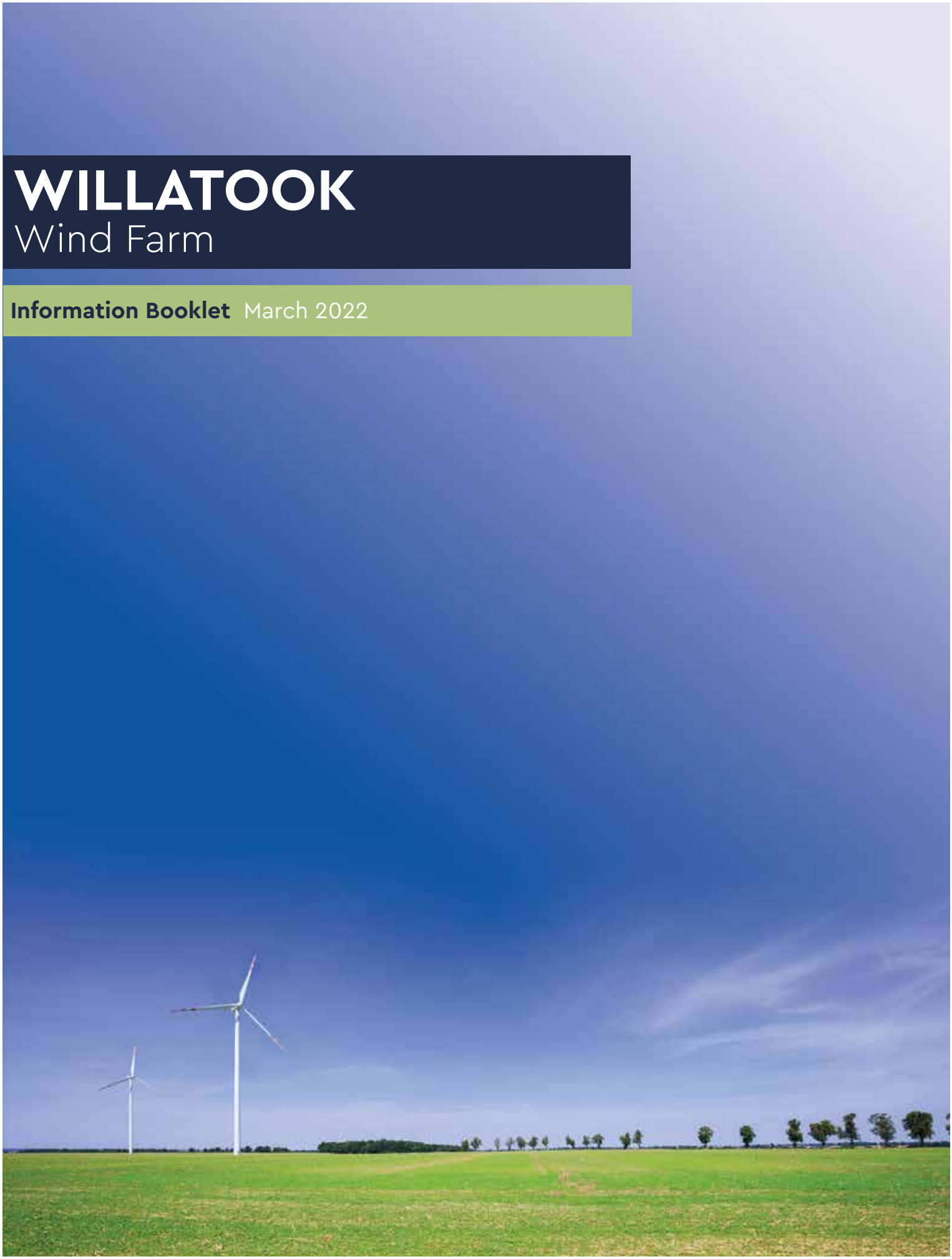
WILLATOOK
Wind Farm

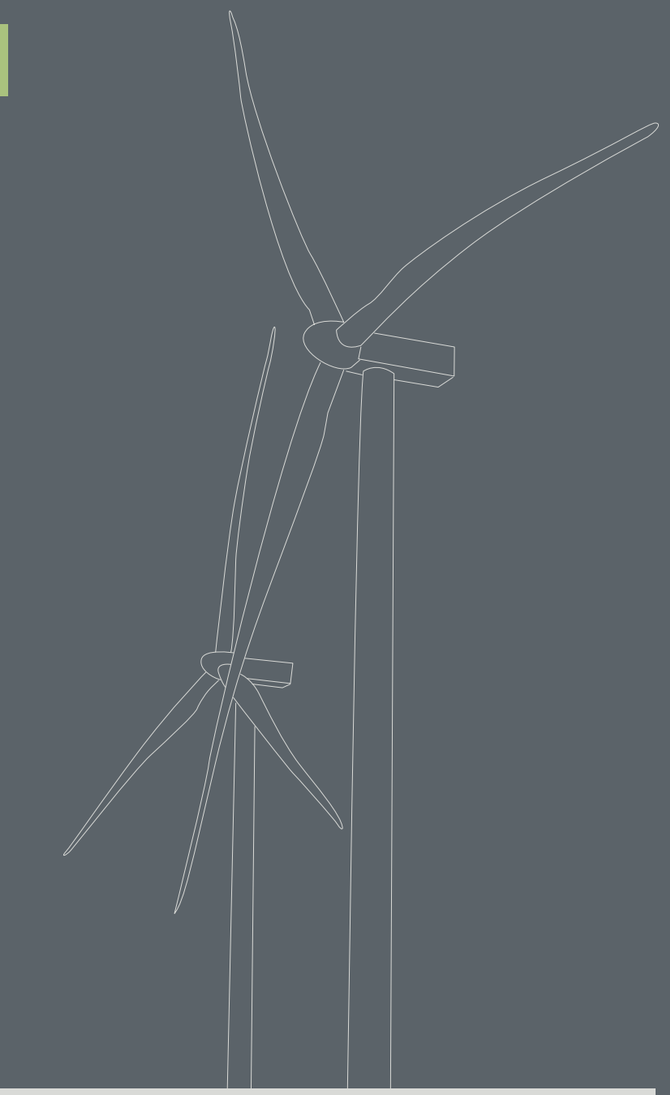
Information Booklet March 2022



WIND PROSPECT

www.willatookwindfarm.com.au

WHAT'S INCLUDED



WILLATOOK WIND FARM

Willatook Wind Farm is a proposed wind farm and battery storage facility located in the Moyne Shire in south-western Victoria, approximately 20kms north of Port Fairy and 30kms northwest of Warrnambool. The neighbouring townships are Orford and Hawkesdale.

The south-west corner of Victoria is known for strong and reliable winds.

The project will harness these winds to generate power for up to 260,000 households, saving approximately 1.3 million tonnes of CO_2 equivalent annually.

The wind farm will include 59 wind turbines and an on-site battery storage facility that will connect to the Tarrone Terminal Station.

Wind Prospect acknowledges the traditional custodians of the land on which the project is located, being the Eastern Maar People and Gunditjmara People and wishes to pay respect to Elders, both past and present. We acknowledge the ongoing connection between the Traditional Owners with the land and waters.

KEY FACTS

PROJECT STATUS
An Environment Effects Statement is underway and due for public exhibition in 2022.

WIND TURBINES
59

WIND FARM CAPACITY
Approximately 350 megawatts (MW) – enough to power up to 260,000 Victorian households

POWER GENERATION
1,300 gigawatt hours (GWh) per year

BATTERY STORAGE SYSTEM
An on-site battery storage facility with a capacity of 200 MW / 400 MWh (megawatt hours) located adjacent to the on-site substation. The battery system will store energy and export that energy to the national grid when electricity demand is high.

ON-SITE QUARRY
An on-site quarry is proposed to minimise the use of local roads by construction traffic.

ELECTRICAL TRANSMISSION
A network of underground electrical cables is proposed to connect the wind turbines to the on-site substation. A 275 metre overhead transmission line would connect the substation to the Tarrone Terminal Station.

ON-SITE SUBSTATION
On-site substation will be located within the project site immediately north of the existing Tarrone Terminal Station.

CONSTRUCTION PERIOD
Approximately 24 months.

LIFESPAN
25 years.

DECOMMISSIONING
Decommissioning expected to commence within 12 months of wind turbines permanently ceasing to generate electricity.

HOST LANDOWNERS
16 landowners will host project infrastructure.

LOCAL GOVERNMENT AREA
Moyne Shire Council

TOTAL CAPITAL EXPENDITURE
About $800 million

NEIGHBOUR BENEFIT SHARING PROGRAM
Those who own a dwelling within six kilometres of a constructed wind turbine will be eligible for an annual payment of up to $30,000, plus an annual energy offset of up to $2,000 and a one-off construction payment of $1,000.

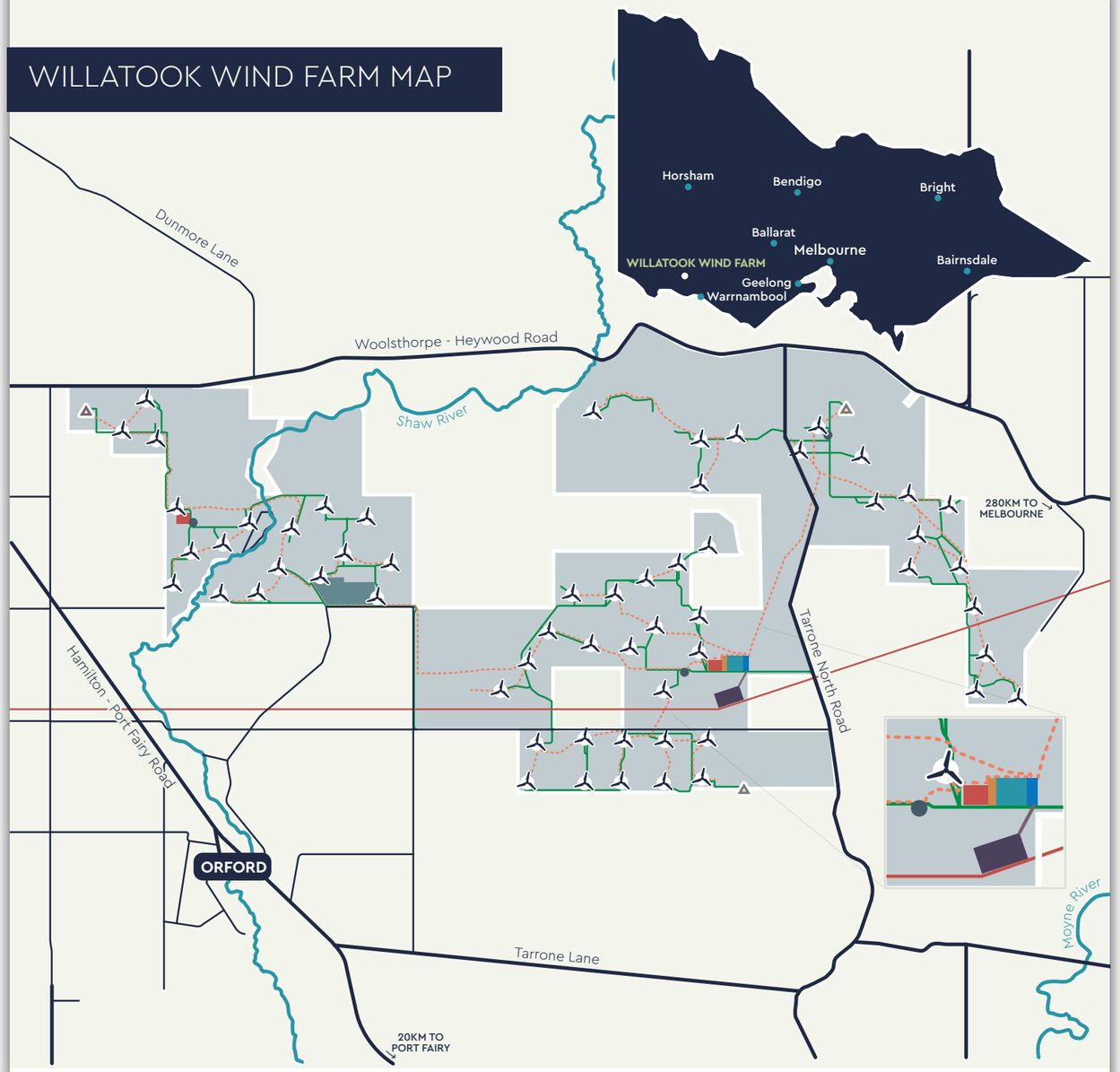
COMMUNITY BENEFIT FUND
A community benefit fund, valued at $59,000 (or, $1,000 per constructed wind turbine) a year, will be established and overseen by a community committee.

Rates payable
About $600,000 per year, for 25 years.

ENVIRONMENTAL BENEFITS
Savings of approximately 1.3 million tonnes of CO_2 equivalent annually.

EMPLOYMENT
The project is predicted to generate about 180 direct full-time equivalent jobs during construction and 12 ongoing full-time equivalent (FTE) jobs during wind farm operation.

WILLATOOK WIND FARM MAP



LEGEND

- Turbine location
- Meteorological monitoring mast
- Concrete batch plant
- Underground cable
- Access track
- Substation 33kV
- Battery storage system
- Construction compound
- Quarry area
- Operations and maintenance facility
- Willatook Wind Farm boundary

Other

- 500kV Moorabool-Heywood transmission line
- Major road
- Local road
- Watercourse
- Overhead transmission line
- Tarrone Terminal Station

N

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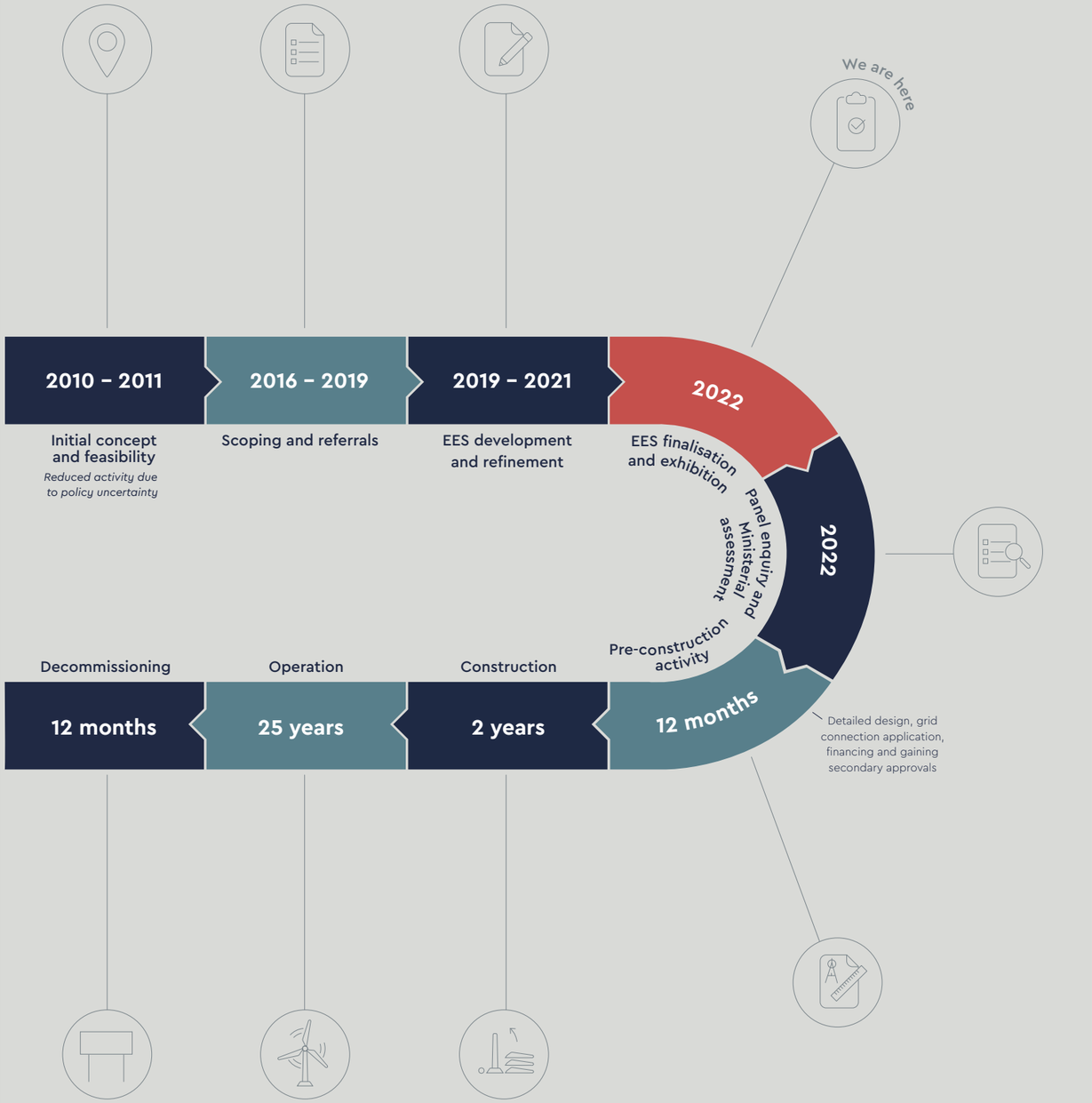
PROJECTION: GDA. 1994 MGA Zone 54

WIND PROSPECT
WILLATOOK WIND FARM

PROJECT TIMELINE



ENVIRONMENT EFFECTS STATEMENT PROCESS

The Willatook Wind Farm was referred to the Minister for Planning (the Minister) in October 2018 under the *Environment Effects Act 1978*. On 27 December 2018, the Minister determined an Environment Effects Statement (EES) was required due to the potential for the project to have significant effects on environmental and social values.

The Minister's decision was based on the potential for significant impact on:

- Threatened fauna, particularly Brolga and the Southern Bent-wing Bat
- Threatened flora
- Geoheritage and geoscience values of the area
- Visual amenity values of the area.

The Minister also determined the project has the potential for adverse cumulative effects when considered alongside other operating and approved wind farms. Within Victoria, the EES process is the highest level of government assessment.

Once finalised, the EES document and supporting technical reports will be published and made available for the community and other stakeholders to view and comment upon.

The Willatook Wind Farm EES consists of a main report with 27 chapters, 16 supporting studies, a management plan and peer reviews, all of which have been reviewed by a Technical Reference Group (TRG). The TRG was convened by the Department of Environment, Land, Water and Planning (DELWP) and incorporates representatives from Moyne Shire Council and Victorian Government agencies. The TRG has provided advice throughout the assessment process.

Topics included in the EES include:

- Noise
- Landscape and visual
- Flora and fauna
- Brolga
- Air quality
- Surface water
- Groundwater
- Aboriginal heritage
- Historical heritage
- Land use and planning
- Stakeholder engagement
- Electromagnetic interference
- Shadow flicker
- Aviation
- Geoheritage
- Aviation
- Geoheritage
- Traffic and transport
- Socio-economic

A key part of the EES process is to make documents available for public review so that informed submissions can be made to the government-appointed panel which will assess the EES. Where and how the EES can be viewed will be advertised in major and local newspapers and via project newsletters. An EES-dedicated page on our website will provide a direct link to the EES.

The EES is expected to be on public exhibition for a minimum of 30 business days in 2022. During this time members of the public can make written submissions on any aspect of the project. Submissions will be considered during the panel hearing process and will inform the panel's assessment report and the Minister for Planning's final assessment report.

Consultation is a key aspect of the EES process; it helps build an understanding around the issues and implications of the project and enables stakeholders' knowledge and views to be considered in both project planning and formal decision making.

Further information on the EES process can be found at:
https://www.planning.vic.gov.au/environment-assessment/what-is-the-ees-process-in-victoria

Documents relating to the Willatook Wind Farm EES will be uploaded to DELWP's website at:
https://www.planning.vic.gov.au/environment-assessment/browseprojects/projects/willatook-windfarm

WIND FARMS
22

SOLAR FARMS
2

3000MW
PLUS

ABOUT WIND PROSPECT

Willatook Wind Farm Pty Ltd is owned by Wind Prospect Pty Ltd (Wind Prospect).

Wind Prospect is a Melbourne-based, independently owned renewable energy project developer, which has operated in Australia since 2000. During that time Wind Prospect has gained planning approval for 22 wind farms and two solar farms across Australia, totalling almost 3,500 megawatts of generating capacity. More than 2,100 megawatts of this capacity are operational.

Wind Prospect develops major projects through to planning approval stage, and secures investors to deliver the projects. Some of the recent projects that Wind Prospect has secured planning approval for, and which are now being managed by other companies, include:

- Bulgana Wind Farm (owned by Neoen as part of the Bulgana Green Power Hub), north-east of Stawell in Victoria
- Yandin Wind Farm (owned by Alinta Energy), south of Dandaragan in Western Australia
- Willogoleche Wind Farm (owned by Engie), near Hallett in South Australia.

Wind Prospect is focused on regulatory compliance combined with strong stakeholder engagement. The company maintains a commitment to delivering long-term benefits to the local Willatook, Orford and surrounding communities, as well as helping to achieve policy objectives at all levels of government. Wind Prospect is also developing the Hexham Wind Farm project.

PROJECT BENEFITS

Employment

The project is predicted to provide about 180 direct full-time equivalent jobs during construction and 12 ongoing full-time equivalent (FTE) jobs during wind farm operation.

The project will also indirectly support jobs in the Moyne Shire and surrounding local government areas. Up to 290 indirect FTE jobs are anticipated during construction through supply chains and local service industries and up to 35 ongoing indirect FTE jobs once the wind farm is operational. About 11 of those ongoing indirect FTE jobs are anticipated to be in the region.

Economic

Of the $800 million total cost of the project, an estimated $120 million will be retained in the region including wages, contracts and other services. There will also be benefits to local and regional businesses and service providers, including the hospitality and accommodation sectors, through the provision of services to the construction workforce.

Ongoing economic stimulus in the region is predicted to be $158 million (calculated over 25 years) via financial returns to Moyne Shire, host landowners, neighbour benefit program payments and local wages. This includes rates to the Moyne Shire of about $600,000 each year during the project's operational life.

Environmental

The project will contribute significantly to the Victorian Renewable Energy Target of 50 per cent by 2030 and provide enough energy to the National Electricity Market to power about 260,000 homes with renewable energy.

Provided the electricity generated by the project replaces electricity generated by brown coal, this will save about 1.3 million tonnes of carbon dioxide each year.

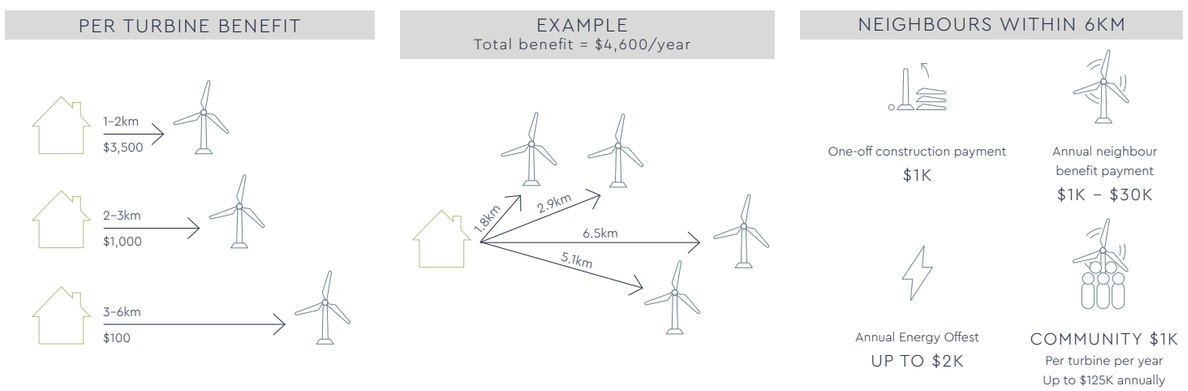
Community

The project's annual Sponsorship Fund of $20,000 will continue until a decision is made on the project, or the fund is replaced with a Community Benefit Fund.

If construction is approved, a Community Benefit Fund of up to $59,000 per year (based on $1,000 per turbine) will be established. A fund committee, made up of community representatives and a wind farm company representative, will develop funding guidelines and be responsible for deciding projects or organisations to be funded.

Neighbour Benefit Sharing Program

The Neighbour Benefit Sharing Program will ensure the financial benefits of the project are shared with those closest to the project. Community feedback gathered during door knocks, information sessions, the Koroit shopfront and mail outs has informed the program and resulted in a framework that will benefit neighbours directly. This program will be implemented if the project is approved and construction commences.



CONSTRUCTION

Construction of Willatook Wind Farm is anticipated to take about two years and, if approved, would begin in late 2023. Project construction will involve trucks and light vehicles and machines (such as cranes) moving in and around the project site.

Transport of materials and equipment to the project site will require the use of local roads but this usage will be kept to a minimum with on-site construction compounds, a quarry and concrete batching plants restricting most vehicle movements to the project site.

Considering the scale of the project, the impact to the immediate community during this time could be significant, so a one-off construction payment of $1,000 will be provided to all dwelling owners within six kilometres of the project site.

Up to 180 full-time jobs are expected to be created during the construction period, with most of the construction workforce likely to be accommodated in Warrnambool, Port Fairy and Koroit.

The project workforce will have a positive effect on local and regional businesses, with increased expenditure on accommodation, hospitality, retail and other services.

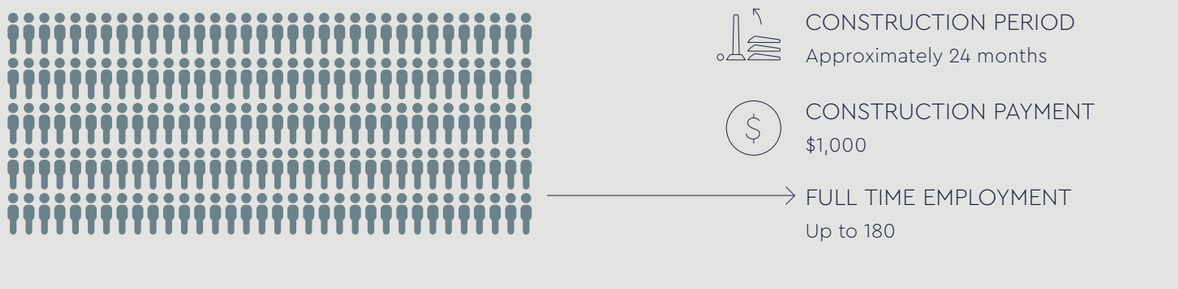
Construction will be undertaken in line with EPA guidelines, with work generally occurring between 7am and 6pm Monday to Friday and 7am and 1pm on Saturdays. Any specific works required to be completed outside of these hours will only occur in consultation with the Moyne Shire Council and the community.

A detailed Traffic Management Plan will be developed for the project.

The Port of Portland has been nominated as the primary port of entry for major imported components.

An over-dimensional vehicle transport route has been mapped out between the Port of Portland and the project site based on the wind turbine blades, which are the largest wind turbine component (at up to 93-metres in length). The designated route will incorporate travel along the Woolsthorpe-Heywood Road, west of Tarrone North Road, and will require upgrades to several intersections. The project will also upgrade a section of the Woolsthorpe-Heywood Road and several access points from public roads to the project site to minimise traffic impacts.

An on-site quarry, the preferred option for sourcing crushed rock will reduce the number of trucks moving to and from the site, in comparison to off-site quarrying, and will mitigate some of the potential construction traffic impacts.



QUARRY

An on-site quarry is proposed east of the Old Dunmore Road, about four kilometres north/north-east of Orford, to supply crushed rock for construction of the wind farm. The quarry will allow trucks carrying crushed rock to move almost entirely within the project site thereby minimising truck movements on local roads.

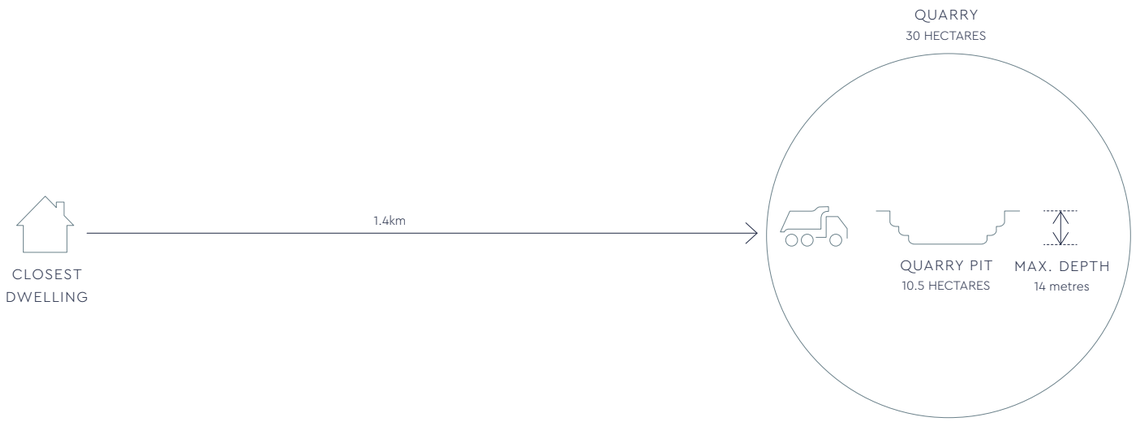
The quarry has been located as far away from houses as possible while still being able to provide enough crushed rock at sufficient quality for the project. The closest occupied house is about 1.4 kilometres from the quarry boundary.

The quarry work authority area will be about 30 hectares, with the quarry pit inside that area occupying about 10.5 hectares. The rest of the area will be used for temporary stockpiling, water retention dams, an office and workshop, fencing and buffers to surrounding farmland. About 450,000 cubic metres of basalt will be removed from the quarry to construct access tracks, hardstand areas and foundations. It will have a maximum depth of 14 metres.

Basalt rock will be mined using traditional drill and blast techniques and a mobile crusher will be used for on-site processing. Material will be stockpiled and transported to construction work zones across the project site. Blasting will occur about twice a month for up to two years. Individual blasts will have short durations of two to five seconds and will only occur during business hours.

Studies show the quarry operation will be well within noise, vibration, and air quality guidelines.

Once the wind farm is constructed, the quarry pit will be allowed to fill to create a water dam. Land surrounding the pit will be rehabilitated to its pre-construction state and will be able to be used by the landowner for farming operations.



TRANSMISSION LINE

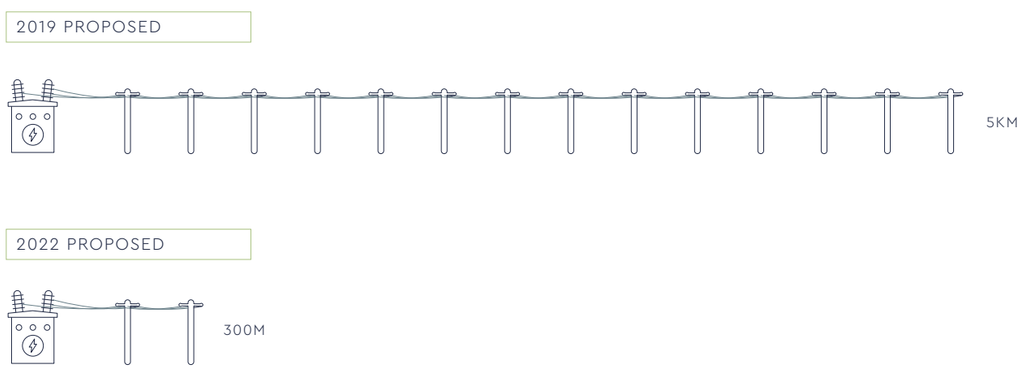
Connection to the national electricity grid is a critical component of any wind farm development.

The Willatook Wind Farm will connect to the existing 500kV transmission line that runs between Moorabool (near Geelong) to Heywood (north of Portland).

Initially the project design involved five kilometres of overhead transmission line within the project site, connecting a new on-site substation to the existing Tarrone Terminal Station. However, the incorporation of more land into the project in 2019 and subsequent changes to the project design have allowed a significant shortening of that transmission line.

Concerns were raised during early consultation about the presence of new transmission lines. The design being progressed through the EES process avoids visual and other environmental impacts, by removing the need for the previously proposed five kilometres of overhead transmission line.

The on-site substation will be located next to the Tarrone Terminal Station with approximately 275 metres of overhead transmission line proposed to be located within the site.



BATTERY STORAGE

Battery storage systems are increasingly becoming part of renewable energy projects. Large-scale batteries can store energy when there is more electricity being generated than is needed at a particular point in time or at times when electricity demand is low. Electricity is then available when demand is higher or supply from other sources decreases (for example, when the sun goes down or wind speeds are low).

Large-scale batteries also stabilise the electricity grid. They can immediately dispatch (or release) stored electricity when demand increases relative to supply, or when there is a sudden temporary loss of supply. This can reduce the frequency of power blackouts and reduce the need for load shedding when there is a supply imbalance (for instance, shortage of supply).

Example system

Large-scale batteries typically consist of several components:

- A battery unit (often the size of a shipping container)
- An inverter (to convert electricity from direct current to alternating current and vice versa)
- A transformer (to transform the electricity to a different voltage).

Each battery unit/container is usually individually controlled with its own monitoring and fire protection and suppression systems.

Willatook Wind Farm includes a battery storage system to the west of the on-site substation. The battery will be situated near the existing Tarrone Terminal Station and will include a series of modular battery units.

Close consultation between the wind farm operators, Energy Safe Victoria and the Country Fire Association will ensure rigorous inspection and testing procedures are in place for the batteries and all other electrical infrastructure to mitigate the risk of fire. Other mitigation and management measures will be included in the project's operation management plan, tailored to the final large-scale battery design.

FIRE PREVENTION AND MITIGATION

Some stakeholders have expressed concern that the project may increase the risk of bushfire or impact aerial firefighting activities.

The project will adhere to the Country Fire Authority's Guidelines for Renewable Energy Installations, which provides detailed measures and processes relating to fire safety, risk and emergency management. This includes ensuring wind turbines are more than 300 metres apart so that aircraft have enough room to operate within the facility. Firefighting aircraft operate under visual flight rules, which means they can operate day or night but only in areas where there is no smoke.

The project includes the upgrading or construction of about 60 kilometres of high-quality access tracks across the site, which will be built to meet CFA guidelines. This will improve firefighting access across the area, including through stony rises that are currently inaccessible by vehicles.

Electrical cables that connect wind turbines to the on-site substation will be laid underground which reduces the risk of fire from powerlines. The project design also includes water tanks in strategic locations to meet the requirements of CFA guidelines.

Wind turbines will be fitted with comprehensive lightning protection systems that safely transfer any high voltages or currents directly to the earth in the event of a lightning strike. They will also have automatic shutdown systems that switch off turbines if temperatures reach a predetermined level.

In the event of a fire at or near the wind farm, the operator will switch off all turbines. This can be done remotely and in a matter of minutes.

The battery energy storage system will have multiple layers of protection to mitigate the risk of fire. The protection will conform to relevant standards and the CFA guidelines.

The battery system will be equipped with a battery management system (BMS) that enables the system to shut off power if elevated temperatures are detected, or if there is a malfunction. Fire detection and suppression systems will also be fitted, and appropriate fire breaks will be maintained around the facility.

The project team will continue to liaise with the CFA as part of the Environment Effects Statement process.

There are several components of a wind farm that will create noise during operation. These include noise from the wind turbines through the movement of the blades through the air and mechanical noise from within the nacelle, as well as from the substation and battery facility.

In Victoria wind farms must comply with the New Zealand Standard Acoustics – wind farm noise (NZS 6808:2010) for wind turbine-related noise. This standard requires noise from wind turbines to not exceed 40 decibels or five decibels above the background level, whichever is higher. The "background sound level" and "post-installation sound level" are measured using the dB LA90 method which requires noise measurements over 10-minute time periods.

Noise model

Background noise monitoring was undertaken at 12 non-participating neighbour locations near the project site. The monitoring found noise levels in the area are typical of rural environments. The noise data collected at each monitoring location was correlated with the wind speed (at wind turbine hub height) for each 10-minute measurement period. This is the standard noise monitoring process.

Two internationally recognised sound propagation models CONCAWE and ISO 9613 were used to predict noise generated by Willatook's wind turbines. These models considered:

- the sound power level and position of the wind turbines
- the separation between the wind turbines and dwellings
- the topography between the wind turbines and dwellings
- the hardness of the ground
- atmospheric absorption of sound at different frequencies, and
- meteorological conditions.

Both methods were used to model noise impacts from the wind turbines in order to ensure the most conservative – or most onerous – noise prediction model for placement of turbines.

Modelling of the operational wind turbine noise for each of the dwellings in the vicinity was based on Vestas V162 wind turbines to demonstrate that noise compliance could be achieved.

Both CONCAWE and ISO 9613 models predict that the wind turbine operational noise complies with the New Zealand Standard at all non-stakeholder dwellings. This means the predicted noise level does not exceed 40 dBA90.

The highest predicted noise level at a stakeholder dwelling is 43 dBA90, which achieves the 45 dBA90 criterion of the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria. The modelling has been reviewed by an environmental auditor to verify that the acoustic assessment has been conducted in accordance with the New Zealand Standard.

Predictions for the final layout and turbine selection will be included in another pre-construction noise assessment (post-planning approval, but pre-construction), which will seek to ensure that the noise criteria are achieved at all dwellings and all wind speeds. Another audit may be required at this point to confirm the updated assessment has been conducted in accordance with the New Zealand Standard.

On-site substation and battery facility noise

Without any noise mitigation treatments, the highest noise level at any dwelling not hosting wind farm infrastructure is predicted to be 35 dB(A) during the day and evening periods and 33 dB(A) at night, which is below the regulations of 45 dB(A) in day hours, 39 dB(A) in the evening and 34 dB(A) at night.

Infrasound

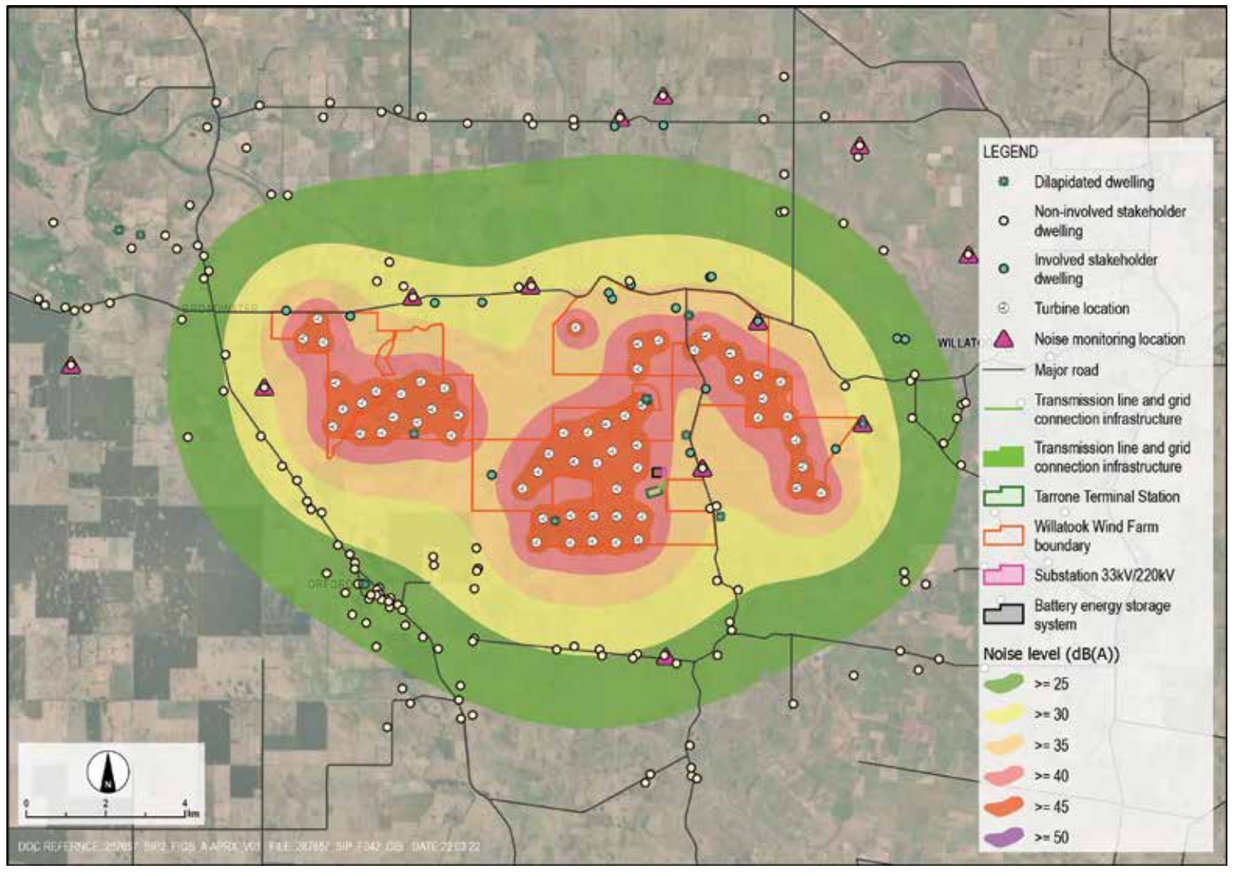
Infrasound is generally defined as noise at frequencies less than 20 Hertz. Non-audible perception of infrasound through vibrations felt in various parts of the body can occur at levels well above the threshold of hearing. Natural sources of infrasound include wind and breaking waves, and manufactured sources include industrial processes, vehicle movements, and air conditioning and ventilation systems.

The aerodynamic noise from rotating turbine blades produces energy in the infrasound range. However, a large range of measurements from various studies of infrasound noise emissions from modern turbines indicates that at distances of 200 metres, infrasound is about 25 dB below the recognised perception threshold of 85 dB(G).

The level of infrasound will further reduce at greater distances from the turbines. As such, infrasound at all dwellings is expected to be even lower since the distances between wind turbines and dwellings is significantly more than 200 metres.

Cumulative noise impacts

Noise studies also looked at cumulative impact, finding noise levels at high wind speeds at non-participating landowner dwellings between the Macarthur and Willatook wind farms will be 40 dB(A) or less. Cumulative impacts from other nearby wind farms that are approved, but have yet to be constructed (i.e., Hawkesdale, Woolsthorpe and Ryan Corner) will not produce a cumulative noise impact due to the distances between them and the Willatook Wind Farm.



VISUAL AMENITY

The proposed wind turbines for this project will be up to 250 metres in height and will be the most visually prominent feature of the project.

Elevated vantage points and landscape features in the region include volcanos, national parks and state forests, coastal areas, and culturally significant areas such as Budj Bim Cultural Landscape. Views from these areas will not change due to their distances from the project and existing vegetation that will screen views.

Wind turbines will be clearly visible within three kilometres of the project along sections of local roads, and from greater distances where the topography of the land and gaps in trees allow views across the landscape.

The closest wind turbine to the Orford town boundary is almost four kilometres away and will be much further from other towns. Views from Hawkesdale and Macarthur will be mostly obscured by the topography of the land, trees and buildings while Orford and Broadwater are closer and will have views of several turbines.

Photomontages have been prepared to show what the wind turbines will look like from certain locations. The photo below shows some of the visible wind turbines from Hamilton-Port Fairy Road just north of Orford.

View looking north-east

The greatest potential for visual impacts is from residential properties. The visual impact is influenced by the prominence of wind turbines in particular views, but also the personal perception of the viewer. Many residences and farm buildings within the local area are set within established and extensive windbreaks, which will provide some screening of wind turbines, however some residences will have views of wind turbines.

To minimise visual impacts, the project design has used a minimum 1.5-kilometre setback distance, or buffer, from neighbouring non-stakeholder dwellings. Landscape screening will be offered for residential dwelling owners within six kilometres where there are views of one or more wind turbines. This has been shown to be an effective measure for other wind farms.

Shadow flicker

Shadow flicker is a phenomenon whereby the shadow cast by rotating wind turbine blades causes a flickering effect which can cause nuisance, especially inside dwellings. This only occurs under certain combinations of geographical position and time of day when the rotating wind turbine is directly between the sun and the viewing receptor.

The assessment of shadow flicker used conservative geometrical modelling to predict the 'theoretical' worst-case shadow flicker, and 'actual' real-world shadow flicker incorporating predictable meteorological conditions, such as the average amount of cloud cover at particular times of year.

The project has been designed to avoid unacceptable levels of nuisance from shadow flicker, and the assessment confirms that the project satisfies the limits established in the Victorian Planning Guidelines at all neighbouring dwellings.

ELECTROMAGNETIC INTERFERENCE

Operating wind turbines have the potential to interfere with radiocommunication services (i.e., cause electromagnetic interference) to communication signals such as television broadcast signals and fixed point-to-point signals.

To determine the potential for electromagnetic interference, consultation was conducted with radiocommunications service providers, emergency services, mobile phone providers, NBN, Bureau of Meteorology (BOM), and operators of fixed point-to-point communications links and radio services. The operators of these services were asked to assess if the project would interfere with their services and to provide possible mitigation measures where they deemed them necessary. Operators typically advised that no impacts, or acceptable (negligible) levels of impact, were expected. Where they advised of potential impacts, respondents provided conditions they require the project to adopt.

The electromagnetic interference assessment concluded that there are not many radiocommunication services in the vicinity of the project and that the project is unlikely, or has a low potential, to cause electromagnetic interference. To ensure that mobile phone, NBN, broadcast radio and broadcast television are not negatively impacted, a signal strength survey at neighbouring dwellings will be conducted prior to construction, and repeated after construction if issues are reported.

BROLGA

The Brolga is an iconic wetland bird listed as endangered in Victoria. The southern population has experienced significant decline since European settlement, with habitat loss from agriculture and wetland drainage, predation from foxes, and collisions with fences and powerlines. Brolga collisions with wind turbines have not been reported, but the Victorian Government has issued guidelines for the wind industry as a precautionary measure.

Significant efforts have been made to assess Brolga activity and suitable habitat at the project site and surrounding area over the last decade. This has included reviews of the existing Victorian Government database records, consultation with landowners, many field surveys of wetlands recording Brolga activity and the suitability of wetlands as Brolga habitat, aerial surveys, and hydrological modelling of habitat.

Field surveys conducted between 2010 and 2021 have observed five pairs of Brolga breeding within 10 kilometres of the project site. One pair was repeatedly observed nesting within the Cockatoo Swamp wetland area situated to the south of Woolsthorpe-Heywood Road. Hydrological modelling was used in combination with ecological field surveys to predict which wetlands provide habitat suitable for Brolga breeding.

To minimise the potential for the project to impact Brolga, a buffer zone has been created to exclude wind farm infrastructure (including wind turbines) in accordance with the government's Interim Guidelines for the Assessment, Avoidance, Mitigation and Offsetting of Potential Wind Farm Impacts on the Victorian Brolga Population. This buffer zone incorporates seasonal wetlands used for breeding and night roosting, non-wetland areas around breeding wetlands used for foraging, and movement corridors between individual breeding wetlands and night roosting wetlands.

A single buffer zone (2,248 hectares in size) was established around the Cockatoo Swamp wetland complex, encompassing five areas that become flooded in winter and spring and are suitable for Brolga breeding. This resulted in the movement or removal of 23 previously proposed wind turbines from the wind farm design. The buffer developed for the project is larger than buffers developed for other operating wind farms within the Brolga range in Victoria.

Willatook Wind Farm brolga & brolga habitat assessments

Brolga records & surveys

Brolga records in BVA database
Review of previous breeding records from databases within 10km

Community consultation
Community consultation with landowners within 10km

Brolga field surveys
Roaming field surveys for Brolga over 5 breeding seasons with wetlands visited monthly for 3–4 consecutive days

All historical records of breeding associated with a wetland were assumed to indicate sites where breeding could occur in the future. The only exception was where the historical records of breeding was located at a wetland that had been permanently drained.

Assessment of Brolga Habitat

Victorian Wetland Inventory
Wetlands identified within the DELWP Victorian Wetland Inventory ('current wetlands') database

Aerial Surveys
An aerial survey was conducted in October 2010 to record potential Brolga nests within 20km of the project. A second aerial survey was undertaken in October 2018 within 10km of the project in accordance with the Interim Brolga Guidelines

Field Inspection
Assessed habitat characteristics of mapped wetlands, including surface water cover, drainage, emergent vegetation present and grazing pressures

After two years of monitoring the wetlands, it was noticed that many of the wetlands on the wetland layer were innacurate in terms of size, shape or presence of water. Therefore, detailed hydrological modelling was conducted for the site and immediate surrounds (i.e. within 2km of potential turbine locations

Hydraulic Modelling
Hydraulic model results were used to delineate which wet areas would move to a more detailed hydrologic assessment. Inundated areas with an area of less than 0.1 Ha were removed

Desktop Review
Refining using a desktop assessment of LiDAR, hydraulic model results and aerial imagery to exclude areas that are permanently drained, shallow (less than 300mm), or had incorrect topographic representation. The review assessed all potential wetland areas within 2km of a potential wind turbine location

Hydrologic Modelling
Water balance modelling of each wetland individually or as a series of connected wetlands. This estimated both runoff volumes and wetland levels

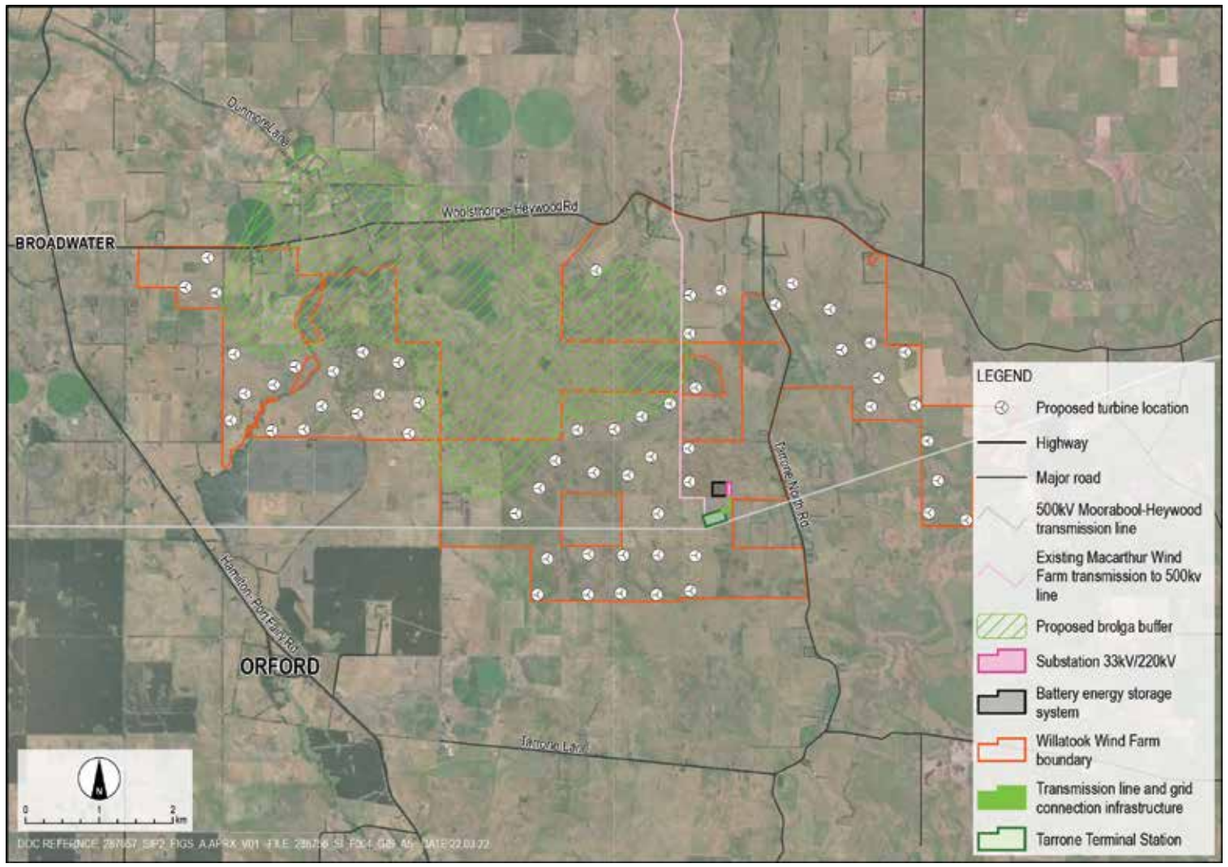
Field Assessment
Habitat characteristics including surface water cover, drainage, emergent vegetation present and grazing pressures

Once buffers had been applied, the risk of Brolga colliding with wind turbines was assessed by developing a collision risk model. Statistically, this means there would be a 95 per cent chance of between zero and four collisions occurring over the life of the project.

A Population Viability Assessment was also completed to assess the impact to the Victorian Brolga population. The assessment predicted the population size would be reduced by between 0.2 and 0.8 birds over the life of the project compared with baseline conditions, or 0.1% of the south-east Australian Brolga population.

As well as developing a turbine-free buffer around the Cockatoo Swamp Brolga breeding wetlands, a minimum turbine blade tip height of 40 metres has been proposed for the wind farm. In other words, all wind turbine blades will be at least 40 metres above ground level. This would further reduce the potential for Brolga (and other birds and bats) colliding with wind turbine blades.

The project has also committed to developing a Brolga Compensation Plan that would restore wetlands suitable for Brolga breeding. This would aim to increase the number of Brolga young that survive each year.



There have been a broad range of studies focussing on other flora, fauna and native vegetation completed for the project over the past decade or more. Based on the findings of these studies, the impacts to these flora and fauna populations have been assessed and will be presented in the EES.

HERITAGE

Aboriginal Cultural Heritage

The project is situated on land that is the traditional land of the Dhauwurd wurrung (Gundidjmara) Aboriginal people. Over the last decade, there have been extensive Aboriginal cultural heritage assessments attended by representatives from the relevant Aboriginal Traditional Owner groups.

One previously registered Aboriginal heritage place (a mound) is located within the project site; however, this place could not be found during the site surveys and is assumed to have been unintentionally destroyed. Three additional places, comprising of an artefact scatter, an isolated artefact, and a low-density artefact distribution, were identified during the complex assessments. All these areas have been avoided in the project design and will not be impacted by the project.

Potential impacts to known Aboriginal cultural heritage places and areas likely to contain Aboriginal cultural heritage have been minimised in the development of the project design. A Cultural Heritage Management Plan (CHMP) has been prepared for the project.

Protective measures, included in the CHMP, will be implemented during project construction, including the establishment of 'no go' areas and cultural heritage inductions.

Willatook Wind Farm operators will continue to engage with Traditional Owner Groups to explore opportunities for further cultural recognition and to ensure ongoing participation in the project.

Historic Heritage

First European settlement in Orford dates to 1856. A series of acts were passed in 1898 and 1904 in which large pastoral holdings were compulsorily acquired and subdivided to allow for closer settlement. Soldiers returning from World War I and then World War II were able to acquire parcels of land under the Soldier Settlement Scheme.

The historical heritage assessment interrogated heritage registers and databases, previous archaeological publications and unpublished reports, and reviewed the local post-contact history to identify historical heritage artefacts at the project site. Site surveys were also completed to identify areas of historic significance. The heritage assessment identified two sites previously recorded in heritage registers and inventories, as well as identifying two new or unlisted sites that have since been submitted for inclusion in the Victorian Heritage Inventory. Sites included the Dunmore Turkish Bath House which was associated with Charles Hamilton Macknight who was a pastoralist in the 1800s and a notable figure in the history of the region.

The project has been designed to avoid heritage places and no impacts on listed sites of historical heritage value are predicted.

The project will impact the Landers Lane dry stone wall, which is not included in the Victorian Heritage Inventory or Victorian Heritage Register but is protected under the Moyne Shire Council's Planning Scheme Clause 52, as it holds some local heritage value. Design changes have reduced the anticipated impacts to the Landers Lane dry stone wall including the relocation of the project substation away from Landers Lane, the removal of an overhead transmission line along the lane and the use of existing gates across the wall where possible.

Landers Lane dry stone wall

PROPERTY VALUES

Research indicates that wind farms do not negatively impact property prices. Multiple studies by respected and independent organisations have been undertaken over the last two decades and have failed to find any correlation between wind turbines and declining property values.

A 2016 report commissioned by the NSW Office of Environment and Heritage (OEH) undertook six case studies across NSW and Victoria.

This included analysis of sales data of properties near wind farms to identify differences between these properties and the broader sales market over the previous 15 years. All analysed properties "demonstrated an increase in value between their pre-wind farm sales and their respective post wind farm sales" and "measurement of this growth relative to the broader private market revealed that this growth appears to be in line with local market trends". The case studies "did not identify any conclusive trends that would indicate that wind farms have negatively impacted on property values" [1].

The report also concluded that: "The literature review of Australian and international studies on the impact of wind farms on property values revealed that the majority of published reports conclude that there is no impact or a limited definable impact of wind farms on property values".

1 Urbis (2016) report:
https://www.environment.nsw.gov.au/resources/communities/wind- farm-value-impacts-report.pdf, p20

CUMULATIVE IMPACTS

Construction and operation of the Willatook Wind Farm may contribute to cumulative impacts with other operating and approved wind farms in the area. Cumulative impacts refer to positive or negative impacts that can result from clustering a particular activity or land use within a specific area. This is one of the reasons the Victorian Planning Minister identified the need for an Environment Effects Statement, highlighting the potential for cumulative adverse effects associated with several wind farms within the area, particularly on biodiversity and amenity values.

Noise

There are four wind farms within 15 kilometres of the project site that are either operating or have planning approval. The yet-to-be-constructed Ryan Corner, Hawkesdale and Woolsthorpe wind farms are too far away to add to the noise produced by the Willatook Wind Farm at neighbouring dwellings. The Macarthur wind farm is about seven kilometres north of the closest proposed Willatook wind turbine and may contribute to a cumulative noise impact at some dwellings.

The conservative cumulative noise modelling approach taken assumed dwellings would be downwind of both the Macarthur and Willatook wind farms, which in reality, cannot occur. The model showed that noise generated from both wind farms at high wind speeds at dwellings between the two wind farms will be no greater than 39 dB(A). This means the noise criteria (of 40 dB(A)) for all wind speeds at all dwellings between the Macarthur and Willatook turbines will be achieved.

There may be instances where a residence becomes downwind of turbines more often, resulting in wind farm noise being audible more often. For example, at a given residence, the noise from Willatook Wind Farm may be more audible under a southerly wind direction and the noise from Macarthur Wind Farm may be more audible under a northerly wind direction. However, the cumulative noise level assessment determined that the objective noise criteria under the NZ Standard will be satisfied at all times.

Visual

Visual impacts are influenced by the prominence of wind turbines in particular views, but also the personal perception of the viewer. Cumulative visual impacts may result in changes to the perceptions of the local community or a visitor to the region due to the presence of wind turbines.

Cumulative visual impact occurs when there are sequential views to multiple wind farms (for example, while driving through the region) or simultaneous views to multiple wind farms from a single location. The landscape and visual impact assessment determined that viewers travelling along highways and local roads within the area would likely experience views that take in several wind farms sequentially, or one after another, impacting the viewer's perception of the landscape.

There are points on the Hamilton – Port Fairy Road where Macarthur and Willatook turbines will be seen, with turbines of the Ryan Corner, Hawkesdale and Woolsthorpe wind farms in the distance. These views will last only a short time and be from limited locations. Similar views will be obtained from parts of the Penshurst – Warrnambool Road.

Cumulative visual impacts from individual dwellings involving simultaneous views of Willatook and other wind farm turbines will be possible. Irrespective of whether there is a cumulative impact, landscape screening will be offered for residential dwellings within six kilometres where there are views of one or more Willatook Wind Farm wind turbines.

Flora & Fauna

There are now 11 wind farms either approved, under construction or operating within the Moyne Shire and surrounds. These districts have an agricultural history dating from the late 1830s, with much native vegetation having been removed for farming.

Some vegetation clearance is generally required to build wind farm projects. However, while wind farms can be spread over a broad landscape, they have a comparatively small footprint at any one location and a design flexibility which generally allows sensitive areas to be avoided.

While each additional project added to the landscape results in more vegetation clearance, this must be offset in accordance with government regulations. No significant impacts to regional flora and fauna populations from this vegetation clearance are expected.

During the operation of wind farms, some birds and bats are known to collide with turbine blades. Some species are more susceptible based on their flying behaviour, for example, high flying species and those that are less manoeuvrable. Monitoring of bird and bat deaths from turbine collisions is routine for operating wind farms.

The project has developed a range of measures to mitigate potential impacts to fauna populations including creating habitat buffers to minimise disturbance and committing to having a minimum turbine blade height of 40 metres to minimise potential collision risk with birds and bats.

There are, however, expected to be some bird and bat deaths from collisions with wind turbines. These are likely to be common and broadly distributed species that are not threatened.

DECOMMISSIONING

The Willatook Wind Farm will have an operating life of 25 years. The decision on whether to refurbish, replace or remove the wind turbines will be subject to an assessment of the project's economic viability closer to the time, in consultation with the landowners, approval authorities and the community. An assessment of environmental and social impacts will occur at that time and approvals sought in accordance with planning requirements.

Decommissioning is the responsibility of the wind farm owner, not the landowner. Long-term agreements have been signed with landowners with stringent decommissioning obligations. Ongoing fees are payable to landowners until decommissioning is properly completed, providing a strong incentive for this to occur once the wind farm ceases operation.

Decommissioning will take about 6 to 12 months. Large equipment, such as cranes, excavators, graders and other large vehicles will be required for removal of blades and towers.

Significant environmental planning has been undertaken to minimise the environmental footprint of decommissioning. Most above ground components of the project can be recycled at the end of their life, including the steel towers and copper contained within each wind turbine. The ability to recycle some wind turbine components, including blades, is expected to be significantly improved (technologically and economically) by the time decommissioning of wind turbines is required.

When decommissioning occurs, below-ground infrastructure, such as wind turbine foundations and underground cables, may be left and covered with at least 50 centimetres of soil cover. The ground surface would be rehabilitated to reflect the natural surface that existed pre-development and to avoid soil erosion. A map of below-ground infrastructure will be provided to each landowner hosting wind farm infrastructure.

Neighbouring landowners and the local community will be engaged about the project's future, seeking to address any issues, minimise impacts and maximise benefits.

HOW TO BE INVOLVED

NEXT STEPS:

1	2	3	4	5
EES COMPLETION	COMMUNITY ENGAGEMENT	EES PUBLIC EXHIBITION	PUBLIC HEARINGS	ASSESSMENT
Early 2022	**Early 2022**	**Early-mid 2022**	**Mid 2022**	**Late 2022**
Completion of 16 technical studies and investigations that support the EES and provide a comprehensive description of the project and likely effects. Wind Prospect has been developing the EES over a period of 2.5 years	A series of information days are planned for community members to learn about the final project design, and findings from the EES investigations. Our noise, visual and ecological consultants will attend and be available for questions.	The EES will be on public exhibition for at least 30 days and made available online and at several locations within the region. This is an opportunity for community members to learn about the final project design, construction and operation, and likely effects on the environment and community. During this time, the public can make written submissions.	A State Government appointed independent Inquiry Panel will conduct public hearings. The panel will review and consider the EES and written and verbal submissions and produce a report for the Minister for Planning.	The Victorian Minister for Planning will assess the EES, public submissions and the inquiry report in order to make an assessment. The Minister's findings will be documented in an Assessment Report that will provide guidance to Statutory Decision Makers.

Willatook Wind Farm is in the final stages of preparing the Environment Effects Statement (EES) after the project was referred to the Victorian Minister for Planning in October 2018, under the ***Environment Effects Act 1978***.

The EES process has provided opportunities for ongoing community consultation and important feedback. Consultation has helped the team to identify issues of concern and potential effects, as well as consider project options and mitigation measures.

The EES document and supporting technical reports will be submitted by mid-2022 to DEWLP for review. Once submitted, the EES (a main report consisting of 27 chapters and 16 supporting studies and several peer reviews) will be available to the public for review to allow informed submissions to be made.

These submissions will be considered by the Minister and the independent Inquiry and Planning Panel during their assessments.

The EES is expected to be on exhibition for a minimum of 30 to 40 business days. The public will be informed about the availability of the EES documents in the lead up to, and during, the exhibition period via:

- notification letters and community updates to landowners within 10 kilometres of the proposed wind turbine locations
- up-to-date information on the project website including access to the EES documents
- print advertising in local newspapers informing the community of where they can access the EES documents and make written submissions
- provision of the EES on USB drives (upon request), and
- community information days.

The decision to approve a planning permit for the Willatook Wind Farm will ultimately be made by the Victorian Minister for Planning.

For further information on the EES
www.planning.vic.gov.au/environment-assessment/what-is-the-ees-process-in-victoria

Documents relating to the EES will be uploaded to DELWP's website at:
https://www.planning.vic.gov.au/environment-assessment/browse-projects/projects/willatook-wind-farm

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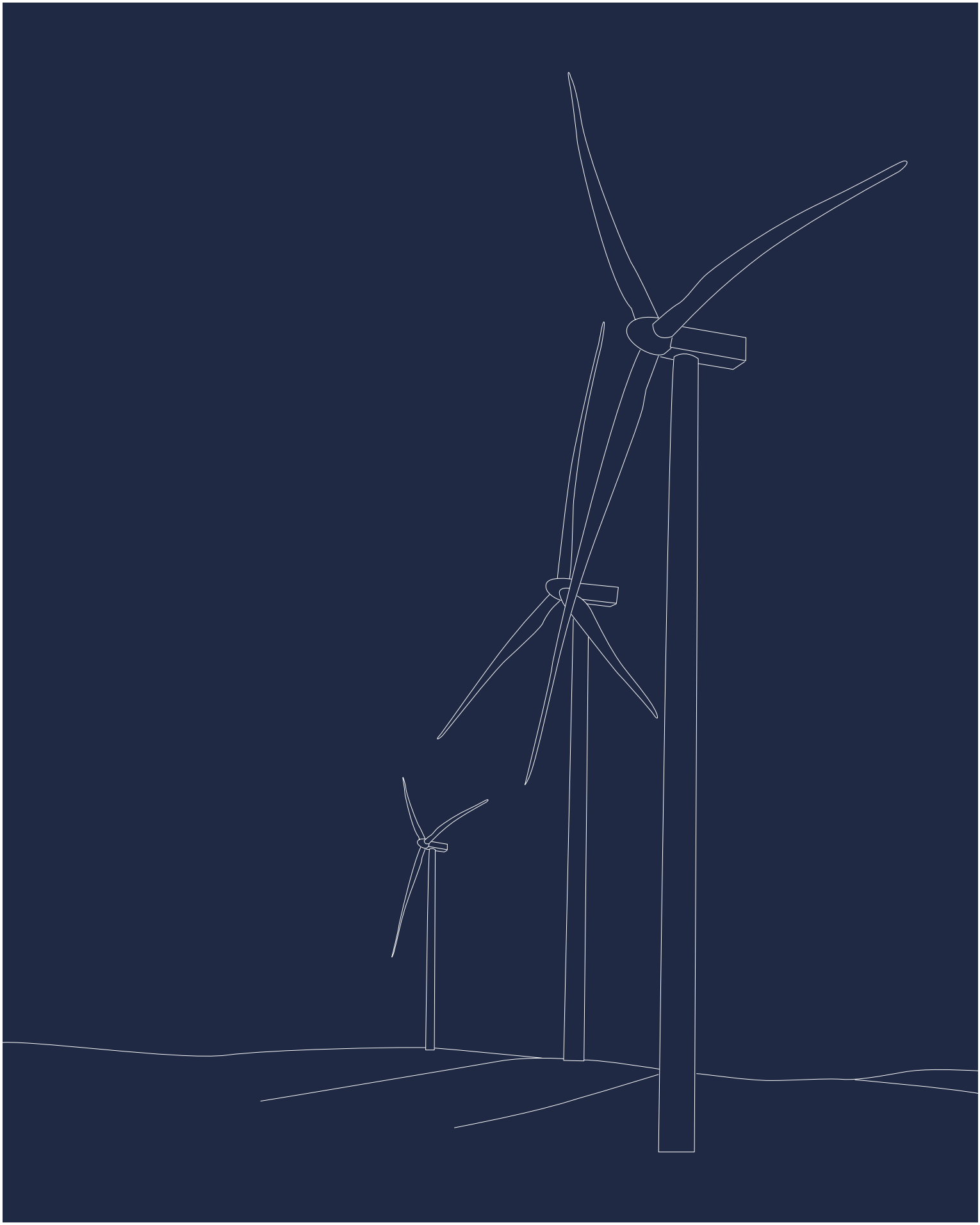

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