



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

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

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Premier's statement



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The Bracks Government is committed to facilitating the development of a sustainable, secure and affordable energy supply for all Victorians. This goal will be the key to driving economic, social and environmental prosperity for the State now, and well into the future.

Renewable energy, and wind energy in particular, will be critical in achieving our goals for this sustainable future. The wind in Victoria is a very valuable resource, and one that will help us to 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. We owe it to current and future generations of Victorians to ensure that we utilise this resource in the best way possible.

The challenge is to ensure that we develop Victoria's wind resource in a way that appropriately balances environmental, economic and social factors.

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

This document is intended to give proponents, authorities and the Victorian community guidance in assessing the merits and impacts of wind energy proposals. The *Policy and planning guidelines for development of wind energy facilities in Victoria* will be implemented through the planning system and will ensure a consistent approach to the development of wind energy facilities throughout the State.

A handwritten signature in blue ink that reads "Steve Bracks".

STEVE BRACKS MP

Premier of Victoria



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.

SECTION 1: Introduction



PURPOSE

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

The *Guidelines* outline:

- > the Government's overall policy with respect to wind energy development;
- > the role of wind energy projects in achieving a sustainable energy future for Victoria;
- > the State assessment mechanism for wind energy projects 30 MW or greater;
- > a planning framework for the consideration of wind energy projects which will ensure a consistent and balanced approach to assessment across the State; and
- > the Government support available to assist wind energy proponents in the development of appropriate wind energy projects.

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).

SUMMARY OF CONTENTS

SECTION 1

Outlines the purpose of the *Guidelines* and summarises the Government's Policy with respect to wind energy development in Victoria.

SECTION 2

Describes the role that wind energy will play in achieving a sustainable energy future for Victoria, and the need for a balanced approach for appropriate wind energy development.

SECTION 3

Outlines the range of advice and support that the Victorian Government offers to communities, local government decision makers and wind development proponents.

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.

SECTION 5

Contains information about calculating the greenhouse benefits of wind energy developments and helpful links and references for further information.

RENEWABLE ENERGY POLICY STATEMENT

Growing Victoria Together outlines the Victorian Government's strong commitment to sustainable development. Providing secure, reliable and affordable energy for current and future generations of Victorians in a way that reduces greenhouse gas emissions is central to achieving sustainable development.

The State Government has an important role in ensuring proper planning for Victoria's future energy needs.

Consistent with the Government's greenhouse and sustainable development objectives, the Government will seek to diversify Victoria's energy sources. Renewable energy will make an important contribution to meeting our future energy needs.

Appropriate standards for wind energy facilities will ensure balanced assessment of the economic, social and environmental costs and benefits of wind energy developments.

The Victorian Government will support the development of renewable energy in general, and wind energy in particular, through the following listed measures.

AN EFFECTIVE MANDATORY RENEWABLE ENERGY TARGET

Victoria supports an increase in the Commonwealth Government's Mandatory Renewable Energy Target (MRET).

A RENEWABLE ENERGY STRATEGY FOR VICTORIA

As part of the development of a long-term energy policy for Victoria, a Renewable Energy Strategy is being developed to address the barriers to renewable energy investment and identify measures to facilitate the further growth of the industry.

The strategy will seek to maximise the benefits to the community of renewable energy including the potential to stimulate innovation and new employment throughout Victoria.



CONSISTENT AND STREAMLINED ASSESSMENT PROCESS

The Minister for Planning will be the responsible authority for all wind energy proposals that are 30 MW or greater. This recognises the fact that large-scale wind energy facilities are a new form of development in Victoria and that projects of State significance require timely and expert assessment.

STATE PLANNING POLICY FOR RENEWABLE ENERGY

The Government's overall policy on renewable energy will be implemented by the establishment of the State Planning Policy for Renewable Energy outlined in this document. The State Planning Policy provides a consistent basis for the assessment of renewable energy projects by all responsible authorities.

PLANNING GUIDELINES FOR WIND ENERGY FACILITIES

The State Planning Policy for Renewable Energy is supported by the planning guidelines outlined in this document. The guidelines provide the framework and criteria for the balanced assessment of wind energy projects throughout the State.

A CENTRAL POINT OF CONTACT WITHIN GOVERNMENT

The Sustainable Energy Authority provides a central point of contact within Government for wind energy developers, local government and the community.

The Sustainable Energy Authority will improve the quality of publicly available data on Victoria's wind resource and facilitate access across Government for investors in wind energy developments.

IMPROVING DATA ON VICTORIA'S RENEWABLE RESOURCES

The Sustainable Energy Authority is currently updating data on the State's wind resources to provide further assistance in strategic planning for Victoria's wind energy industry. Data will be made available in the form of strategic level mapping for all municipalities with priority given to coastal areas.

The Sustainable Energy Authority is also assessing the nature of the biomass, micro hydro, wave and tidal resources in Victoria.

LOCATING WIND ENERGY FACILITIES

Wind energy facilities will only be excluded from land reserved under the *National Parks Act (1975)*. Wind energy developments in all other areas will be subject to the assessment and approval of the relevant Minister, consistent with the *Guidelines*.



SECTION 2: Wind energy in Victoria

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This section describes the vital role that wind energy will play in achieving a sustainable energy future for Victoria, and outlines the Government's commitment to stimulate the growth of wind energy in the State.

A SUSTAINABLE ENERGY FUTURE

Access to affordable and reliable sources of energy underpins Victoria's economic and social development. Our transport and communication systems, food production, manufacturing and service sectors all depend on the availability of energy.

Energy used in Victoria comes from a range of sources, some of which are more sustainable than others.

The Victorian Government is committed to achieving a more diversified and sustainable energy future for all Victorians by:

- > implementing cost-effective measures to reduce energy demand;
- > maximising the contribution of renewable energy to meeting future energy needs; and
- > implementing a long-term program to reduce greenhouse gas emissions related to Victoria's energy supply.

REDUCING ENERGY DEMAND

The Victorian Government is implementing a wide range of measures designed to reduce energy demand by lowering energy consumption and making energy use more efficient. Examples of these measures include:

- > the establishment of the Sustainable Energy Authority in 2000 to work across the community, business and government to conserve energy and increase energy efficiency;
- > the introduction of new building regulations requiring a 5 Star energy rating for all new dwellings after May 2004;
- > setting a target of reducing energy consumption within government departments and agencies by 15% by 2005;
- > ensuring that all major project developments in Victoria incorporate high levels of energy efficiency; and
- > the reduction of transport emissions through public transport improvements and promotion; support for alternative fuels and vehicle technologies; and initiating travel behaviour change programs.



MEETING FUTURE ENERGY NEEDS

The development of renewable energy is part of a strategy to maintain a range of options by which Victoria is able to meet its future energy needs.

As the Victorian economy grows, electricity consumption is projected to increase by over 15% by the year 2010. As consumption increases beyond the current capacity to supply, Victorians will need to make decisions about where their energy is to come from.

Increasing the diversity of Victoria's energy supply through the growth of renewable energy will progressively reduce exposure to the risks inherent in relying on a narrow range of energy resources.

Whilst fossil fuels are likely to remain a cornerstone of Victoria's energy production for many decades, increasing the proportion of energy from renewable sources is part of a balanced energy strategy.

Wind energy facilities have the potential to meet a significant proportion of Victoria's growth in electricity consumption over the next ten years.

In addition to encouraging appropriate wind energy developments, the Victorian Government is actively supporting the development and use of other forms of renewable energy through a range of measures delivered by the Sustainable Energy Authority including:

- > the purchase of a minimum of 5% of the Government's electricity from Green Power;
- > providing financial support to encourage the installation of solar water heaters;
- > supporting the development of other renewable energy sources through the Renewable Energy Support Fund; and
- > providing support for the Commonwealth Government's Photovoltaic (solar electric) Rebate Program.

REDUCING GREENHOUSE GAS EMISSIONS

The *Victorian Greenhouse Strategy* released in June 2002 outlines the Government's commitment to the reduction of greenhouse gas emissions.

From 1990 to 1999 Victoria's greenhouse gas emissions grew by 15.9%. Victoria's share of total national emissions increased from 19.7% in 1990 to 21.3% in 1999, with over half of the emissions resulting from electricity generation.

More than 95% of Victoria's electricity comes from the combustion of brown coal in the Latrobe Valley. The abundance and availability of this fossil-fuel resource enables Victorians to enjoy low energy prices. However electricity generated from brown coal is particularly greenhouse gas intensive and when the environmental impacts are taken into consideration the real costs are much higher.

The Victorian Government is committed to working with the electricity industry to reduce the greenhouse gas emissions from brown coal generation. It actively supports the Cooperative Research Centre (CRC) for Clean Power from Lignite, which aims to develop and commercialise new technologies to significantly improve efficiency and reduce greenhouse gas emissions from brown coal-fired generators.

In addition to sustainable energy initiatives, the *Victorian Greenhouse Strategy* contains a range of other measures to reduce greenhouse gas emissions.

These measures include:

- > legislation requiring electricity retailers to report greenhouse gas information on electricity bills;
- > establishment of a Community Action Fund to support community-based greenhouse abatement projects;
- > the establishment of a Centre for Energy and Greenhouse Technologies;
- > support for council participation in greenhouse abatement activities;
- > introduction of new greenhouse requirements for industries licensed with Works Approvals under the State Environment Protection Policy;
- > improving management of methane emissions from waste water and land fill sites;
- > delivery of carbon sequestration benefits through the Growing Victoria's Greenhouse Sinks Program; and
- > research into climate change impacts and adaptation.

Wind energy will help Victoria meet its future energy needs without producing the emissions which contribute to climate change. A 10 MW wind energy facility will displace approximately 40 000 tonnes of greenhouse gas emissions per annum.

EMPLOYMENT AND REGIONAL DEVELOPMENT FROM WIND ENERGY

The Victorian Government is committed to supporting industries that can provide significant employment and regional development benefits for the State. 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% in the next 20 years, with a significant proportion of the growth in the Asian region.

The construction of wind energy facilities provides employment in the areas of engineering and steel tower fabrication. Installation creates between 0.5 and 0.8 jobs per MW. As an example, the development of 450 MW of wind energy facilities would provide between 75 and 120 jobs in the construction phase.

There is also scope to expand the manufacturing base in Victoria to build components including blades and turbines. The development of such an industry has the potential to attract substantial investment to regional areas as this is generally where the best wind resources are located. A thriving manufacturing industry will provide opportunities for significant employment growth.

The local sourcing and fabrication of components will build local capacity and is encouraged under the Government's commitment to the development of sustainable industries in Victoria.

As the wind energy industry develops in the Asian region, there will be an increasing need for expertise in the design and installation of wind energy facilities. 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.



THE IMPORTANCE OF LOCATION

Victoria's electricity supply system is owned and operated by the private sector. This private investment plays a vital role in ensuring that all Victorians continue to have access to a secure, sustainable and affordable electricity supply. In order for the State to meet its goals for growth in renewable energy, the private sector will need to invest in that industry. One of the goals of these *Guidelines* is to create an environment in Victoria that will attract this private investment.

Governments around the world are putting in place policy settings to facilitate the growth of the renewable energy industry. In Australia, the most notable policy to date is the Commonwealth's Mandatory Renewable Energy Target (MRET). Under MRET, all Australian electricity retailers and other large buyers of electricity are required to source a minimum proportion of their electricity from renewable sources by 2010. This policy aims to substantially increase the demand for energy from renewable sources such as wind.

In addition, an increasing number of consumers are willing to pay extra to purchase Green Power. This guarantees that the equivalent amount of electricity to that consumed, is sourced from accredited renewable energy generators by the electricity retailer. This program is also fuelling growth in the demand for wind energy in Australia.

In combination with Victoria's good wind resources and existing electricity infrastructure, the drivers to renewable energy investment such as Green Power make wind energy an increasingly attractive form of renewable energy development in the State. However, the attractiveness of Victoria as a location for investment in wind energy is highly dependent on access to Victoria's good wind resources.

An assessment of the location of Victoria's wind resources undertaken in 1991, predicted that the windiest locations would be found on the west and central coast of Victoria. Inland, highly localised topographic effects may provide some additional opportunities for wind energy developments.

Across Victoria, local topographic conditions can have a significant effect on wind speed, with minor changes in location resulting in major variations in speed. Wind speed in turn 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.

For Victoria to meet its goals for renewable energy development, wind energy facility proponents will need to have access to sites with good wind resources.

BALANCED WIND ENERGY DEVELOPMENT

Wind energy projects are a unique form of development in that they affect not only the local community, but also the entire State, and indeed, the nation. Assessing wind energy developments therefore requires careful balancing of the impacts. Appropriate consideration needs to be given to the broader benefits of wind energy and the harnessing of commercially driven development opportunities, whilst at the same time, putting in place appropriate standards to protect critical environmental values and recognise local issues.

The benefits of wind energy facilities, in terms of renewable energy in particular, but also in relation to employment and regional development, have been outlined; especially with respect to the role wind energy can play in achieving Government policy objectives. A balanced assessment of wind energy proposals requires that these benefits be weighed against any possible negative effects on recognised environmental and cultural values. These issues are discussed in turn below.

EXCLUSIONS

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, commercial development is strictly limited in these areas. Under this policy, commercial wind energy developments will not be permitted on any land reserved under the *National Parks Act (1975)*.

Excluding commercial wind energy development from land protected under the National Parks Act excludes wind energy facilities from approximately 43% of the length of Victoria's coastline. It also excludes development from approximately 32% of the area within 1 km of the coast.

PROTECTING CRITICAL VALUES

Environmental values

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

The Commonwealth *Environment Protection and Biodiversity Conservation Act (1999)* provides for the protection of matters of National Environmental Significance, including nationally threatened species and Ramsar wetlands.

In Victoria, the *Flora and Fauna Guarantee Act (1988)* provides protection for species and ecosystems which are of statewide importance. National Parks and Reserves provide protection for over 68% of Victoria's protected flora and 91% of Victoria's protected fauna, and so substantial protection will be afforded to flora and fauna by the exclusion of wind energy facilities from land protected under the *National Parks Act (1975)*.



However, important areas of habitat for these species exist on private land that may be subject to wind energy development proposals. Consistent with the Net Gain principle outlined in Victoria's Vegetation Management Framework, losses of native vegetation and habitat as a result of the siting of turbines and associated infrastructure should be more than offset by commensurate gains through revegetation. Importantly the losses and gains should be matched in terms of both the quality and quantity of the native vegetation.

International experience in Europe and the USA shows that the level of bird mortality associated with modern wind energy facilities is not significant. Nevertheless, the likelihood of any risk to protected bird species needs to be carefully assessed and adaptive management applied.

Aboriginal heritage values

Wind energy facilities and associated infrastructure have the potential to impact on Aboriginal heritage values. These values may occur across a range of locations in Victoria and are protected from disturbance under the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act (1984)* and the State *Archeological and Aboriginal Relics Preservation Act (1972)*. It is important that any impacts and the views of relevant Aboriginal groups are considered in the early planning stages of any project.

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

Landscape values

The landscape value of a site or location is highly subjective.

Whilst National Parks are established primarily for the conservation and protection of environmental values, they also protect some of Victoria's most significant landscapes, including many along the coast.

Other landscapes may also be valued by the community for their scenic and recreational value. Within the existing planning system, Significant Landscape Overlays provide the opportunity to identify landscapes considered to be of critical value. The existence of a Significant Landscape Overlay ensures an appropriate level of consideration in decision making.

In addition to this existing planning tool, these *Guidelines* outline impact mitigation measures to help minimise the visual impact of wind energy facilities on a landscape through sensitive design. These are detailed in Section 4.

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.



SECTION 3:

Government support for wind energy facility development



In order to facilitate appropriate wind energy development, the Victorian Government provides a range of advice and support to communities, local government decision makers and wind development proponents. Ensuring all parties have access to relevant information and advice will help support balanced outcomes which benefit all Victorians.

A range of different government agencies provide this assistance and support. This section outlines the various roles that these agencies play.

SUSTAINABLE ENERGY AUTHORITY VICTORIA (SEAV)

www.seav.vic.gov.au

1300 363 744

The objective of the Sustainable Energy Authority Victoria (SEAV) is to accelerate progress towards a sustainable energy future. The Authority aims to bring together the best available knowledge and expertise to support communities and businesses to implement sustainable energy projects.

SEAV is the central Victorian Government contact for wind energy facility developments.

SEAV's roles include:

- > facilitator and coordinator of information and networks with areas of specialist expertise in government and other relevant organisations;
- > coordinator of the *Victorian Greenhouse Strategy* initiative to develop a wind resource map for Victoria;
- > custodian of a range of relevant standards and guidelines relevant to wind energy facility developments;
- > provider of technical support; and
- > member of the National Green Power Accreditation Steering Group and active promoter of Green Power in Victoria.

The Victorian Government established SEAV, to support and facilitate the development and use of sustainable energy options with the aim of achieving environmental and economic benefits for the Victorian community.

DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT (DSE)

www.dse.vic.gov.au

The Department of Sustainability and Environment (DSE) oversees Victoria's planning and environment assessment systems. Enquiries about planning and environment assessment processes for wind energy development should be made in the first instance to the relevant regional office of DSE. Planning scheme information is available from www.doi.vic.gov.au/planningschemes. Council contact details are available from www.dvc.vic.gov.au/localgov.htm where 'Victorian Local Governments' should be opened.

DSE is also responsible for the integrated management of Victoria's natural resource base, including land identification, resource development and utilisation and the protection, conservation and management of Victoria's natural environment. DSE is able to provide advice and further details about the appropriate flora and fauna survey requirements.

See Appendix 2 for contact details of the DSE regional offices.

DEPARTMENT OF INNOVATION, INDUSTRY AND REGIONAL DEVELOPMENT PROGRAMS (IIRD)

www.iird.vic.gov.au

13 22 60 within Victoria or 1800 655 142 within Australia

The Department of Innovation, Industry and Regional Development (IIRD) is responsible for encouraging business growth, securing investment, promoting exports and creating employment in Victoria.

Industry, investment and business assistance programs are delivered by the Department. With offices across the State and in key cities overseas, IIRD serves as an important point of contact between industry and the Victorian Government. For wind energy facility developments, the Sustainable Energy Authority will coordinate the networks with IIRD.

The Department has a pivotal role in building a development climate that attracts investors and in which businesses and communities can prosper and build for continuing success. It works in partnership with business, other levels of government and the community to maximise Victoria's capacity for economic and social growth.

ENVIRONMENT CONSERVATION COUNCIL (ECC)

www.nre.vic.gov.au/ecc

The Environment Conservation Council (ECC) advises the Victorian Government on the use of public land. It investigates issues at the request of the Minister, and in doing so, takes into account resource use and social issues as well as environmental needs. The ECCs aim is to balance the competing needs of the environment and public land (and water) users, in order to achieve ecologically sustainable and economically viable public land use.

ESSENTIAL SERVICES COMMISSION (ESC)

www.esc.vic.gov.au

(03) 9651 0222

The Essential Services Commission (ESC) is an independent economic regulator established by the Victorian Parliament to:

- > facilitate market entry;
- > promote competitive market conduct;
- > prevent misuse of monopoly or market power;
- > promote efficiency in regulated industries; and
- > ensure that users and consumers benefit from competition and efficiency.

The ESC has a role to assist in the resolution of disputes between distribution network service providers and wind energy facility developers.

SECTION 4:

Planning framework for wind energy facility proposals



This section implements the Government's intention to provide a clear decision making framework that balances environmental, economic and social issues.

A CLEAR DECISION MAKING FRAMEWORK

In recognition of the significance of wind energy facilities, and to assist this emerging industry, the Minister for Planning is responsible for assessing all proposals that are 30 MW or greater.

In addition, all planning schemes include provisions to assist decision making on proposals for wind energy facilities. These provisions include:

- > a definition for a wind energy facility;
- > a State Planning Policy on wind energy facilities in the context of Victoria's renewable energy objectives;
- > requirements for planning permit applications; and
- > removal of planning permit requirements for anemometer masts.

Planning and responsible authorities will be required to take into account the *Policy and planning guidelines for development of wind energy facilities in Victoria, 2002*, in their decision making.

WIND ENERGY FACILITY DEFINITION

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

Currently, a wind energy facility typically comprises a series of wind turbines, a substation, cabling (to connect the wind turbines and substation to the electricity grid), wind monitoring equipment and temporary or permanent access tracks. The wind turbines used in commercial wind energy facilities are generally large, slowly rotating, 3-bladed machines that typically produce between 1 MW and 2 MW of 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 50 metres in height or more. As technology develops, other forms of turbines may be proposed.

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.

An anemometer, which is a device used to measure the wind speed and wind direction on a site, is not a wind energy facility. An anemometer mast may be erected on a site for up to 36 months to monitor the suitability of the wind resource for a potential wind energy facility.

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 utility installation.

STATE PLANNING POLICY

The State Planning Policy Framework in all planning schemes includes the following policy statement regarding renewable energy. Particular reference is made to wind energy development.

RENEWABLE ENERGY

Objective

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

General implementation

Energy underpins the economy and quality of life of all Victorians. The Government is committed to achieving a more sustainable energy future for all Victorians by:

- > contributing to national and international efforts to reduce greenhouse gas emissions by reducing the long-term dependency on energy from fossil fuels;
- > increasing the security and diversity of Victoria's energy supply by increasing the proportion supplied from renewable sources including wind energy; and
- > encouraging and supporting the development of sustainable industries.

Planning should contribute to the provision of renewable energy by facilitating wind energy development in appropriate locations. In particular, planning should:

- > facilitate a consistent approach to the consideration of wind energy development proposals;
- > recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds; and
- > consider the economic and environmental benefits to the broader community of renewable energy generation and the effects on the local environment and landscape.

In planning for wind energy facilities, planning and responsible authorities must take into account the *Policy and planning guidelines for wind energy facilities in Victoria*, 2002.

WHERE A WIND ENERGY FACILITY MAY BE CONSTRUCTED

A permit may be granted for a wind energy facility on any land except for land reserved under the *National Parks Act (1975)*.



THE PLANNING PERMIT APPLICATION PROCESS

A planning permit is required to use and develop land for a wind energy facility. The local council can advise which planning scheme provisions apply to the land. Planning schemes, zoning and overlay information can also be obtained at www.doi.vic.gov.au/planning

The planning permit procedure is provided for in the *Planning and Environment Act (1987)*. Detailed information about this procedure can be found in Chapter 3 of *Using Victoria's Planning System* (Department of Infrastructure, 2001). Visit www.doi.vic.gov.au/planning and access the 'Planning Publications' link.

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

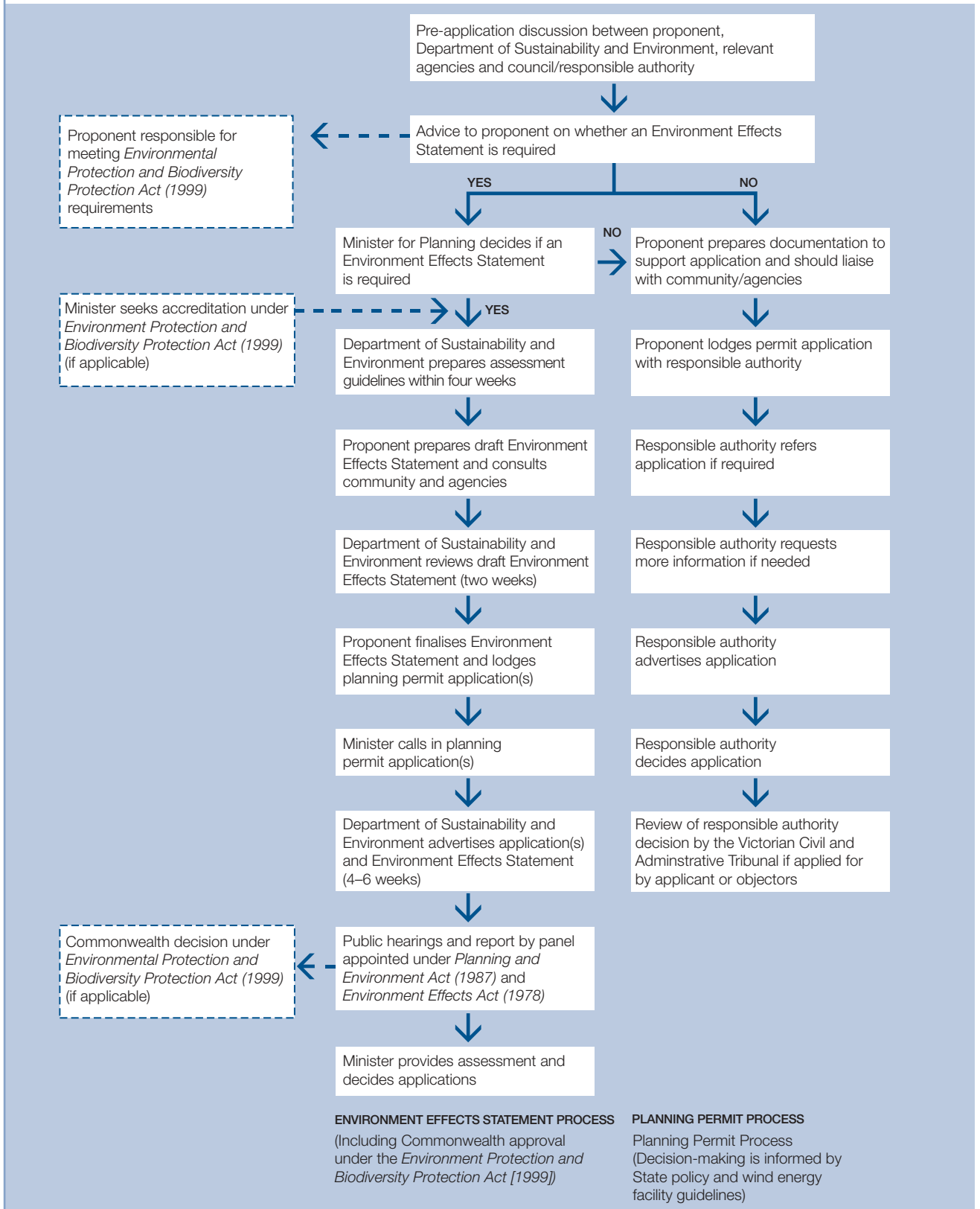
- > the Minister for Planning is the responsible authority for proposals that are 30 MW or greater;
- > in the event that a single project requires a number of permits that are 30 MW or greater when combined, it can be anticipated that the Minister would call-in the proposals in order to coordinate decision making; and
- > for projects less than 30 MW the local council is the responsible authority.

The Minister for Planning is also responsible for administering the *Environment Effects Act (1978)* and for deciding whether an Environment Effects Statement (EES) is required under this Act. There are a number of criteria for determining whether an EES is required.

It is anticipated, however, that most wind energy facilities can be adequately assessed, using these *Guidelines*, through processes under the *Planning and Environment Act (1987)*.

A proposal may also need to be assessed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act (1999)*, where the proposal is an action that is likely to have a significant impact on Matters of National Environmental Significance, for example, Ramsar sites. A proponent is responsible for referring a proposal to Environment Australia in order to determine whether Commonwealth approval is required.

THE ASSESSMENT PROCESS FLOWCHART FOR A WIND ENERGY FACILITY:





PREPARING AN APPLICATION FOR A WIND ENERGY FACILITY

This flowchart outlines the steps for preparing an application for a wind energy facility.

<p>1 Pre-application discussions</p>	<p>Talk to the responsible authority to find out:</p> <ul style="list-style-type: none"> > 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); > who may be affected by the proposal; and > information required to accompany the application. <p>Talk to the Department for Sustainability and Environment to find out if the proposal should be referred to the Minister for Planning to determine whether an Environment Effects Statement will be required.</p> <p>Talk to Environment Australia (the Commonwealth Department of Environment and Heritage) 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.</p> <p>Talk to surrounding land owners about the proposal and issues of importance to them.</p>
<p>2 Seek expert advice</p>	<p>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.</p>
<p>3 Prepare the site analysis</p>	<p>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.</p> <p>The information requirements for a site analysis for a wind energy facility are set out in the following section of these <i>Guidelines</i>. If the site will also be used for other purposes, such as agriculture, the site analysis should include information about this.</p>
<p>4 Prepare the application</p>	<p>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 <i>Guidelines</i>.</p>

APPLICATION REQUIREMENTS

The 'Particular Provisions' in all planning schemes outline information which must accompany an application for a wind energy facility. The following provides assistance to applicants regarding matters that should be addressed to meet those requirements. The level of information required to be provided by proponents will vary depending on the scale of the proposal.

<p>A site analysis</p>	<p>The site analysis may use a site plan, photographs or other techniques to accurately describe:</p> <ul style="list-style-type: none"> > In relation to the site: <ul style="list-style-type: none"> ~ 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 <i>Flora and Fauna Guarantee Act (1988)</i>(FFG Act) and <i>Environment Protection and Biodiversity Conservation Act (1999)</i> (EPBC Act); ~ sites of cultural heritage significance; ~ wind characteristics; and ~ any other notable features or characteristics of the site. > In relation to the surrounding area: <ul style="list-style-type: none"> ~ 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 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; and ~ any other notable features or characteristics of the area.
<p>Three copies of a location plan showing:</p>	<ul style="list-style-type: none"> > The full site area. > Local electricity grid. > Access roads to the site and contours.
<p>Three copies of a plan of the development comprising:</p>	<ul style="list-style-type: none"> > Detailed plans of the proposed development showing: <ul style="list-style-type: none"> ~ the layout of the wind turbine generators and associated buildings and works; ~ proposed connections to the electricity grid; and ~ access roads on the site. > Photomontages or other visual simulations showing the appearance of the development in the context of the surrounding area and from key view points. > A rehabilitation plan for the site, including plans for revegetation and regeneration works.



<p>A written report comprising</p>	<ul style="list-style-type: none"> > A description of the proposal, including: <ul style="list-style-type: none"> ~ the number, location and specifications of the wind generator turbines; ~ the amount of electricity to be exported from the site; ~ expected greenhouse gas savings; ~ infrastructure requirements including electricity grid connections; and ~ traffic movements. > A design response that explains how the proposed design derives from and responds to the site analysis. > 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 impact of the proposal on any avifauna listed under the FFG or EPBC Acts. > An assessment of the noise impact of the proposal on existing dwellings prepared in accordance with New Zealand Standard <i>NZ6808:1998, Acoustics—The Assessment and Measurement of Sound from Wind Turbine Generators</i>. > An explanation of why the site is suitable for the wind energy facility having regard to: <ul style="list-style-type: none"> ~ 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 and minimising greenhouse gas 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 km radius of an airfield; and ~ the cumulative effects of the proposal having regard to other existing or proposed wind energy facilities in the area. <p>The report may include plans, drawings, photographs and other documents</p>
<p>Environmental Management Plan</p>	<ul style="list-style-type: none"> > 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: <ul style="list-style-type: none"> ~ principles of environmental management; ~ environmental mitigation measures; ~ standards to be met; ~ monitoring requirements; ~ decommissioning and rehabilitation requirements; and ~ post construction adaptive management measures where monitoring shows significant impacts of FFG and EPBC Act listed species.

ASSESSING WIND ENERGY FACILITY PROPOSALS

The State Government is committed to the development of wind energy facilities in Victoria. 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)*.

Preferred locations for wind energy facilities may be focussed on sites that possess localised superior wind conditions. The wind turbines used to generate electricity can have significant visual, environmental and amenity impacts depending on their location.

Planning can contribute to the provision of renewable energy by facilitating wind energy development in appropriate locations in a manner that appropriately balances their environmental, social and economic benefits with any demonstrated visual, environmental and amenity impacts.

In order to facilitate a viable wind energy industry, planning applications need to include sufficient information and explanation to allow responsible authorities to come to sound and timely decisions.

The following guidelines should assist proponents in the design and siting of proposed wind energy facilities and in preparing planning permit applications. The guidelines provide responsible authorities with assistance for the assessment of wind energy facilities. Some potential impact reduction measures specific to wind energy facilities are suggested in the guidelines. The impact reduction measures are not mandatory and will be influenced by local circumstances.

Responsible authorities should endeavour to balance environmental, social and economic matters in favour of net community benefit and sustainable development.



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

Growing Victoria Together identifies the Victorian Government’s commitment to encourage the development of renewable energy as an important action in support of sustainable development.

Under the *Victorian Greenhouse Strategy (2002)*, support for renewable energy is also identified as a significant positive contribution to reducing the State’s greenhouse gas emissions.

In the assessment of wind energy projects key consideration should therefore be given to the extent to which the proposal contributes to:

- > national and international efforts to reduce Australia’s greenhouse gas emissions to 108% of 1990 levels by 2012;
- > efforts to maximise the State’s share of the renewable energy generation required nationally under the Commonwealth’s Mandatory Renewable Energy Target (MRET);
- > increasing the security and diversity of Victoria’s energy supply by increasing the proportion supplied from renewable sources including wind energy;
- > encouraging and supporting the development of sustainable industries; and
- > the economic and employment benefits of renewable energy generation to Victoria.

Evaluation

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

2 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 Significant Landscape Overlay; 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 removal or planting of vegetation; and
- > the location and scale of other buildings and works including transmission lines.

The features of the landscape include:

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

Evaluation

Wind energy facilities will usually have some 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 subjected to an Environmental Significance Overlay, Vegetation Protection Overlay or a Significant Landscape Overlay in 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.



Impact reduction considerations

The following measures may be considered as appropriate:

- > 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 the coastline, watercourses, windbreaks or transmission lines;
- > using techniques such as colour, painting, etc. to reduce visual impacts from key vantage points;
- > 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
- > minimising 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

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

(b) Blade glint

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

Evaluation

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 potential 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

The shadow flicker experienced at any dwelling in the surrounding 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

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. Consultation with the Civil Aviation Safety Authority is necessary to determine any airfields within a 30 km radius and associated requirements.

Evaluation

Turbines should not protrude into any obstacle limitation surface for any airfield. The Civil Aviation Safety Authority (CASA) should be consulted.



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*.

Appropriate surveys will be required where species listed under the *EPBC Act* or the *FFG Act* are considered reasonably likely to be present on the site:

- > Where the proposal is a controlled action under the *EPBC Act*, Environment Australia will determine the flora and fauna surveys needed to address those species listed under the Act.
- > Where species are listed under the *FFG Act*, surveys are to be conducted at the appropriate time within the 12 months preceding the lodging of the planning permit application. The Department of Natural Resources and Environment should be consulted on the timing of the surveys within the 12 month period.
- > Surveys for other species of flora or fauna will not be required, except where the proponent is already required to carry out a flora or fauna survey as a requirement for *EPBC Act* or *FFG Act* species.

These surveys may indicate how the facility can be sited and designed to manage the risk of impact on any such listed species or communities. Ongoing monitoring (for up to two years) may be required as a permit condition. An Environmental Management Plan may provide for the development of reasonable and cost effective steps to minimise any ongoing risks.

Survey work should determine:

- > the species present;
- > whether they are likely to be adversely impacted by the proposed wind energy facility; and
- > appropriate mitigation measures.



As the Victorian economy grows, electricity consumption is projected to increase by over 15% by the year 2010.

A guide to calculating greenhouse benefits of wind energy facility proposals



The following information has been developed by the Sustainable Energy Authority Victoria.

ASSUMPTIONS

The amount of power a wind generator can produce is dependent on the availability and the speed of the wind. The term 'capacity factor' is used to describe the actual output of a wind energy facility as the percentage of time it would be operating at maximum power output. A wind energy facility in Victoria will typically have a capacity factor of 35%.

Computer modelling is generally used to predict the actual output of the wind energy facility. Where available, this figure should be used by developers when determining greenhouse benefits. Where this information is not available, an estimated capacity factor can be used.

For every megawatt hour (MWh) of renewable energy generated, the emission of approximately 1.3 tonnes of carbon dioxide (CO₂) through coal-fired electricity generation is displaced.

The average Victorian household consumes approximately 5.33 MWh of electricity per year, equating to approximately 6.9 tonnes of CO₂ per annum.

ELECTRICITY GENERATED PER YEAR

Generation capacity (MW) x 8760 hours p.a. x capacity factor = Expected output (MWh)

Example: a 10 MW wind energy facility with a capacity factor of 35%.

$10 \times 8760 \times 0.35 = 30\,660$ MWh of electricity generated in a year.

GREENHOUSE GAS EMISSIONS DISPLACED

A formula for calculating the greenhouse benefit of the proposal is:

Expected output (MWh) x 1.3 = Greenhouse gas emissions displaced (tonnes of CO₂)

Using the above example the greenhouse gas emissions displaced can be calculated as follows:

$30\,660 \times 1.3 = 39\,858$ tonnes of CO₂

The proposed wind energy facility would therefore displace approximately 40 000 tonnes of carbon dioxide or greenhouse gas emissions per year.

AVERAGE NUMBER OF HOUSEHOLDS

It is also possible to calculate the average number of households the proposal would supply using the following formula.

Expected output (MWh)/5.33 = Number of households

Using the above example:

$30\,660/5.33 = 5752$ households

The proposed 10 MW wind energy facility could supply enough power to service over 5700 average Victorian households.

NUMBER OF CARS TAKEN OFF THE ROAD

A car with a petrol engine produces approximately 4.33 tonnes of CO₂ emissions per year (Source Greenfleet).

Greenhouse gas emissions displaced (tonnes of CO₂)/4.33 = Number of cars

Using the above example:

$39\,858/4.33 = 9205$ cars

A 10 MW wind energy facility that displaces 39 858 tonnes of CO₂ per annum is the equivalent of taking approximately 9200 cars off the road each year.

EQUIVALENT NUMBER OF TREES THAT WOULD NEED TO BE PLANTED

A model tree can absorb 0.67 tonnes CO₂ (source Greenfleet).

Greenhouse gas emissions displaced (tonnes of CO₂)/0.67 = Number of trees

Using the above example:

$39\,858/0.67 = 59\,489$ trees

39 858 tonnes of CO₂ per annum is the equivalent amount of CO₂ that over 59 000 trees would be able to lock up.

PROPORTION OF VICTORIA'S ELECTRICITY CONSUMPTION

In 1999–2000 Victorian's consumed 37 578 GWh of electricity (Source ESAA).

Expected output (MWh)/37 578 000 x 100 = Proportion of consumption (%)

In the above example the proportion of Victoria's energy consumption from the wind energy facility can be calculated as follows:

$30\,660/37\,578\,000 \times 100 = 0.08\%$

PROPORTION OF MRET

Proportion of MRET 9500 GWh target

Expected output (MWh)/9 500 000 x 100 = Proportion of MRET (%)

Using the above example:

$30\,660/9\,500\,000 \times 100 = 0.3\%$

PROPORTION OF VICTORIA'S PROJECTED ELECTRICITY CONSUMPTION GROWTH

Victoria's energy consumption is predicted to grow at a rate of around 2% per annum. Victoria's peak energy demand is predicted to grow at a higher rate of around 3% per annum.

Victoria's electricity consumption is expected to grow by 750 000 MWh per annum.

Expected output (MWh)/750 000 x 100 = Proportion of expected growth (%)

Using the above example:

$30\,660/750\,000 \times 100 = 4\%$ of expected growth

MANDATORY RENEWABLE ENERGY TARGET—INTERIM TARGETS

YEAR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010–2020
REQUIRED ADDITIONAL GWh	300	1100	1800	2600	3400	4500	5600	6800	8100	9500

APPENDIX 2: Useful contacts

ABORIGINAL AFFAIRS VICTORIA (AAV)

www.dhs.vic.gov.au/aav
(03) 9637 8000

Aboriginal Affairs Victoria (AAV) is the Victorian Government's central point of advice on all aspects of Aboriginal affairs in Victoria. AAV administers legislation that protects Aboriginal cultural heritage in Victoria. This function relies on close cooperation with the various Aboriginal communities around the State. A registry is maintained of sites of significant aboriginal occupation.

AUSTRALIAN WIND ENERGY ASSOCIATION (AusWEA)

www.auswea.com.au
(03) 9249 9641

The Australian Wind Energy Association (AusWEA) mission is to represent the Australian Wind Energy Community and promote the sensitive and appropriate uptake of wind energy. AusWEA have developed *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia*.

CATCHMENT MANAGEMENT AUTHORITIES (CMA)

www.dse.vic.gov.au/vro and go to 'Land and Water Management'.

The primary goal of each Catchment Management Authority (CMA) is to ensure the protection and restoration of land and water resources, the sustainable development of natural resources-based industries and the conservation of natural and cultural heritage. The main issues concerning the CMA with respect to wind energy facilities relate to site access roads which can create erosion and drainage issues.

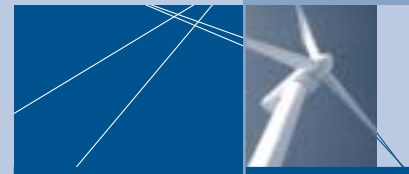
COUNCILS

Information on council contacts is available at the Municipal Association of Victoria's website, www.mav.asn.au

Enquiries about planning scheme provisions and permit processes should be made in the first instance to the responsible authority. If in doubt contact the planning department of the council or the regional office of the Department of Sustainability and Environment.

Council contacts are also available at www.dvc.vic.gov.au/localgov.htm

For planning scheme details visit www.doi.vic.gov.au/planningschemes



DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT (DSE) REGIONAL OFFICES

DSE Customer Service Centre 136 186
Planning Information Centre (03) 9655 8830

Head Office

8 Nicholson Street
East Melbourne VIC 3002
Telephone: (03) 9637 8000
Facsimile: (03) 9637 8148

240–250 Victoria Parade
East Melbourne VIC 3002
Telephone: (03) 9412 4011
Facsimile: (03) 9412 4803

Land Registry

Marland House
Level 12, 570 Bourke Street
Melbourne VIC 3000
Telephone: (03) 8636 2213
Facsimile: (03) 8636 2296

Port Phillip Regional Office

30 Prospect Street
Box Hill VIC 3128
Telephone: (03) 9296 4400
Facsimile: (03) 9890 0075

South West Regional Office

Corner Mair and Doveton Street
Ballarat VIC 3350
Telephone: 136 186

North East Regional Office

35 Sydney Road
Benalla VIC 3672
Telephone: (03) 5761 1611
Facsimile: (03) 5761 1628

North West Regional Office

Cnr Midland Highway
and Taylor Street
Bendigo VIC 3550
Telephone: (03) 5430 4444
Facsimile: (03) 5448 4982

Northern Irrigation Regional Office

Ferguson Road
Tatura VIC 3616
Telephone: (03) 5833 5222
Facsimile: (03) 5833 5299

Gippsland Regional Office

71 Hotham Street
Traralgon VIC 3844
Telephone: (03) 5172 2111
Facsimile: (03) 5172 2100

DEPARTMENT OF INFRASTRUCTURE (DOI) REGIONAL OFFICES

The planning function of DSE will be progressively relocated from the following Department of Infrastructure regional offices to the regional offices of DSE.

METROPOLITAN REGIONAL OFFICES

North West Metropolitan Region

499 Ballarat Road
Sunshine VIC 3020
Telephone: (03) 9313 1302
Facsimile: (03) 9313 1316

South Eastern Metropolitan Region

Level 2, 12 Lakeside Drive
East Burwood VIC 3151
Telephone: (03) 9881 8895
Facsimile: (03) 9881 8820

REGIONAL OFFICES

Eastern Region

120 Kay Street
Traralgon VIC 3840
Telephone: (03) 5172 2677
Facsimile: (03) 51742 799

Northern Region

57 Lansell Street
Bendigo VIC 3550
Telephone: (03) 5434 5150
Facsimile: (03) 5434 5157

North Eastern Region

50–52 Clarke Street
Benalla VIC 3672
Telephone: (03) 5761 1857
Facsimile: (03) 5762 7870

South Western Region

180 Fyans Street
South Geelong VIC 3220
Telephone: (03) 5225 2521
Facsimile: (03) 5225 2514

Western Region

88 Learmonth Road
Wendouree VIC 3355
Telephone: (03) 5333 8790
Facsimile: (03) 5333 8796

Central City and Alpine

Level 12, 80 Collins Street
Melbourne VIC 3000
Telephone: (03) 9655 3368
Facsimile: (03) 9655 336

**ENVIRONMENT PROTECTION AUTHORITY (EPA)**

www.epa.vic.gov.au
(03) 9695 2722

The Environment Protection Authority (EPA) is a statutory body established in response to community concern about pollution. The EPA is the contact for information and standards associated with noise from a wind energy facility.

HERITAGE VICTORIA

www.heritage.vic.gov.au

As an independent statutory authority, the Heritage Council Victoria is the State's main decision-making body on heritage issues. The Victorian Heritage Register is the official listing of heritage places and objects which the Heritage Council has assessed as being of State significance to Victoria. Registration of a site gives it legal protection.

INDUSTRIAL SUPPLIES OFFICE (VICTORIA) LTD (ISO)

www.vicprojects.com.au
(03) 9866 6155

The Industrial Supplies Office (ISO) promotes Victorian/Australian industry through import replacement and opportunities for participation in overseas projects. ISO performs a technical role providing purchasers with a free sourcing service to identify Victorian/Australian manufacturers and service providers capable of supplying those items that would otherwise be imported.

LAND VICTORIA

www.land.vic.gov.au

Land Victoria provides management services and information about who owns land, where it is, what its boundaries are, what it is worth and what can be done with it.

OFFICE OF THE CHIEF ELECTRICAL INSPECTOR (OCEI)

www.ocei.vic.gov.au

The Office of the Chief Electrical Inspector (OCEI) is the independent technical regulator responsible for electrical safety within the State of Victoria.

The Office's responsibilities include:

- > the safety of electricity supply, including generation, transmission and distribution;
- > the electrical safety of the public and the workers involved in these activities; and
- > the safety of electrical installations in industrial premises.

OFFICE OF THE RENEWABLE ENERGY REGULATOR (ORER)

www.orer.gov.au

The Office of the Renewable Energy Regulator (ORER) is a statutory authority established to oversee the implementation of the Government's Mandatory Renewable Energy Target (MRET). In order to create Renewable Energy Certificates (RECs) renewable energy generators must register with the ORER.

PARKS VICTORIA

www.parks.vic.gov.au

Parks Victoria manages the State's network of national, state, regional and metropolitan parks and other conservation reserves. Parks Victoria is dedicated to preserving the natural and heritage values of the parks, bays, and waterways, including full protection of sensitive areas.

VICROADS

www.vicroads.vic.gov.au

VicRoads is responsible for maintaining and improving the condition and performance of Victoria's arterial roads, bridges and major culverts. VicRoads may need to be consulted if the wind energy facility development impacts the highway network. Local council is responsible for minor roads.

VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL (VCAT)

www.vcat.vic.gov.au

Victorian Civil and Administrative Tribunal (VCAT) is the tribunal dealing with a broad range of civil disputes. The Planning and Environment List reviews the decisions of Responsible Authorities and other authorities in relation to the use and/or development of land on application. VCAT will only have influence over the development of a wind energy facility when the decision of a responsible authority is subject to an application for review.

VICTORIAN COASTAL COUNCIL (VCC)

www.vcc.vic.gov.au

The Victorian Coastal Council (VCC) is appointed under the Coastal Management Act 1995 as the peak body for the strategic planning and management of the Victorian coast, and to provide advice to the Minister for the Environment.

The VCC have developed the *Siting and design guidelines for structures on the Victorian coast* and the *Landscape settings types for the Victorian coast*.

APPENDIX 3: Internet links

Australian Business Council for Sustainable Energy

www.bcse.org.au

Australian Greenhouse Office (AGO)

www.greenhouse.gov.au

British Wind Energy Association

www.bwea.com

CADDET Renewable Energy

www.caddet-re.org

Danish Wind Energy Association

www.windpower.org

Electricity Supply Association of Australia

www.esaa.com.au

Environment Australia

www.ea.gov.au

European Wind Energy Association

www.ewea.org

Green Power

www.greenpower.com.au

Growing Victoria Together

www.growingvictoria.vic.gov.au

Land Victoria

www.land.vic.gov.au

National Electricity Market Management Company Ltd (NEMMCO)

www.nemmco.com.au

National Greenhouse Strategy

ngs.greenhouse.gov.au

Renewable Energy Industries Action Agenda

www.industry.gov.au

Renewable Energy Certificates Registry

www.rec-registry.com

United Nations Framework Convention on Climate Change

unfccc.int

Victorian Energy Networks Corporation (VENCorp)

www.vencorp.com.au

Victorian Greenhouse Strategy

www.greenhouse.vic.gov.au



APPENDIX 4:

Useful publications and references

Victorian Legislation and Parliamentary Documents

www.dms.dpc.vic.gov.au

Growing Victoria Together, Victorian Government, 2001

www.growingvictoria.vic.gov.au

Using Victoria's Planning System

www.doi.vic.gov.au/planning

Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, Australian Wind Energy Association, March 2002

Victorian Greenhouse Strategy, Victorian Government, 2002

www.greenhouse.vic.gov.au

Stakeholder management: A Prerequisite for Successful Wind Farm Development and Appendix 1: Developer's Guide to Stakeholders in Victoria, Terry Teoh Murdoch University, January 2000

Guide for Connection of Embedded Generation, Australia EcoGeneration Association, 2002

Guidelines for Renewable Energy Developments—Wind Energy, Energy Efficiency and Conservation Authority, EECA, New Zealand, 1995

RELEVANT LEGISLATION

Commonwealth

Environment Protection and Biodiversity Conservation Act (1999)

Aboriginal and Torres Strait Islander Heritage Protection Act (1984)

Native Title Act (1993)

State

Flora and Fauna Guarantee Act (1998)

National Parks Act (1975)

Coastal Management Act (1995)

Environment Effects Act (1978)

State Archeological and Aboriginal Relics Preservation Act (1972)

Heritage Act (1995)

Planning and Environment Act (1987)

APPENDIX 5: Glossary



Anemometer	A device used to measure wind speed.
Kyoto Protocol	In December 1997, more than 160 nations met in Kyoto, Japan to negotiate binding limitations on greenhouse gases for the developed nations, pursuant to the objectives of the Framework Convention on Climate Change of 1992. The outcome of the meeting was the Kyoto Protocol, in which the developed nations agreed to limit their greenhouse gas emissions, relative to the levels emitted in 1990.
Ramsar sites	Sites designated as internationally important under the Convention on Wetlands signed in Ramsar in 1971.

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



