the Victorian Department of Sustainability and Environment, or the Australian Government Department of the Environment, Water, Heritage and the Arts directly for advice on the potential survey work required, timeframes and future monitoring.

Where species listed under the FFG Act and the EPBC Act are considered reasonably likely to be present on the site, surveys are to be conducted at the appropriate time for at least 12 months preceding the planning permit application. The Department of Sustainability and Environment should be consulted on the timing of the surveys. Survey work should determine the species present, any adverse impacts and any appropriate mitigation measures.

If the proposal is likely to have significant impacts on listed species, planning permit conditions may require monitoring of flora and fauna, including 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 on-going risks.

If native vegetation is proposed to be removed, responsible authorities should follow the three-step approach of avoid, minimise and offset, as defined in *Victoria's Native Vegetation Management – A Framework for Action* (Department of Natural Resources and Environment 2002). In applying the policy there are three key steps for land managers and owners to address when considering vegetation clearing as addressed in Clause 15.09-2 of the State Planning Policy Framework of all planning schemes:

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

Details of the Native Vegetation Management Framework can be found on the Department of Sustainability and Environment web site www.dse.vic.gov.au or contact the relevant regional office.



Part C– Planning permit administration and enforcement

Describes the role of the responsible authority in administering and enforcing wind energy facility permit conditions.

4.10 Administration of planning permit applications

Section 13(a) of the *Planning and Environment Act 1987* provides that the municipal council is the responsible authority for administration of a planning scheme unless a scheme provides to the contrary.

The schedule to clause 61.01 of all planning schemes provides that the Minister for Planning is responsible for *considering, determining and approving* matters associated with permit applications for wind energy facilities with a capacity 30MW or greater. Any matters additional to the Minister’s consideration, determination and approval of a wind energy facility rests with the local council, for example processing and approving information related to permit conditions.

There is however, an exception to this. Where the Minister has ‘called in’ a permit application related to a wind energy facility, a permit may be issued with conditions that require matters to be done to the Minister’s satisfaction. For example, additional reports or amended plans may be required to be submitted to the Minister for further approval. This would occur as a condition of permit issued under s97F of the *Planning and Environment Act 1987*.

In contrast, where the permit application has not been ‘called in’ by the Minister and a permit is issued that contains a condition requiring the submission of additional information, responsibility for assessing and approving the information rests with the local council.

4.11 Enforcement of planning scheme and planning permits

Section 13(a) of the *Planning and Environment Act 1987* states that enforcement responsibilities rest with the local council, unless the planning scheme specifies another person as the responsibility authority. As such, a local council has primary responsibility for enforcement of the planning scheme and permit conditions, regardless of whether a wind energy facility permit was issued by the Minister.

This also applies to permits issued for wind energy facilities where the permit application had been ‘called in’ by the Minister.

In summary, regardless of whether a permit is granted by the Minister as responsible authority or by the Minister after a ‘call in’ from the responsible authority, the local council is responsible for enforcement.



GLOSSARY

UNITS

W	Watt—a unit of power The power generation capacity of a wind generator is measured in watts
Wh	Watt-hour—a unit of energy The amount of electricity a wind energy facility generates is measured in watt-hours
t	Tonne—a unit of mass 1 Tonne = 1000 kilograms
m	Metre
s	Second (time)

PREFIXES

K	kilo 10 ³
M	mega 10 ⁶
G	giga 10 ⁹

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