

FREQUENTLY ASKED QUESTIONS

WHO ASSESSES THE PLANNING PERMIT APPLICATION?

Under Victorian planning law it is the Minister for Planning who considers planning applications for wind farms in Victoria. Prior to 2015 local councils were responsible for assessing planning applications for small wind farm projects, while the Minister for Planning was responsible for assessing planning applications for large wind farms. However, since the introduction of Amendment VC124 (gazetted 2 April 2015), the Minister for Planning has been responsible for assessing all wind farm planning permit applications in the state of Victoria.

HOW IS THE PLANNING PERMIT APPLICATION ASSESSED?

Wind farm planning permit applications are assessed against the provisions of the planning scheme in which they are located. While planning schemes vary from one area to another, all planning schemes contain wind farm specific provisions such as Clause 52.32 and the Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria, and all wind farm planning permit applications are assessed against these provisions. After a planning permit application is lodged with the Minister for Planning, the Minister will consider it and may request more information, approve the permit application, approve the permit application with modifications, or refuse the permit application. This process is often extended and can take years.

HOW LONG WILL IT TAKE TO CONSTRUCT THE WIND FARM?

Once a permit has been issued and financing completed, construction of the wind farm can begin and will take approximately one year. There are three main stages to the construction process, starting with construction of the access tracks, construction pads, foundations and underground cabling. This stage is the busiest and involves the most people and machinery. Stage two sees the turbines delivered and installed using specialised cranes with highly skilled operators. The final stage involves commissioning and testing of the wind farm, and connecting it to the electricity grid so that the export of energy can begin.

WHAT IS A WIND FARM'S LIFE CYCLE?

The typical life cycle of a wind farm is 25 – 30 years. At the end of this period the wind farm is decommissioned, with all above ground structures removed and the site rehabilitated. This process of decommissioning is a condition of the wind farm planning permit and is also part of the agreement between the wind farm and participating landowners.

HOW TALL ARE THE WIND TURBINES?

With every passing year wind turbines are becoming larger. Larger wind turbines are more powerful and more efficient, meaning that we can produce the same amount of power with less turbines, and produce that power more cheaply. The wind turbine models currently on the market have tip heights of between 200 – 270 m and tower heights of between 130 – 180 m. The planning permit application for the Mumblin Wind Farm will be based on a tip height of approximately 252 m and a tower height of approximately 166 m.

WHAT ABOUT THE IMPACT TO THE LANDSCAPE?

We acknowledge that wind farms have an impact on the landscapes in which they are located. However, we also believe that the environmental and economic benefits of wind farms outweigh their impact on the landscape.

Under the provisions of the planning scheme the potential impact of the wind farm on landscape values must be considered as part of the planning process. It is for this reason that a Landscape and Visual Impact Assessment forms part of all new wind farm planning permit applications. The Landscape and Visual Impact Assessment for the



Mumblin Wind Farm contains a series of photomontages that provide a visual representation of the wind farm from various viewpoints which will be made available to local residents at the appropriate time in the planning process.

Following completion of construction, we will offer free landscape screening to all dwellings located within 4 km of a wind turbine to help screen views of the wind farm.

DO WIND TURBINES AFFECT HUMAN HEALTH?

Numerous studies have been conducted into the potential health effects of wind turbines and none of them have found any evidence that wind turbines effect human health. Following a major review of these studies the National Health and Medical Research Council (NHMRC) concluded that there was no evidence that wind farms cause adverse health effects. You can find this NHMRC report via the following link:

<https://www.nhmrc.gov.au/about-us/publications/nhmrc-statement-evidence-wind-farms-and-human-health>

HOW WILL WIND FARM NOISE AFFECT ME?

Wind farms in Victoria are required to comply with strict noise limits. These noise limits are set out in New Zealand Standard NZS6808:2010 Acoustics – Wind Farm Noise, and they are designed to ensure that wind farm noise is not intrusive for the average person. These noise limits form part of the planning permit, meaning the wind farm cannot operate unless it complies with them.

Under the provisions of the planning scheme the potential noise levels of the wind farm must be considered as part of the planning process. It is for this reason that an Environmental Noise Assessment forms part of all new wind farm planning permit applications. The Environmental Noise Assessment for the Swansons Lane Wind Farm will contain modelled noise levels for the wind farm and will be made available to local residents at the appropriate time in the planning process.

Because the experience of sound is subjective each person will experience the noise made by a wind farm in their own unique way. With this in mind our company representatives will consult with residents to provide as much information as possible so you can be best equipped to understand the likely outcome.

WILL WIND TURBINES AFFECT STOCK OR DOMESTIC ANIMALS?

No. Sheep and cattle may take a few days to become familiar with wind turbines, however they quickly become acclimatised and have even been observed rubbing themselves on towers or standing in shade of wind turbines during summer.

DO WIND FARMS KILL BIRDS?

Wind turbines have been found to pose a similar level of risk to birds as telecommunication towers and other tall buildings. Studies also show that wind farms are 17 times less likely to kill birds than fossil-fuels per MW of generation, 400 times less likely than cars, and 1200 times less likely than powerlines. Studies also show that the impact of cats, loss of native habitat, and ecological changes due to climate change on bird species is so much greater that it renders the impact of wind farms marginal. You can find a summary of these studies via the following link: <https://www.sciencedirect.com/science/article/abs/pii/S0301421509001074>. Nonetheless, as part of the planning application process we have to consider the potential impact of the wind farm on threatened, at risk and endangered species to ensure that it will not have a detrimental effect on any of these species.

DOES THE WIND FARM IMPACT CULTURAL HERITAGE?

The planning application will be accompanied by a Cultural Heritage Management Plan (CHMP). All CHMPs in Victoria must be prepared in accordance with the Heritage Act 2006 and Heritage Regulation 2007 and must be prepared by an independent and technically qualified archaeologist in consultation with the local Registered Aboriginal Party.

DO WIND FARMS DECREASE PROPERTY VALUES?

Studies in Australia and overseas have found no measurable correlation between wind farm proximity and property values and that soil quality, access to services and capital improvements remain the major drivers of property value. You can find these studies via the following links:

https://www.valuergeneral.nsw.gov.au/__data/assets/pdf_file/0006/195315/Preliminary_assessment_impact_of_wind_farms_on_surrounding_land_values_in_Australia.pdf and

https://arkenergy.com.au/documents/444/review_of_the_impact_of_wind_farms_on_property_values_urbis_2016_07_21.pdf

IS WIND ENERGY EXPENSIVE?

Wind energy is the cheapest source of new energy generation with wind projects producing each MWh for less than \$60. The cost of combined gas-cycle generation is approximately \$75 per MWh and new coal projects approximately \$130 per MWh. Electricity produced by existing coal fire power stations costs as little as \$40 per MWh, however it is produced using old technology which is increasingly unreliable and damaging to people's health, and as a result the true cost of electricity produced by these old coal fired power stations is much higher.

HOW WILL THE WIND FARM IMPACT LOCAL ROADS?

The wind farm will result in an increase in traffic on local roads during the construction process. However, prior to the commencement of construction the wind farm will have to prepare a traffic management plan which will outline how the wind farm will ensure it causes minimal disruption to other users of local roads. The wind farm will also have to provide a bond to the local road manager and will have to pay for any upgrades required for the delivery of turbine components. Following completion of construction the wind farm will have to repair any damage caused to local roads before it can get its bond back. During the operational phase of the wind farm there will not be a noticeable increase in local traffic, with three or four visits a month required for maintenance purposes.

WHO PAYS FOR ANY ELECTRICITY GRID UPGRADES THAT ARE NEEDED?

The cost of any electricity infrastructure upgrades required to connect the wind farm to the electricity grid will be entirely paid for by the wind farm.

ARE WIND FARMS SUBSIDISED BY THE GOVERNMENT?

The wind farm will not receive any government subsidies and will pay for all costs associated with construction and operation of the wind farm from electricity it produces and sells on the national electricity market.

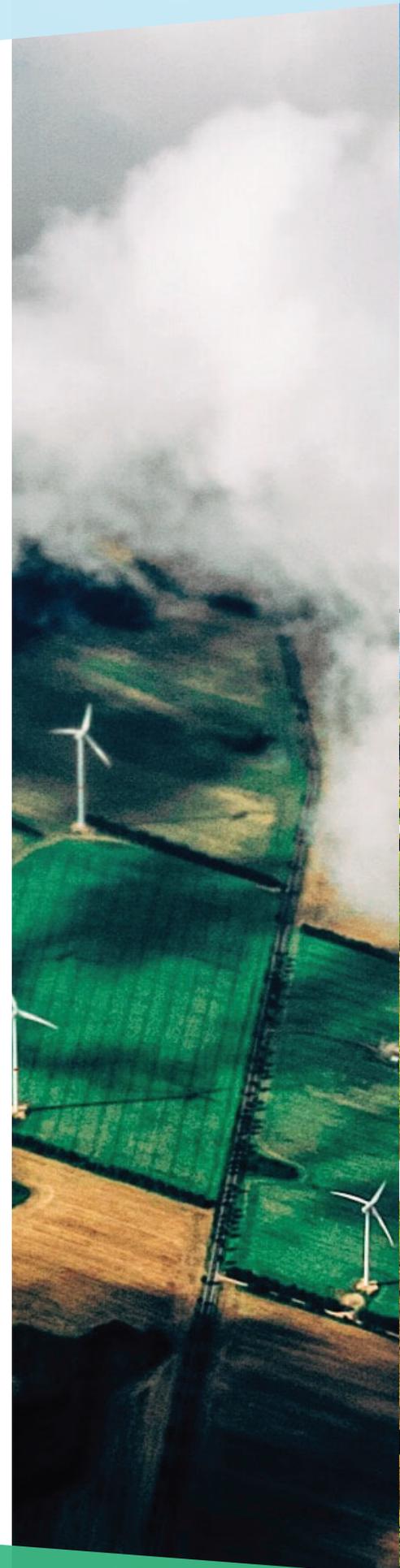
HOW MUCH OF THE WIND TURBINE CAN BE RECYCLED?

The world's largest wind turbine supplier, Vestas, estimates that currently 90% of their wind turbines can be recycled. This includes the tower, nacelle and gearbox. Traditionally, wind turbine blades have not been recycled. Wind turbine blades are made of reinforced fibreglass and, much like fibreglass boats, to date it has not been cost effective to recycle them at the end of their lifecycle. However, it is important to note that one set of wind turbine blades often last for the entire life of a wind farm, meaning they are not regularly disposed of. Moreover, research and development is underway to close this recycling gap and Vestas has announced a net zero waste target by 2040.

HOW MUCH ENERGY IS REQUIRED TO BUILD A WIND TURBINE, AND HOW LONG DOES IT TAKE TO PAY THIS ENERGY BACK?

A lifecycle assessment of a 2 MW wind turbine generator carried out in accordance with the International Standards Organisation lifecycle assessment standard (ISO 14040: Environmental management – life cycle assessment) found that the energy required to construct, decommission and dispose of a wind turbine generator is paid back within 5 months of operation. You can find this study via the following link:

<https://www.ourenergypolicy.org/wp-content/uploads/2014/06/turbines.pdf>



WILL THE WIND FARM AFFECT AVIATION?

Under the provisions of the planning scheme the potential impact of a wind farm on nearby aviation infrastructure and services must be considered as part of the planning process. It is for this reason that an Aviation Impact Assessment forms part of all new wind farm planning permit applications. The Aeronautical Impact Assessment will identify nearby aerodromes and determine whether the wind farm will have a detrimental impact on these aerodromes or any other civil aviation infrastructure or services.

DO WIND FARMS AFFECT AERIAL FIRE-FIREFIGHTING?

According to the CFA Guidelines for Renewable Energy Facilities, the minimum distance separating wind turbines must be at least 300 m in order to ensure that firefighting aircraft can navigate between them. Thus, provided there is a minimum of 300 m separating wind turbines, firefighting aircraft will be able to operate in the area, including in the wind farm itself. All modern wind farms have turbine separation distances of at least 500 m, if not 1000 m.

The CFA guidelines also stipulate that the wind farm operator, upon notification of a fire in the local area, must immediately shut down all wind turbines and place them in the 'Y' position (also known as the rabbit ears position). They must also rotate the turbines so that they are all facing the same direction. This enables pilots to safely fly around the wind farm with the knowledge that the turbines are in the same position.

The emergency management planning requirements specified by fire agencies requires the wind farm operator to be in regular contact during bushfires. This will ensure that any requests by pilots or firefighters will be immediately implemented. An example of this is outlined by the Clean Energy Council where firefighting aircraft were successfully utilised during a bushfire in South Australia within an operating wind farm. You can read about this via the following link:

<https://www.cleanenergycouncil.org.au/news/in-case-of-fire-a-real-life-experience-at-a-wind-farm-site>

DO WIND FARMS IMPACT AERIAL SPRAYING?

Wind farms are compatible with aerial spraying, as evidenced by the fact that wind turbines have been operating right across rural Victoria for a number of years now and aerial agricultural operations have continued around them.

Pilots who conduct aerial spraying regularly operate in the vicinity of a range of hazards, including power lines, communications towers and trees. Prior to each spraying assignment, aerial agricultural operators must complete their own site-specific safety assessment which identifies these hazards and plans their flight around them. Wind turbines are no different to these other obstacles which aerial sprayers need to take into account before they conduct their spraying assignments. Indeed, given their large size and visibility, wind turbines pose a lower risk to aerial agricultural operations than less visible obstacles such as powerlines and communications towers.

It is true that wind turbines produce turbulence in the area downwind of them. However, aerial spraying occurs when little to no wind is present, meaning that any turbulence created by wind turbines while spraying is occurring is minimal. Moreover, other obstacles like shelterbelts and haysheds also create turbulence, and aerial sprayers are accustomed to taking such turbulence into account.

You can see a video of aerial spraying occurring in the vicinity of an operational wind farm via the following link: <https://www.youtube.com/watch?v=TXklTOseduM>. Please note the relevant section of the video starts at approximately 3:10.