

# Dundonnell Wind Farm

Newsletter  
Edition

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## Dundonnell VREAS bid successful

Tilt Renewables' Dundonnell Wind Farm bid into the Victorian Government's Renewable Energy Auction Scheme (VREAS) has been successful.

Tilt Renewables General Manager - Renewable Development Clayton Delmarter said the project had been awarded a support agreement by the Victorian Government.

"We are very pleased to be able to make a significant contribution towards the Victorian Government's renewable energy target," Clayton said.

"The company board still needs to make a final investment decision - which could occur as early as October 31 this year - but this announcement certainly provides a greater degree of certainty in regards to the project progressing."

Work on the project will continue over the coming months.

"We will be continuing to work on several fronts including wind farm layout design, finalising the connection agreements, transmission line and substation detailed design, as well as preparing environmental and traffic management plans to manage construction and operational impacts.

"This includes working with the relevant agencies (including the Moyne Shire) to ensure that the detailed design of the project is consistent with approvals, as well as ensuring the management plans are appropriate."

Clayton said locals may notice increased activity in the area.

"Site investigations such as geotechnical investigation and survey will soon be commencing. These and other activities are set to increase over the coming months, with construction anticipated to commence before the end of the year."

The Dundonnell Wind Farm is located 23 kilometres north-east of Mortlake, in a sparsely populated area predominantly used for grazing stock. The project has been driven by a group of local residents and will include 80 wind turbines. It will be connected to the National Electricity Market (NEM) via a 38 kilometre 220kV transmission line and new substation on Connearwarren Lane to the Mortlake Gas Fired Power Station (MOPS).



## Project facts

- \$560 million project
- 80 turbines, with a blade tip height of up to 189m
- Installed capacity of 336MW
- 12 wind farm host landholders, across 4500 hectares
- 12 transmission line host landholders
- 38 kilometres of 220kV overhead transmission line to the connection at the MOPS substation
- Underground 33kV cables between the turbines
- Onsite quarry and concrete batching plants

## Project status

- Planning and environmental approvals received
- Project successful as part of the State Government's VRET Reverse Auction
- Proposed to commence construction later this year

Currently undertaking:

- Wind farm layout design
- Finalising of connection agreement, transmission line and substation design
- Preparing management plans (to manage construction impacts)
- Site investigations, including geotechnical investigation and survey

## SAVE THE DATE - National Wind Farm Open Day

Tilt Renewables will be opening the gates of the Salt Creek Wind Farm to the public on Sunday 21st October 2018 as part of the Clean Energy Council's National Wind Farm Open Day.

The Salt Creek Wind Farm is located 5 kilometres south of Woorndoo, about 10 kilometres to the west of the proposed Dundonnell Wind Farm.

The open day will be a great opportunity to get up close and personal with an operating wind farm, meet some of the Tilt Renewables team and find out more about Australia's clean energy future.

We will also be on hand to ask any questions you have about the Dundonnell Wind Farm project.

We are currently working through the details of the day, however hope that you save this date in your diaries. Further details about the day will be available on the Salt Creek Wind Farm website [www.saltcreekwindfarm.com](http://www.saltcreekwindfarm.com) over the coming months.

## Salt Creek Wind Farm

Will be opening its gates for

**WIND FARM  
OPEN DAY**

Sunday 21 October 2018



To find out more visit  
[cleanenergycouncil.org.au/openday](http://cleanenergycouncil.org.au/openday)



Vestas



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## Employment

A wind farm project brings many direct opportunities for employment to the region during both the construction phase and ongoing operations once the wind farm is commissioned.

Flow on employment benefits are also achieved as the project brings demand for local business services and consumer goods. Most regions have a range of businesses that will provide services to a wind farm project.

Anyone interested in supplying local services or gaining employment is encouraged to register their interest on our Goods and Services Register via the link on the project website [www.tiltrenewables.com/assets-and-projects/Dundonnell-Wind-Farm/](http://www.tiltrenewables.com/assets-and-projects/Dundonnell-Wind-Farm/).

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## Community benefits

Tilt Renewables is committed to providing support for the local community through benefit sharing programs.

Work on a range of benefit sharing programs, including a community fund, will begin when construction of the project commences. The community fund will operate for the life of the wind farm and will be administered by a community-led group.

Further information on the shared benefit programs to be made available to the local and regional communities will be communicated over the next few months. These programs have been developed to address key social and education based needs in the region.

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## Contact details

For more information, or to provide any feedback, please visit the project website

**Web:** [www.dundonnellwindfarm.com.au](http://www.dundonnellwindfarm.com.au)

**Email:** [dundonnellwindfarm@tiltrenewables.com](mailto:dundonnellwindfarm@tiltrenewables.com)

**Phone:** 1800 122 823

**Postal Address:** PO Box 16080,  
Collins St West, Melbourne Vic 8007



## Frequently Asked Questions

### At a glance

<b>Capacity</b>	336MW
<b>Location</b>	23km north-east of Mortlake, Victoria
<b>Investment</b>	\$560m
<b>Turbines</b>	80 turbines
<b>Blade tip height</b>	189m

### Other wind farm infrastructure

Underground 33kV cables between the turbines, onsite quarry and concrete batching plant

### Transmission connection

38km of 220kV overhead transmission line and a new substation

### Wind farm landholders

12 host landholders over approximately 4500ha

### Transmission line landholders

12 host landholders

### Who is Tilt Renewables?

The Dundonnell Wind Farm will be owned and operated by Tilt Renewables. We are an owner, operator and developer of renewable generation assets across Australia and New Zealand, primarily consisting of wind, solar and storage projects. We have an existing asset base of 322 operating turbines across eight wind farms, including the nearby Salt Creek Wind Farm.

Our portfolio includes the Snowtown Wind Farm - South Australia's largest and Australia's second largest wind farm - and the Tararua Wind Farm, New Zealand's largest wind farm. You can read more about Tilt Renewables at: [www.tiltrenewables.com](http://www.tiltrenewables.com)

### What planning process did you go through?

The Environment Effects Statement (EES) and planning permit applications were submitted to the relevant authorities in April 2015. The EES process included public consultation, public notification and an inquiry (including a panel hearing).

Subsequently, planning approval for the wind farm was granted for up to 96 turbines, as well as approvals for the transmission line and offsite substation. In December 2017, the Minister for Planning granted an increase in the maximum turbine tip height to 189 metres and a reduction in turbine numbers to 88.

### What other approvals are required before building a transmission line?

In addition to the EES and planning permit application process, the project was also approved under the Commonwealth environmental legislation. Additionally, Cultural Heritage Management Plans have been prepared and approved to ensure impacts on cultural heritage are managed.

Prior to construction, the designer and constructor will obtain approvals associated with the crossing of existing infrastructure, waterways, undertaking work within road reserves and other relevant approvals.

### What can I expect leading up to construction?

Over the coming months we will be continuing to work on several fronts including wind farm layout design, finalising the connection agreements, transmission line and substation detailed design, as well as preparing environmental and traffic management plans to manage construction and operational impacts.

This includes working with the relevant agencies (including the Moyne Shire) to ensure that the detailed design of the project is consistent with approvals, as well as ensuring the management plans are appropriate.

You may notice an increased activity in the area with site investigations commencing, including geotechnical investigation and survey.

### What can I expect during construction?

The first phase for the Dundonnell Wind farm will be public road upgrades and access track construction. During this phase expect to see road work zones on Woorndoo-Streatham Road and a short section of Woorndoo-Dundonnell Road. These works will require road building equipment such as graders, rollers, excavators and will also be used to construct the onsite access tracks and construction areas.

Most of the materials for the onsite works will be quarried and produced onsite in a temporary quarry near the center of the site, however some materials may need to be imported from existing quarries. E.g. for the public road upgrades to ensure that the quality of the road meets Council/VicRoads standards.

Wind turbine components will be delivered from port using a preapproved route. This route is not yet confirmed, but will be communicated when known.

The final phase of construction is the commissioning of the wind turbines and electrical systems. This is a long process that is completed over several months.

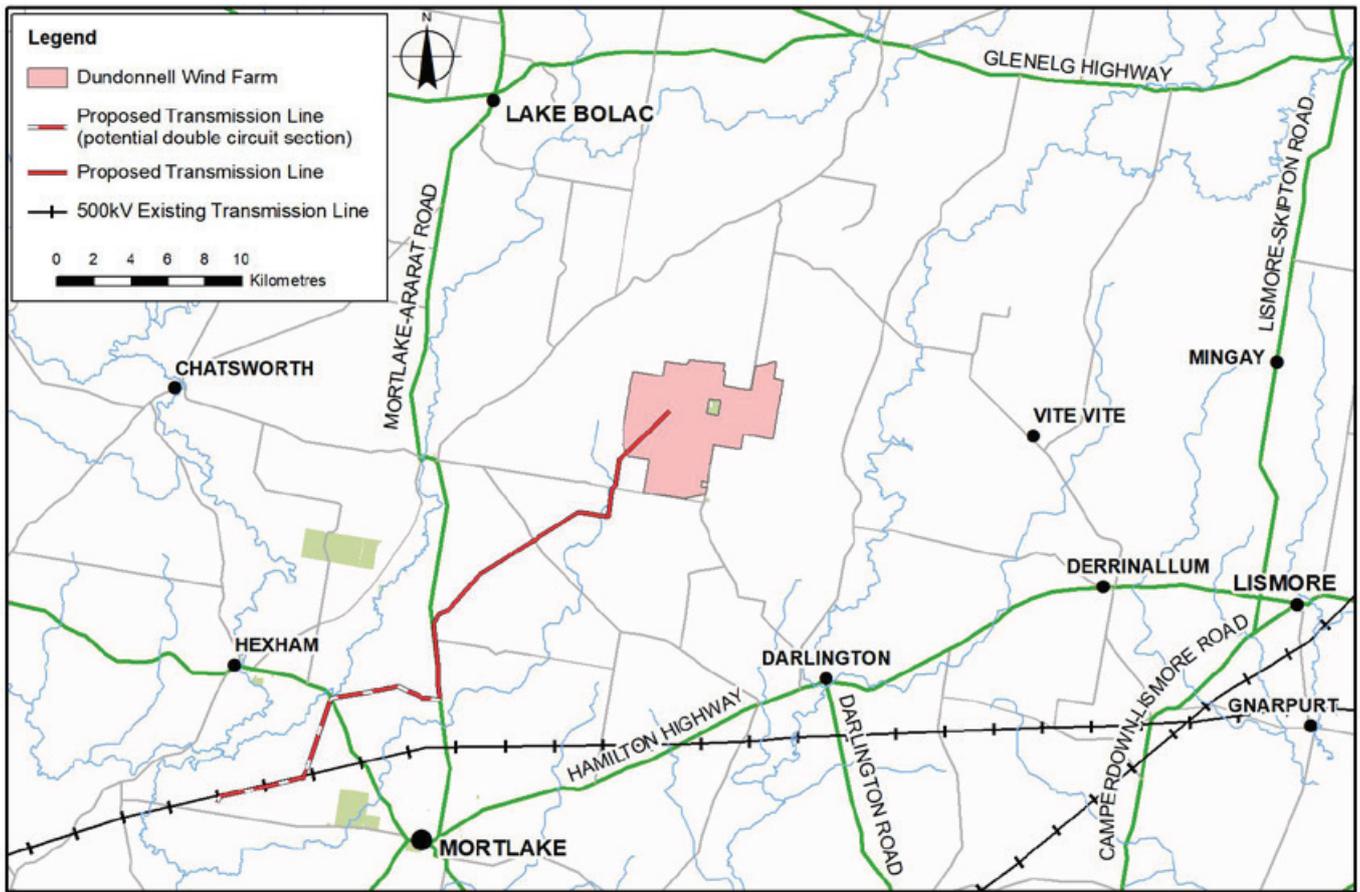
Construction of the transmission line will occur at the same time as the wind farm. Construction will be completed in many areas simultaneously and work will not necessarily be undertaken in one direction along the transmission line - work fronts will move around along the 38 kilometre line route.

We will communicate with you and share additional information and details as we progress through construction.

### How long will it take to build?

Once construction has commenced, the entire project will take about 24 months to complete. The transmission line is expected to take about 14 months.





### How many people will be working on the project?

A wind farm project brings many direct opportunities for employment to the region during both the construction phase and ongoing operations once the wind farm is commissioned. Flow on employment benefits are also achieved as the project brings demand for local business services and consumer goods. Most regions have a range of businesses that will provide services to a wind farm project.

These include:

- Domestic level electricians;
- Transport operators;
- Competent machine operators;
- General labourers;
- Quarry and material suppliers; and
- Concrete businesses.

The Dundonnell Wind Farm project will directly employ more than 200 staff on site during construction, which will take about two years. Economic assessments indicate the multiplier effect will sustain about 1595 jobs per year throughout this construction period. Once operational, the proposed Dundonnell Wind Farm will employ 10 full-time staff during its 25-year operation.

Anyone interested in supplying local services or gaining employment is encouraged to register their interest on the goods and services register at the project website.

### What are the environmental benefits of the wind farm?

The Dundonnell Wind Farm will produce enough clean energy each year to power more than 155,000 homes and save the emission of roughly 670,000 tonnes of carbon. This is the equivalent of removing about 140,000 cars from our roads.

### What are the community benefits of the wind farm?

Tilt Renewables is committed to providing support for the local community through benefit sharing programs.

Work on a range of benefit sharing programs including a community fund will begin when construction of the project commences. The community fund will operate for the life of the wind farm and will be administered by a community-led group.

Further information relating to the shared benefit programs to be made available to the local and regional communities will be communicated over the next few months. These programs have been developed to address key social and education based needs in the region.

## Transmission Line

### How long will it be?

The transmission line will be about 38 kilometres long. The majority of the transmission line will be located on private property, while about 10 kilometres will be located within road reserves (namely Castle Carey Road and Mortlake-Ararat Road).

### Why will it zigzag instead of going in a straight line?

There are many factors that need to be considered during the planning of a transmission line. These include availability of land access (both public and private), infrastructure constraints, native vegetation, areas of cultural heritage significance, property configurations and dwelling locations, just to name a few.

During the development and approval phase of the project multiple alignment route options to connect the wind farm process to MOPS were investigated. This included the review of environmental, planning, safety and social impacts, as well as active engagement with local landholders along the proposed route options that were being investigated.

The EES and planning permit process further refined the alignment considering these factors.

### How many poles will there be?

Detailed design of the transmission line is currently being undertaken so the exact number of poles is still not known.

However, it is likely that there will be about 125 steel poles, which will be about 300 metres apart, over the 38 kilometres. There is a small section of transmission line between the new offsite substation on Connewarren Lane and MOPS, which spans about 600 metres and may include a number of lattice towers (the current design includes about two towers, up to approximately 70 metres in height) to facilitate the 500kV connection at MOPS.

### How big will they be and are they all the same?

The types of poles installed along the 220kV single or double circuit transmission line can generally

be split into two categories – strain poles and intermediate poles. Single circuit transmission lines traditionally consist of three conductors plus a conductor for lightning protection and telecommunications, while double circuit lines would generally be twice that.

It is anticipated that in the order of 30 per cent or less of the poles will be the larger strain poles. At a maximum, the strain poles may measure about 42 metres above ground level and have a base width of approximately two metres.

The strain poles are generally installed where the transmission line changes direction and/or crosses major roads or other infrastructure such as a powerline.

The height of the other intermediate poles is likely to range between 34 and 38 metres above ground level. The intermediate poles are generally utilised on the straight sections of the transmission line and have a base width between approximately 1.3 to 1.5 metres.

There is a small section (about 600 metres) of the transmission line between the offsite substation and MOPS which may include a number of lattice towers (the current design includes an estimated two towers, up to about 70 metres in height) to facilitate the 500kV connection at MOPS.

Some poles might require guy wires for support, however, the majority of poles will be designed to be free-standing.

While a pole without guy wires may be larger in size than one which has guy wires, it reduces the overall disturbance footprint of the transmission line, improves public safety around poles and reduces ongoing maintenance requirements.

### What influences the design of the transmission line?

The design of the transmission line (including the size of the poles) is influenced by numerous factors, some of which include:

- Voltage (e.g. 66kV, 132kV, 220kV), number of circuits, conductor (the wires) type/size, security level and design life requirements;
- Line length, spans between poles, changes in direction and topography;
- Structural loads due to the weight, wind, earthquake, ground water and others;
- Electrical safety requirements;
- Communication and earthing requirements;
- Temperature limits and fluctuations;
- Existing infrastructure constraints;
- Native vegetation, planning requirements, areas of cultural heritage significance, property configurations and dwelling locations;
- Road and traffic safety; and
- Fire safety.

### What standards will the line be designed to?

The transmission line has been designed and will be constructed in accordance with (but not limited to) the following primary standards and regulations:

- Australian Standard AS/NZS 7000:2016 – Overhead line design,
- Electricity Safety (Installation) Regulations 2009 (Victoria),
- Electricity Safety (Electric Line Clearance) Regulations 2015 (Victoria), and
- The Road Management Act 2004.

### Why steel poles?

The Dundonnell Wind Farm transmission line will utilise steel poles which will meet all the required standards. The steel poles are likely to consist of three individual sections which fit together on site.

Delivering the poles in sections means they can be transported using conventional trucks and trailers, rather than more complicated over-dimensional transport methods.

The use of steel poles for the 220kV transmission poles will also have less environmental and visual impact than lattice tower structures that may be used for transmission lines of this voltage or higher.

However, we do note that there is a small section (approximately 600 metres) of the transmission line between the offsite substation and MOPS which may include a number of lattice towers to facilitate the 500kV connection at MOPS.

### Why can't it be underground?

Typically, it is cost prohibitive to install transmission or distribution lines underground for the distances contemplated by many projects of this nature. There could also be a significantly greater environmental impact installing a transmission line underground – as laying cables could impact a far greater area of native vegetation or other environmentally sensitive areas due to trenching and the process of undergrounding the lines.

### Can more than one wind farm share the same transmission line?

In theory, more than one wind farm can share the same transmission poles. This does, however, require both wind farm proponents to be fully committed to construction of these projects at or around the same time, including full coordination and agreement on the transmission line contractor(s), design, construction and operational contracts.

There are a significant number of commercial, technical and regulatory considerations associated with these types of arrangements which add to the complexity and difficulty in facilitating the sharing of infrastructure.

There is currently no single mechanism (i.e. across planning and environment and network planning regulatory systems) which facilitates the coordinated network planning of transmission infrastructure required to connect energy generation projects (renewable or non-renewable) to the National Electricity Market.

The Minister for Planning is responsible for assessing all planning permit applications associated with a wind farm (including native vegetation removal to construct a transmission line).

Tilt Renewables is in active discussions with Woolnorth Wind Farms regarding the potential for sharing parts of the transmission line with the Mt Fyans Wind Farm.

“We will be able to provide more information on the outcome of these discussions over the coming month”.

### Who is building and will be responsible for the transmission line?

The new transmission line will be designed, built, owned and operated by AusNet Services. AusNet Services will engage a contractor to construct the line.



Above: Indicative single circuit steel suspension pole 31m



Above: Indicative double circuit steel pole



Above: Indicative double circuit steel pole

### What provides the Transmission Network Service Provider with the right to design, build, own and operate 'private' transmission lines?

Transmission Network Service Providers hold electricity transmission licenses, granted by the Essential Services Commission. If available and suitable for the specific projects, road reserves can be used by utilities for the installation of transmission lines.

### Who pays for the transmission line?

While the transmission line will likely be designed, built, owned and operated by Ausnet Services, Tilt Renewables will pay for the installation and ongoing operation and maintenance of the network connection infrastructure.

### Some of the poles are in the road reserves. Is road safety and flooding considered?

Road safety is considered in the design and placement of poles in road reserves and must be reviewed by local Council and VicRoads engineers who need to be satisfied that appropriate design and safety requirements are met (e.g. VicRoads standards).

To construct the sections of the transmission line in road reserves, works within road reserve permits will be required from VicRoads and the Moyne Shire Council.

These will be obtained prior to construction commencing. The shire and VicRoads will inspect the poles located in road reserves during and following their construction.

### How will bushfire safety be considered?

The transmission line will be designed to meet or exceed appropriate design and safety standards. The Transmission Network Service Provider will apply electricity industry best practice to the maintenance of the transmission line (including, for instance, vegetation clearance) and ensure all required regulations in relation to electricity safety and bushfire mitigation are met (such as Energy Safety Victoria requirements).

For instance, once the transmission line is built, it will be managed in accordance with an Electricity Safety Management Scheme for the Victorian Transmission Network, which must be accepted, approved and audited by Energy Safety Victoria on a regular basis.

### What inspections or checks will be undertaken during and after construction?

Compliance audits will continue to be conducted during construction by the Transmission Network Service Provider, Tilt Renewables, WorkSafe Victoria, the Office of Aboriginal Affairs and the Department of Environment, Land, Water and Planning as well as others as required.

The Transmission Network Service Provider must submit commissioning and compliance documentation to the relevant authorities to energise the transmission line, including the Australian Energy Market Operator (AEMO).

The transmission line can only go 'live' once AEMO is satisfied their requirements are met.

