Koyuga Nanneella Community Discussion

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Welcome

We understand there are many different views on climate change throughout the community.

Not many people disagree with sustainability and working to find sustainable energy solutions that are cheaper and reliable.

- Fera Background
- Who is Fera Australia / our commitment to making the project a success landowners and the community
- Planning Process
- Local Jobs and Services,
- Environmental Benefits
- Project Area under investigation and Timeline
- Technical elements of a wind farm project
- Community and Stakeholder Updates and inputs
- Community Benefits, local houses and wider community
- Questions / Discussion

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Australia’s transition to sustainable sourced energy

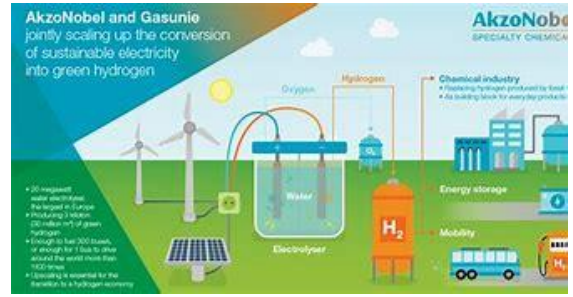
For Australia to move to carbon free energy we will need a combination of:

Solar large array and rooftop

Wind (Offshore and Onshore)

Pumped Hydro and Batteries

Green Hydrogen.



FERA Group

Founded in 2001, **FERA SRL** is a privately owned company, operating in the **development**, **construction** and **management** of **renewable energy plants.** **FERA** has management expertise in the control of key **competences of the whole process**, from the identification of sites to the production of energy.

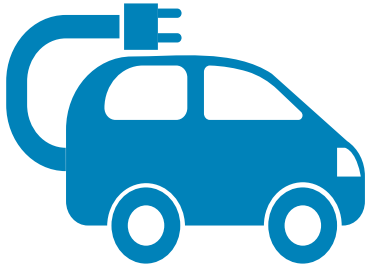
Track record of growth

- Company established 2001, First project operational 2006 to today 16 projects for energy production.
- Proven ability to **create value.**
- Among the top 20 Italian wind energy developers for installed MW*.

(GSE statistics, among the most efficient wind farms in Italy)

FERA Australia

Established in 2019 the Fera Australia seeks to establish a pipeline of projects in Australia.
Projects that provide increasing levels of renewable energy into the Australian Market.
The company is an Australian company and is based in Melbourne.



FERA, through its subsidiary **RICARICA** joined the electric car charging service and up to date, it has about **42 charging points** that offer **energy** obtained from **renewable sources,** at the most competitive prices on the Italian market.

MISSION

To **generate electricity** from **renewable sources**, efficiently and sustainably, in **perfect integration** with the **landscape** and its **community**

Comparing the cost of Energy Production

Annual wholesale electricity prices fall by 59% as households face surging power bills

New figures from the Australian Energy Market Operator (AEMO), which runs the national electricity market for the eastern states, show wholesale electricity prices fell to **$108** per megawatt hour in the June quarter, compared to the **$264** per megawatt hour average seen last year when the National Electricity Market was suspended.

The quarterly report also said renewable energy sources — specifically wind and solar — along with less volatile market conditions and improved generation ability had put downward pressure on wholesale prices.

"The drivers of those changes in the prices are really threefold," Daniel Westerman, Chief Executive of AEMO, told RN Breakfast.

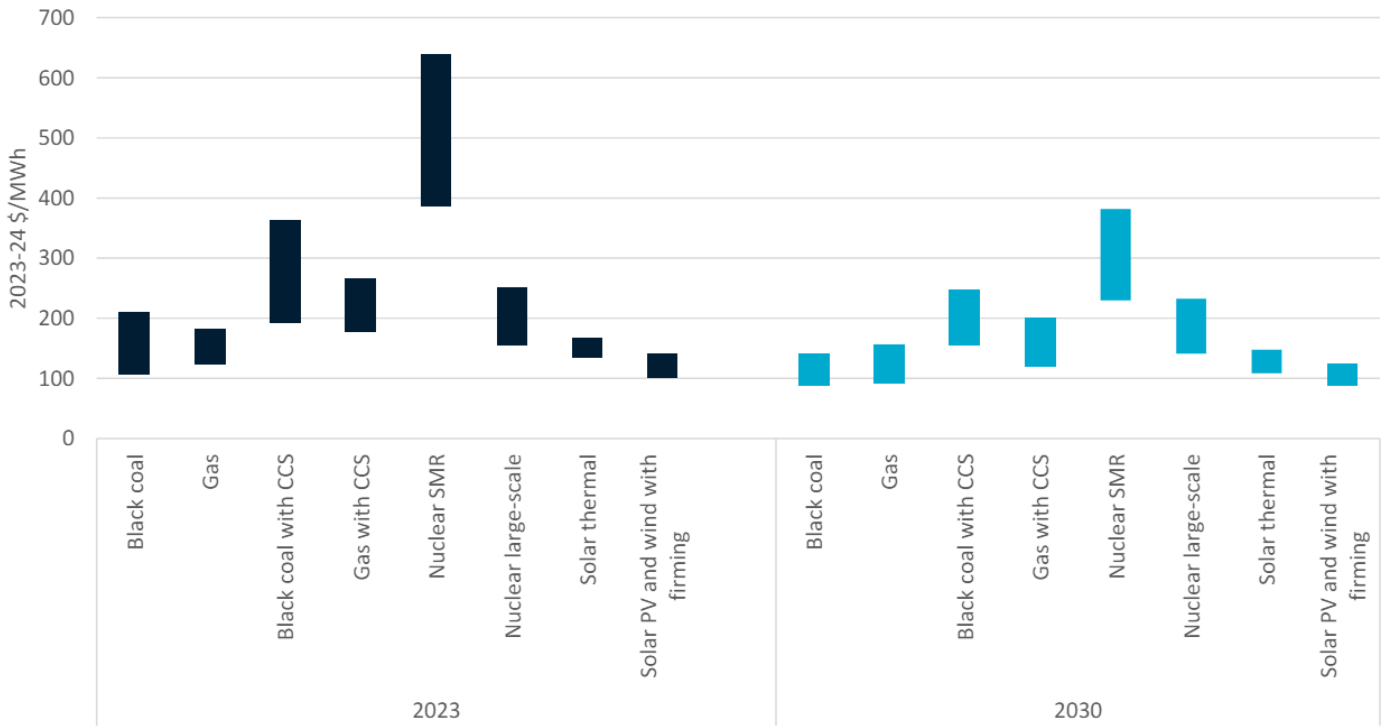
"The first is that coal-fired power stations, which still supply about 60 per cent of Australia's energy, are down because coal prices are down.

"The second thing is that we've had more coal plant availability, so it's been there when we need it.

"The third is that we've seen more and more renewables come into the system, and those renewables, as we know, really do push prices down."

Link to the article: Annual wholesale electricity prices fall by 59 per cent as households face surging power bills - ABC News

CSIRO's GenCost 2023-24 summarises the costs of different energy generation:



ES Figure 0-3 Calculated LCOE by technology and category for 2023 and 2030

Link to the report: https://www.csiro.au/en/research/technology-space/energy/GenCost

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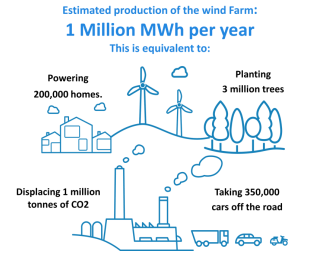

Planning Process

Group 1 Reports
Reports to inform the indicative Project Layout

Group 2 Reports
Preliminary reports to support Environmental Effect Statement

Group 3 Reports
Final reports to inform the final decision on the Project

Current Stage

Pre-Referral
9-12 months

Referral
3-5 months

Scoping
6-12 months

Preparing the EES
12-24 months

Public Review & Inquiry
5-8 months

Department Assessment
1-6 months

Minister's Decision & Planning Permit Issued

Preparation of Planning Permit Application

Planning Submission

Public Notice

Ongoing Community Consultation and notification

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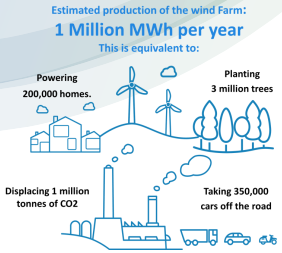
Environment benefits to Victoria

- Renewable power for 200,000+ homes
- 600,000-750,000 Tonnes CO_2 saved every year
- Equivalent of taking 350,000 cars off the road or planting 3.5 million trees



Local Investment

- 5 Year forecast investment into Regional Victoria
- $0.5-0.75 B

Local Jobs

- 10-20 full time local staff
- 350-550 Construction
- Up to 1000 indirect local jobs

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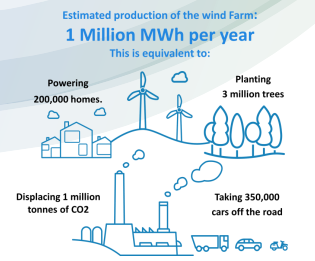
JOBS



Studies

- Noise
- Aviation
- Shadow Flicker
- Ecology (flora and fauna)
- Traffic and transport
- Cultural Heritage
- Geotech

Roads and Access

- Quarry Materials
- Concrete Supply
- Road construction
- Electricians, fabricators
- Apprentices, labourers
- Crane operators
- Project managers
- Engineers

Indirect Local Jobs

- Local services
- Real estate / housing
- Sport and entertainment
- Medical, education. services
- Food and local retail

Maintenance

- Fencing
- Ongoing Ecology (bird and vegetation)
- Turbine maintenance (trade)
- Road maintenance
- Local Fera Office staff

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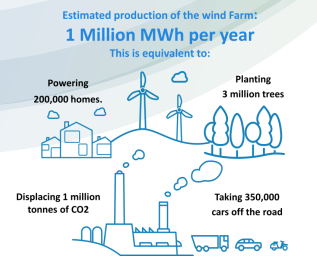

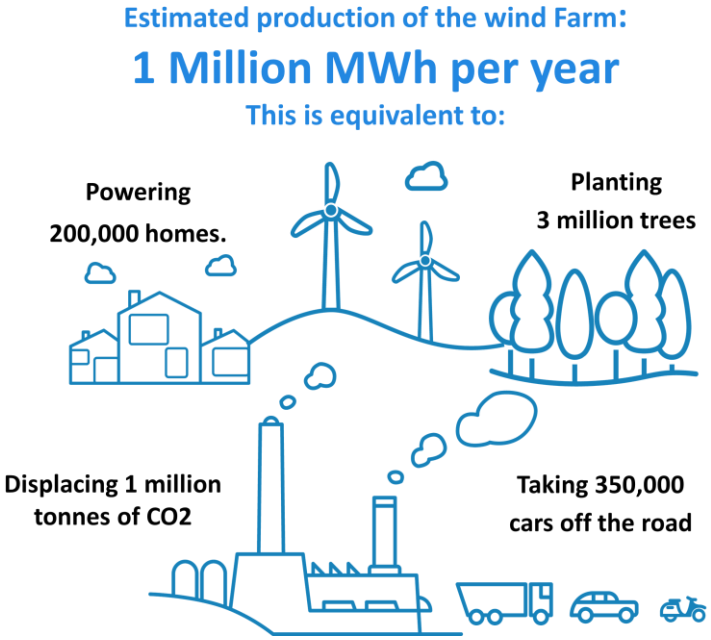

Local Community Benefits

- 100% of energy needs across the municipality generated locally
- Local investment in housing and services
- Local jobs
- Improved energy security across the municipality
- Potential for new industries in area
- …

Victorian policy context: accelerating towards net zero and a fully renewable energy grid.

Victoria has strong targets for renewable energy generation. The Renewable Energy (Jobs and Investment) Act 2017 (Vic) set renewable energy targets of:

- **25%** by 2020 (achieved)
- **40%** by 2025
- **65%** by 2030
- **95%** by 2035

To meet these targets, the energy market modelling undertaken by the Victorian Government indicates that significant additional renewable generation is needed; specifically, in Victoria:

- An additional 4,000 MW of large-scale capacity is required by 2030
- An additional 18,300 MW of large-scale capacity (including energy storage and large-scale renewable capacity) is required by 2040.

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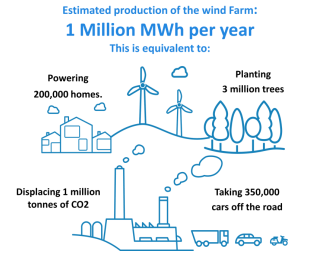
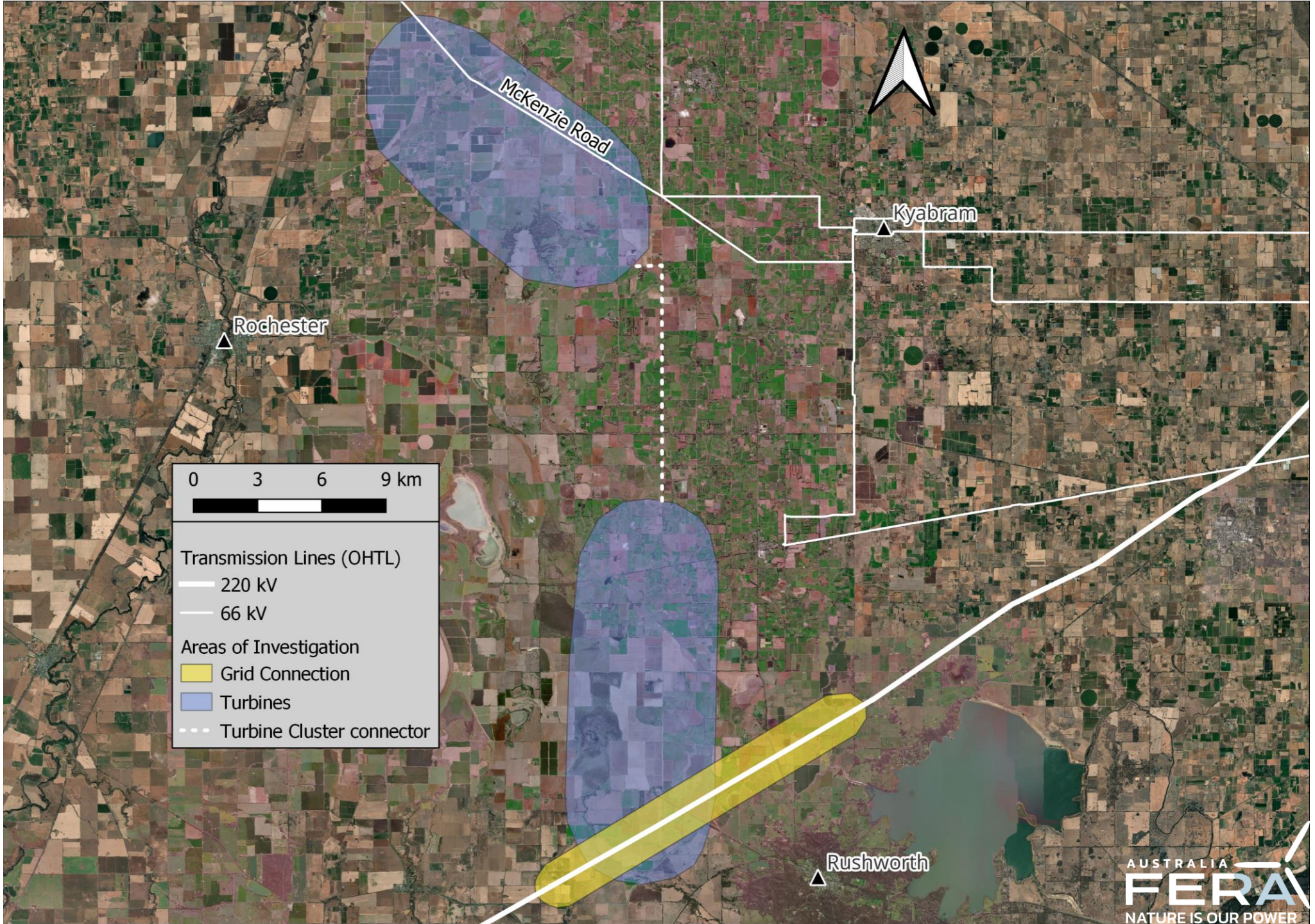
CO_2


Estimated production of the wind Farm:
1 Million MWh per year
This is equivalent to:
Powering 200,000 homes.
Planting 3 million trees
Displacing 1 million tonnes of CO2
Taking 350,000 cars off the road


McKenzie Road
Kyabram
Rochester
Rushworth
0 3 6 9 km
Transmission Lines (OHTL)
220 kV
66 kV
Areas of Investigation
Grid Connection
Turbines
Turbine Cluster connector
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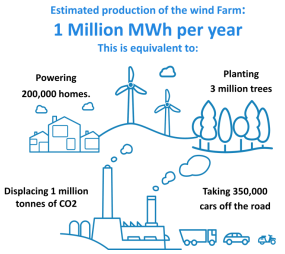
Project Timeline



- AEMO Initial Connection meeting held, with promising feedback.

2025/ 2026

- Investigate site and land for wind farm infrastructure.
- Wind Monitoring, 1 Mast / 3 Sodar (variable locations)
- Finalise Substation location – Grid Connection route / Easement agreements

2025-2027

- Impact assessments, e.g. Ecological and Heritage investigations / reporting
- Civil / Electrical preliminary design investigations, Geotech, planning of access roadways, electrical easements…

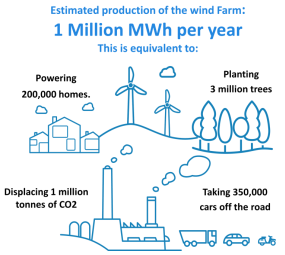
2027-2028

- Ongoing monitoring programs
- Finalise Planning Submission (Submission 2028)
  12 – 18 month process in DEECA / EPBC Referral.

2028-2030 CONSTRUCTION & COMMISSIONING

Community

When will community consultation begin and what activities are planned?
How do community members ensure they are included in the consultation process?
What other engagements are planned? E.g. environmental groups, local airports etc.



> *"Almost 40% of our energy already comes from renewable sources… …Australia has a clear plan – backed by Federal and State governments – to shift to renewable energy. For many of the communities they are seeing renewable energy projects in their region for the first time. Research shows community anxiety is highest in the period when projects get announced and when they are actually built and operating. We all know change creates uncertainty. Sometimes this can be difficult to judge for communities. Tougher still is when callous political strategists seek to increase the stress and worry of concerned groups with intentional misinformation…"*
>
> **The Australian: 11 June, 2024**

Fera Australia is a member of the Clean Energy Council and have signed our commitment to the Best Practice Principles by which to operate. These include accountability, and transparency. These are fundamental to Fera's mission and beliefs. Fera Australia plans, builds and operates projects as long-term partnerships with the local community. This is the first meeting in the area, and we will look forward to working with the community to make a project that we are all proud of.

- Regular local meetings, commencing 1/7/24 and running every 3 - 4 months.
  - Commitment to meet with every landholder / resident in the project area.
  - Regular schedule of meetings with residents and stakeholders across the project area.
- Community and Stakeholder database established, created a register of project questions and feedback.
- Create local register of skills, services and implement "Buy Local Program"
- Establishing a Community Consultation Committee (CCC)
- Establish a project website portal, including a register of key questions and answers

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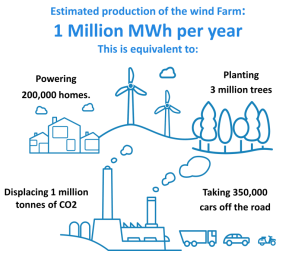

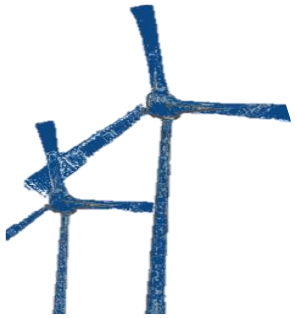

Community Benefit Program

Support for local houses close to the project infrastructure,

(1-3 km from wind turbines or transmission lines)

- Construction Payment: $15,000 per property

Annual Energy Support,

(1-5 km from wind turbines or transmission lines)

- Annual Energy payment per property: $1,000-2,000 per property

Wider Community Benefit Program

Establish Community Committee (CCC) to manage annual projects:

[Dedicated annual budget funded]

- CFA / local schools / Sports clubs / community facilities, Landcare &environment programs

Base Projects:

- Comms network installed across project area
- Free charge stations, powered by wind energy

Health Impacts of burning fossil fuels

Air, Water pollution: According to the world health organisation 6 million people die each year because of pollution. By far the majority of global pollution is created by burning hydrocarbons. In 200 years, we have exhausted more than half of the world's hydrocarbon fuel resources.

Reduction in premature deaths (NSW CSIRO 2020 Study)

One of the deadliest pollutants from coal power stations is fine particulate matter, or PM2.5, which is known to increase the risk of heart attacks, strokes, cancer, and respiratory illnesses. …

*… The study estimated long-term exposure to fine particle pollution caused **420** premature deaths in the state each year, attributing **45** of those to coal-fired power stations.*

--- Pollution not only causes deaths but also leads to poor health and quality of life outcomes, according to Sydney University environmental epidemiologist Geoff Morgan who was involved in the study.

"We estimated that air pollution is responsible for around 6,000 years of life lost," he said.

"Put another way, if taken as an average, it means everyone loses 50 days of life.

"And around 10 per cent of that could be attributed to the air pollution from the power stations."

In Victoria the Latrobe Valley coal power stations are responsible for significant health issues in east Gippsland.

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Technical Detail

Cristiano Diaz – Project Manager

Construction Process

The Construction of a Wind Farm, includes the following main activities:

CIVIL WORKS

- Access roads,
- Crane and equipment hardstands,
- Turbine foundations

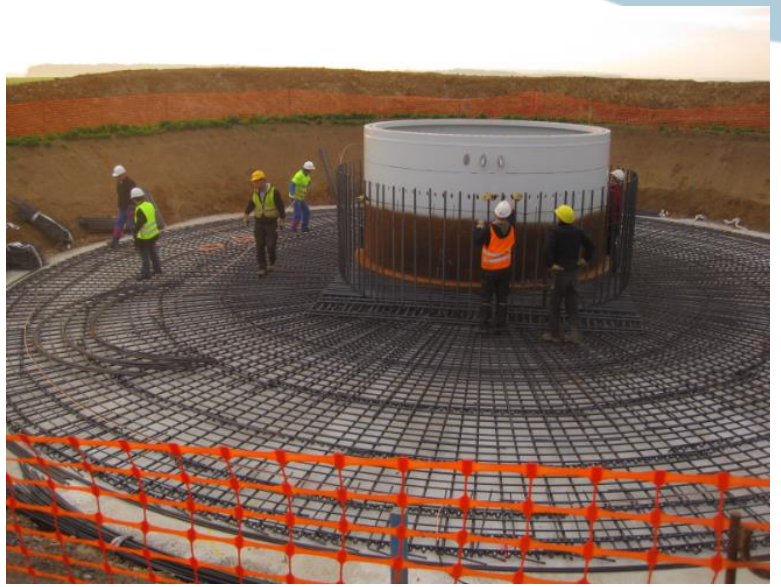
ELECTRICAL WORKS

- Cable Trenches and reticulation

MECHANICAL INSTALLATION

- Wind Turbine Generators (WTGs)

ELECTROMECHANICAL FINISHING AND COMMISSIONING



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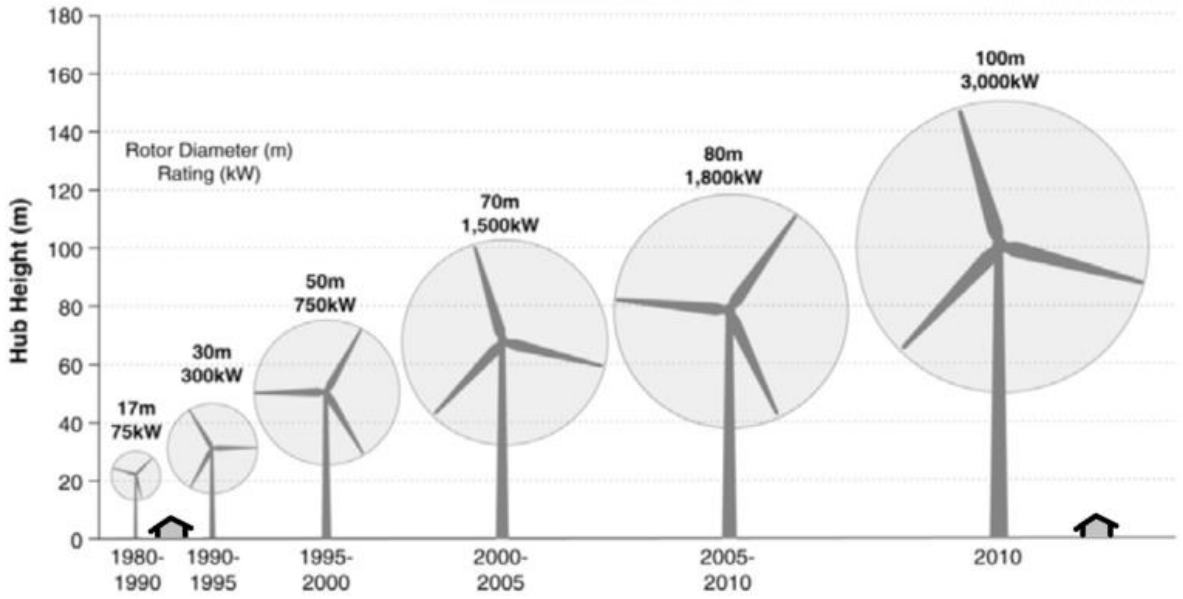
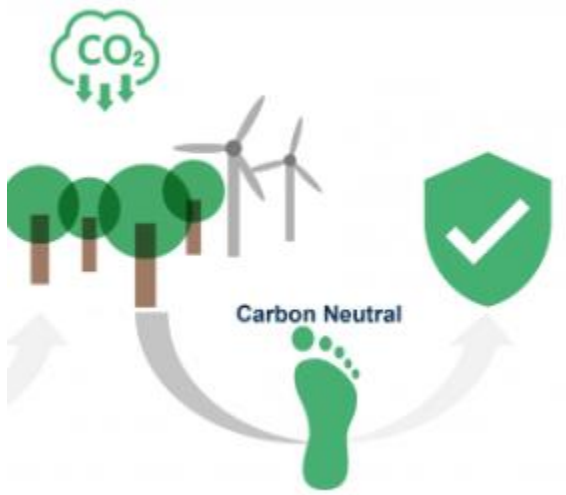
Dimensions

Wind turbines are large in size but generate a substantial amount of energy.

In this project, we plan to install turbines with a capacity of approximately 7 MW, with hub heights between 120 and 180 metres and rotor diameters of 175 meters (85-meter blades).

Each turbine of this size can power around 4,000 homes and offset carbon emissions equivalent to 60,000 trees (a small forest).





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Farming and Turbines

A wind farm is fully compatible with current land uses. Numerous properties host wind turbines with minimal impact on farming activities.

The area occupied by a wind turbine is insignificant compared to the total scale of each property.

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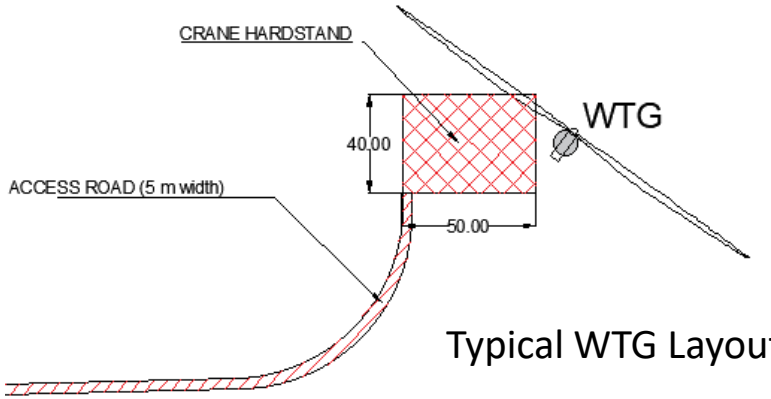
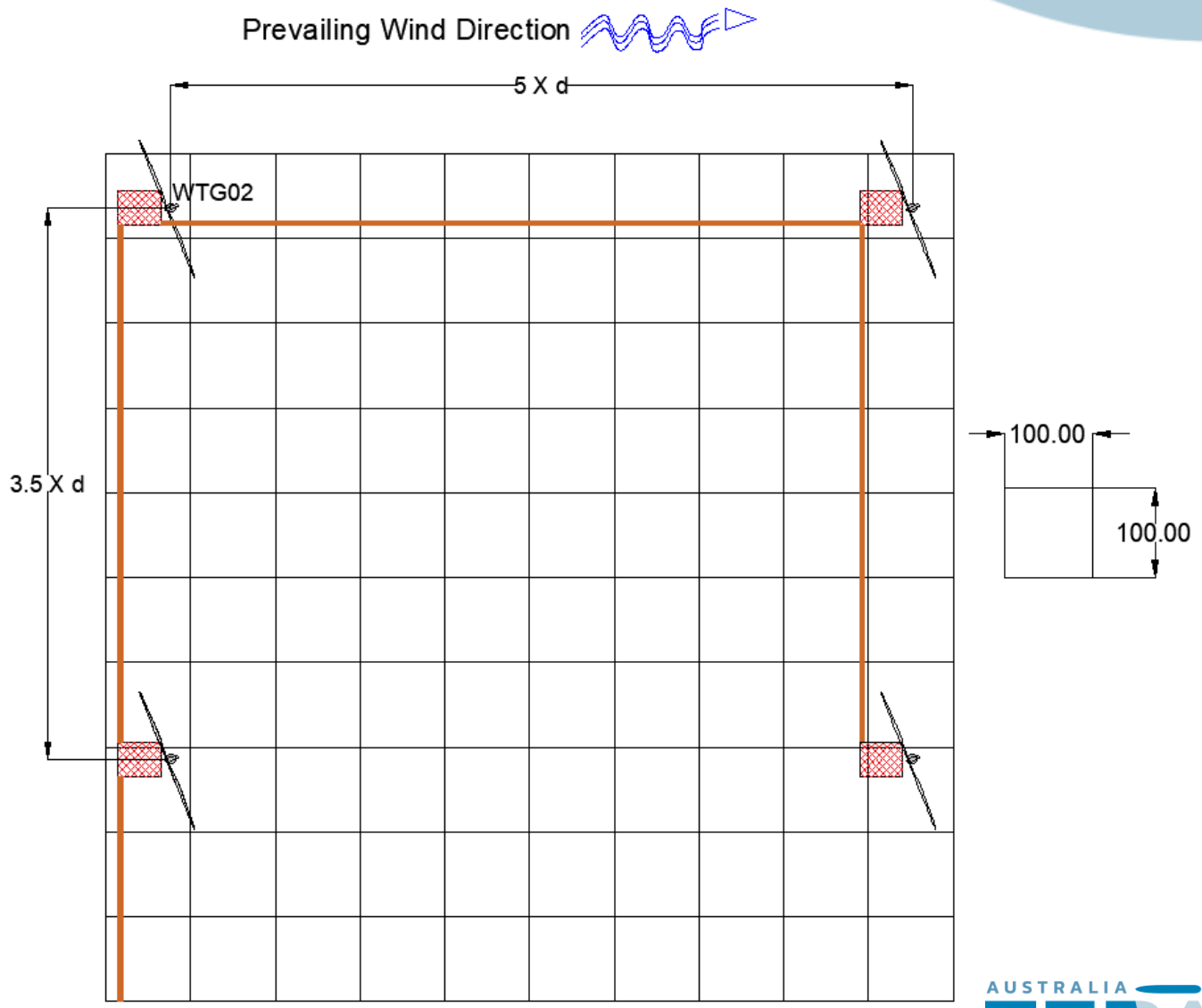
Surface Consumption



Typical WTG Layout



Indicative example of WTG separation and surface consumption

- Parallel to Wind: 5 diameters
- Orthogonal to Wind: 3.5 diameters
- Plot surface 100 hectares (1 square km)

Surface utilized by the wind farm:

- Wind Turbine footings: 4 x 350sqm	= 1,400
- Access roads: 5m width	= 11,150
- Crane Hardstands: 4 x (50m x 40m)	= 8,000
TOTAL	**20,550 sqm**

SURFACE CONSUMPTION: 2.05% approx.*

*100-hectare reference area.

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Surface Consumption

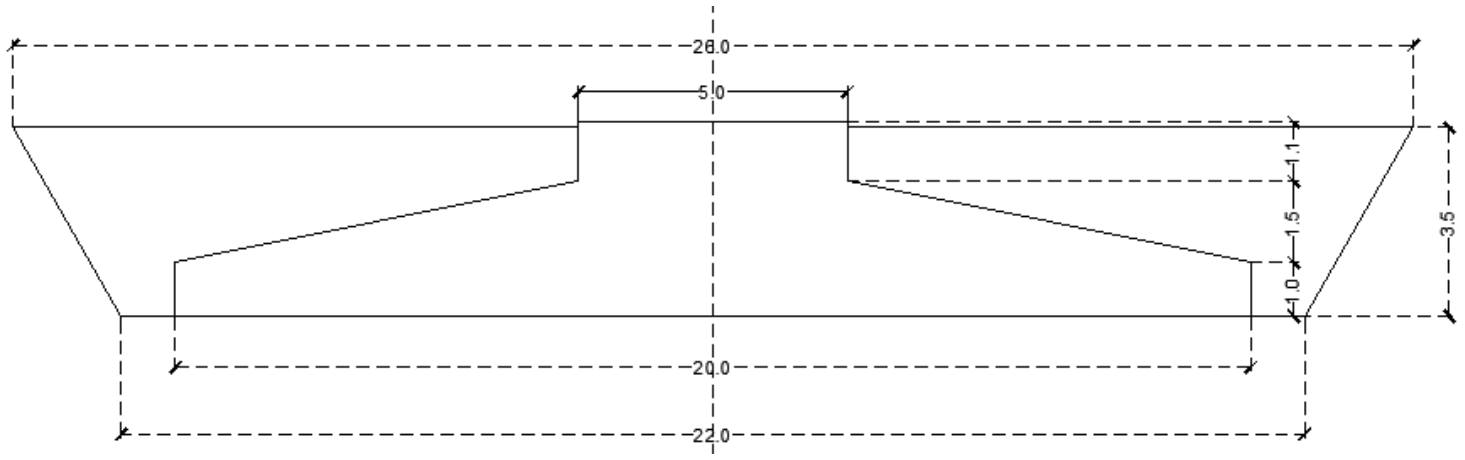
Example applied on an existing plot

- Plot surface: 58 hectares

- Wind Turbine's footing: 2 x 350 sqm = 700
- Access roads: 5m width = 7,200
- Crane Hardstands: 2 x (50m x 40m) = 4,000

TOTAL **11,900 sqm**

SURFACE CONSUMPTION: 2.05% approx.*



Example WTG Foundation

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Construction Time Schedule

		Month 1				Month 2				Month 3				Month 4			
TASK	(* Hypotesis of 2 WTGs)	CW01	CW02	CW03	CW04	CW05	CW06	CW07	CW08	CW09	CW10	CW11	CW12	CW13	CW14	CW15	CW16
1	Site Preparation	X															
2	Earthworks		X	X													
3	Execution of Access roads			X	X	X	X										
4	Foundation works						X	X	X								
5	Cable Trenches								X	X	X						
6	Mechanical erection of WTG01											X					
7	Electromechanical finishing of WTG01												X	X			
8	Commissioning and ramp up of WTG01														X	X	
9	Mechanical erection of WTG02												X				
10	Electromechanical finishing of WTG02													X	X		
11	Commissioning and ramp up of WTG02															X	X

A Wind Farm Construction site has 2 typical working areas:

A) Civil and Electrical BoP (Balance of Plant): Access roads, cable trenches and concrete works.

B) Mechanical erection of the Wind turbines, electromechanical finishing, commissioning and ramp up.

The mechanical erection of the wind turbines is the most critical phase of the construction process. This involves managing heavy lifts with one main crane, assisted by smaller auxiliary cranes and additional equipment. Typically, a single wind turbine is installed within one week. After completion, the cranes and equipment are moved to the next installation site. This process is repeated in sequence until all turbines are installed.

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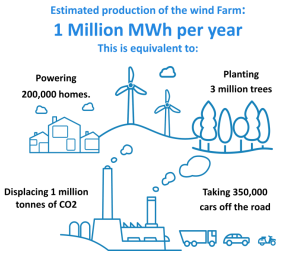

General Discussion

Questions and Answers

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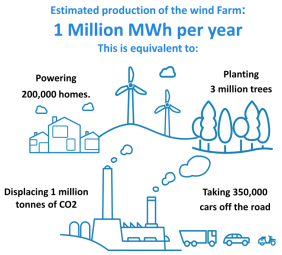
Turbine Placement (Questions 26/6/24)



How many turbines do you have planned for the project in this area? Where are these to be located? I.e. provide details of road boundaries of the proposed sites? What is the proposed height of the towers (including blades).

The investigation for turbines and their locations will continue through 2024. All turbines will be placed more than 1km from homes.

Currently we think the number of turbines will be between 20 – 25 in each area.

The turbine nacelle will be 120 – 180m high with circa 85m blades.
Each turbine will generate power for 4,000-5,000 homes depending on the final turbine selected.

Who would be responsible for the ongoing maintenance? What happens at the end of the turbine's life? Is it replaced or disassembled? Who is responsible for that?

Fera would be responsible for all roads involved in the project for the life of the project:

- Existing local roads
- Upgrade of existing internal farm tracks
- New tracks

Tracks and roads will be designed to allow the transport of the turbine and wind related infrastructure to the final locations for each turbine. These roads will be designed to ensure there are no runoff issues. The roads will be maintained throughout the project by Fera.

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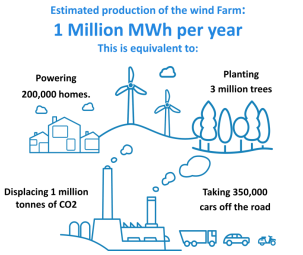
Connection (Questions 26/6/24)



Where does the power get connected? What are the proposed routes for the transmission towers? How high will the towers be?

Planning for the connection of turbines will be developed when the final turbine layout is known. Connection between the turbines is underground and a transmission line will be constructed connecting the northern area to the southern area and the main transmission lines.

The expected height of the transmission line is 35-40m.

What mitigation/plans are prepared for floods?

The geology, water table and flood considerations will be part of the detailed engineering design. Roads will be designed to ensure that flooding in the area is understood, and the footings and pavements built to withstand flooding. Fera will also maintain any damage to all roads under its management.

What vibrational impact and noise studies will be conducted on the surrounding wildlife, farm animals and people? Is an independent study planned? If so, when will this occur.

There are no vibration impacts caused by wind turbines. Independent experts will be engaged to conduct detailed flora and fauna studies over each season for 2 years to ensure the local ecology is understood and any impacts of the project are minimised. Work will also investigate programs and projects that can be pursued across the area to ensure the project has a positive impact on the area's ecology.

All studies will be shared with the community and published to the Fera Australia website.

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Environmental Impacts,

Noise monitoring will ensure that impact from noise for the project is minimised and meets all Victorian guidelines.

Noise Impacts

Turbines continue to increase in size and reduce their noise levels.
Blades rotate at 5-10 revolutions per minute

- Noise levels at 300m, ~ 40-50 dbA
- Noise levels at 500m, ~ 30-45 dbA
- Noise levels at 1000m, ~ 25-40 dbA

(example: leaves rustling in trees is 30-40 dbA)

Noise Monitoring:

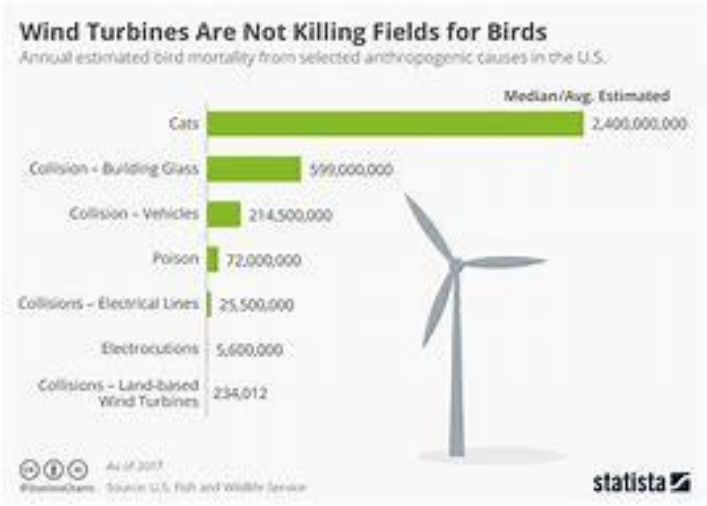
A Background Noise Monitoring Report and Environmental Noise Assessment will be conducted for the project in accordance with the requirements Clause 52.32-4 of the Planning Scheme.

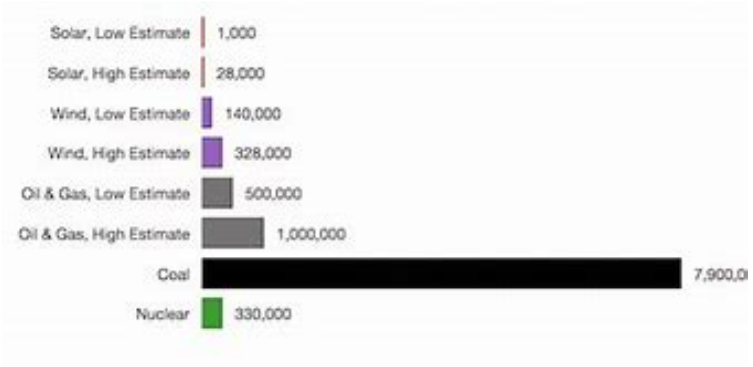
The process for the noise assessment has the following steps:

- Assess the background noise levels at residential properties
- Establishing the background noise levels
- Model the level of noise expected to result from the wind farm infrastructure and compare it to the background noise monitoring.
- Ensure the project is below the noise requirements and complies with all guidelines and legislation.
- Background noise monitoring is expected to commence in 2025.

Environmental Impacts - Birds,

We are working on detailed ecology investigations that ensure that the wind farm project minimises impacts on the local bird and bat populations.





Science, Sept. 2019

The first-ever comprehensive assessment of net population changes in the U.S. and Canada reveals across-the-board declines that scientists call “staggering.” All told, the North American bird population is down by 2.9 billion breeding adults, with devastating losses among birds in every biome.

Forests alone have lost 1 billion birds. Grassland bird populations collectively have declined by 53%, or another 720 million birds.

New Audubon Science: Two-Thirds of North American Birds at Risk of Extinction Due to Climate Change Oct 2019

“Two-thirds of America’s birds are threatened with extinction from climate change, but keeping global temperatures down will help up to 76 percent of them. There’s hope in this report, but first, it’ll break your heart if you care about birds and what they tell us about the ecosystems we share with them. It’s a bird emergency,” said David Yarnold, (@david_yarnold), CEO and president of Audubon.

Janet Gardner, CSIRO and Suzanne Prober, CSIRO September 29, 2022

Heatwaves linked to climate change have already led to mass deaths of birds and other wildlife around the world.

Predictions:

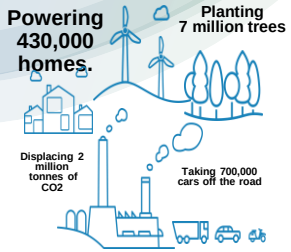
- 1 Deg increase, survival rate 43%
- 3.7 Deg increase, survival rate 11%

Bird deaths – by energy source

For every 10,000 bird deaths caused by humans less than one is caused by wind turbines.

Planning: (Questions 26/6/24)

Is an independent study planned? If so, when will this occur and will the findings be made public? What other studies have you completed on any other projects and will these findings be made available?



Below is a list of Investigations / Reports:

Group 1 Reports/Information/Advice will be used to inform the Site Layout (i.e. micro-siting of turbines and infrastructure to avoid areas of highest sensitivity/constraint)

- Biodiversity/Ecology (Flora & Fauna) (i.e. identifying no-go areas)
- Cultural Heritage (i.e. identifying any no-go areas)
- Desktop Geotechnical
- Bushfire

Group 2 Reports/Advice (to be prepared in relation to the micro-sited layout plan, and to respond to the EES Referral criteria & EES referral form)

- Biodiversity/Ecology (Expand upon Group 1 work to include findings of survey work to date, addressing EES referral criteria)
- Cultural Heritage (Expand upon Group 1 work Preliminary assessment of cultural heritage obligations)
- Desktop geotechnical (same info as prepared in Group 1)
- Bushfire (same info as prepared in group 1)
- Noise / vibration
- Preliminary Landscape and Visual Impact Assessment
- Traffic
- Water / Hydrology
- Desktop Aviation
- Land use planning
- Consultation plan

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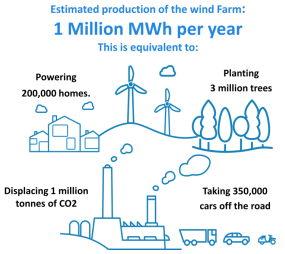
Turbine Placement (Questions 26/6/24)



How much land, population and environment will this project affect? Including those within 10+ kilometres. This includes the impact from noise and vibration from the turbines and blades.

It is very early in the process – once we have the initial turbine locations worked out, we will be able to define the area. Typically, the combined consumed by wind turbines will be approximately 2% of the land in the project area. All farming activities will continue as the currently do.

The project will provide long term sustainable income for the farms involved and community funds will be established to ensure the local neighbours to the project benefit and the wider community funds create legacy projects in the area.

How much funding are you receiving from the state or federal government per turbine?

Zero – there is typically no state or federal funding for wind projects.

How are the neighbouring properties protected from potential fire hazards?

As part of the project planning a detailed Bushfire and Fire Management Plan will be developed in consultation with the local CFA. This will include access and communication plans.

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Climate Change has had a dramatic impact on the weather and increased the frequency and severity of extreme events.

Fires in Canada have burnt more than 25,000,000 km^2,

(England is 33,000,000 km^2 So that is the equivalent of

Tornados have hit California for the first time in 80 years causing major flooding.

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Government Policy and Subsidy

Accelerating towards net zero and a fully renewable energy grid.

Victoria has strong targets for renewable energy generation. The Renewable Energy (Jobs and Investment) Act 2017 (Vic) set renewable energy targets of:

- **25%** by 2020 (achieved)
- **40%** by 2025
- **50%** by 2030 (with an increase to **65%** identified as a planned legislative amendment)
- **95%** by 2035 (planned legislative amendment).

To meet these targets, the energy market modelling undertaken by the Victorian Government indicates that significant additional renewable generation is needed; specifically, in Victoria:

- An additional 4,000 MW of large-scale capacity is required by 2030
- An additional 18,300 MW of large-scale capacity (including energy storage and large-scale renewable capacity) is required by 2040.

This is more than the currently installed capacity of wind and large-scale solar PV across the entire National Electricity Market today and is equivalent to a build rate of around 1,500 MW of new capacity per annum in Victoria alone, equivalent to multiple large-scale wind / solar plants each year.

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Government Policy and Subsidy

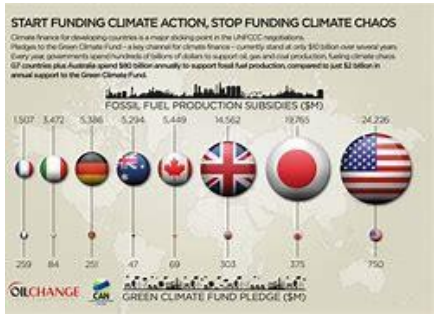
The subsidy for fossil fuels in Australia was $11.6B in 2021 and increasing, wind projects in Australia typically are funded by private companies and do not receive any subsidy from the government.

Link re subsidies: [Australian fossil fuel subsidies surge to $11.6 billion in 2021-22 - The Australia Institute]

In the USA the government have introduced the Inflation Reduction act. This has seen a resurgence of US based manufacturing (a reversal of jobs and production going to Asia) and is accelerating the change from fossil fuel to renewable energy. In the USA and Australia, the last 30 years have seen jobs, especially in manufacturing move overseas. The USA are succeeded reversing this trend, they are moving the jobs back to the USA, even to the extent of car manufacturers from Asia setting up manufacturing plants in the USA.

Link re USA policy: [Inflation Reduction Act Guidebook | Clean Energy | The White House]

Whilst Australia has major deposits of lithium, nickel, cobalt … all the minerals required for battery manufacture. The mining revenue is great, Australia is currently missing a big opportunity to manufacture the minerals into batteries benefiting from the value adding industry.



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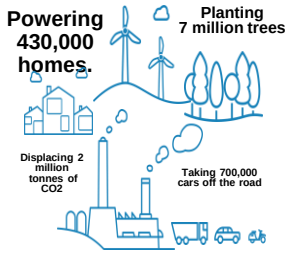

Questions

Thank You

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A photo of Fera's Olive picking day below in Upton Hill. The background to this weekend was to replicate a tradition in the Fera company.

In Italy, the company comes together and picks olives that are crushed and turned into oil. The oil is then given out as Christmas gifts.

On a weekend late in May the team came together and had a day picking olives. The olives were crushed locally in Yea and the oil is going through a settling period and then will be bottled and shared.

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