



NAVARRE
GREEN POWER HUB

Community Information Booklet

November 2024

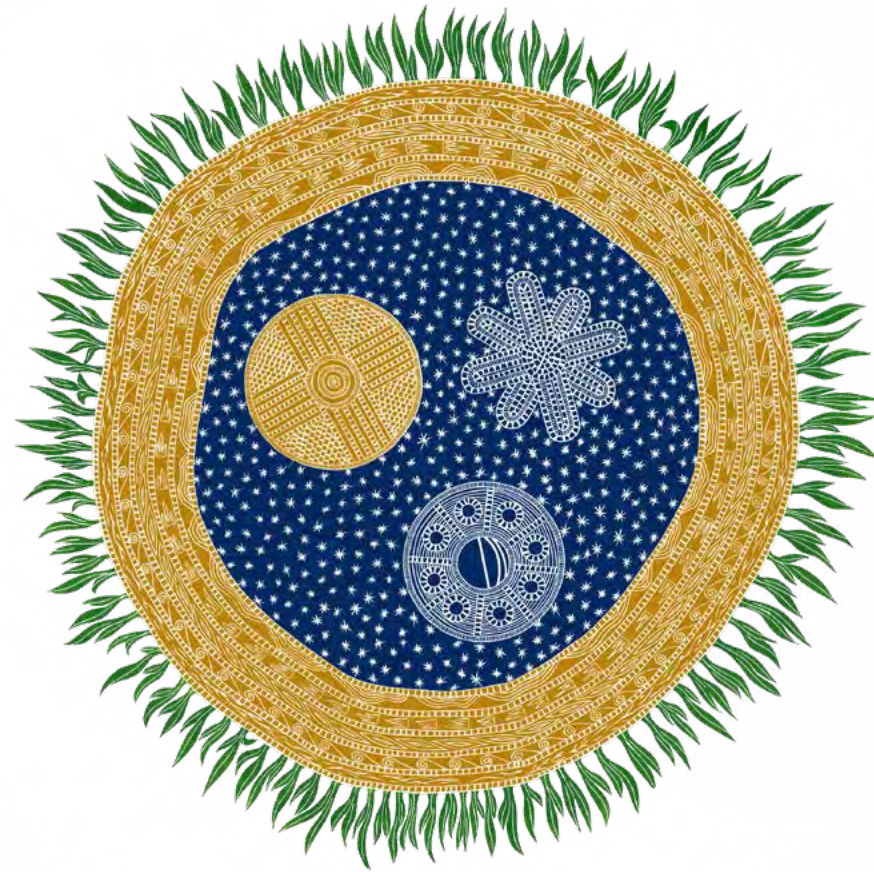
NEOEN

Acknowledgement of Country

Neoen acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to land, waters and culture.

We pay our respects to their Elders – past and present.

In particular, we acknowledge the Wotjobaluk people, Traditional Owners of the lands on which the Navarre Green Power Hub will harvest and store the energy of the wind.



RAP ARTWORK

Celebrating Renewal

Teho Ropeyarn, 2022

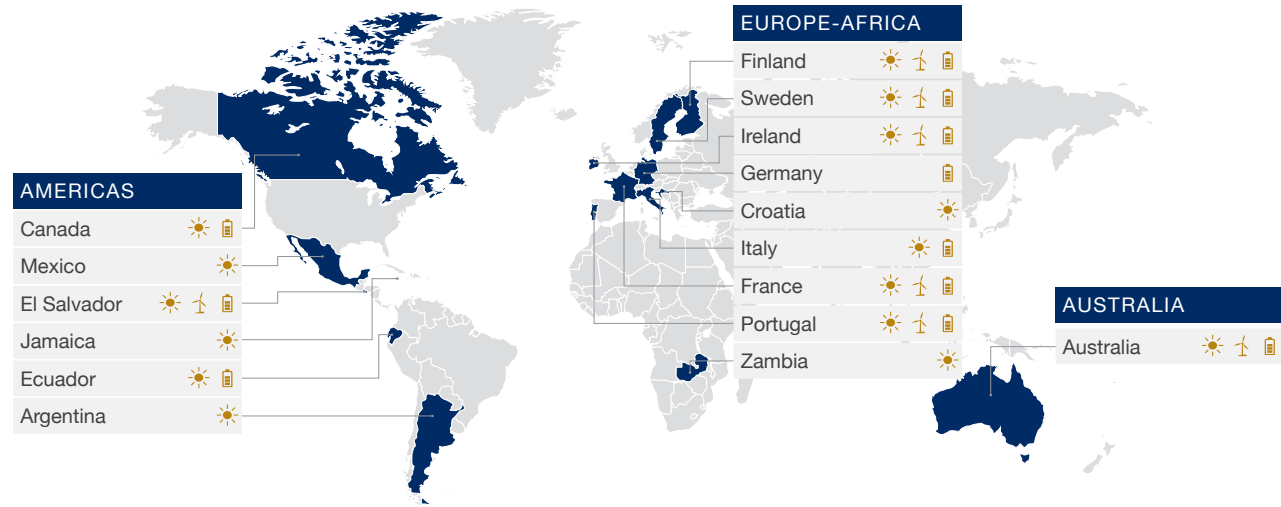
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Neoen produces green electricity from renewable sources such as sunlight and wind using mature, tried and tested technologies. We are also leaders in energy storage.

Globally

Neoen has a presence in 16 countries with over 8 GW of assets in operation and under construction worldwide.



Neoen in Victoria



VICTORIAN BIG BATTERY

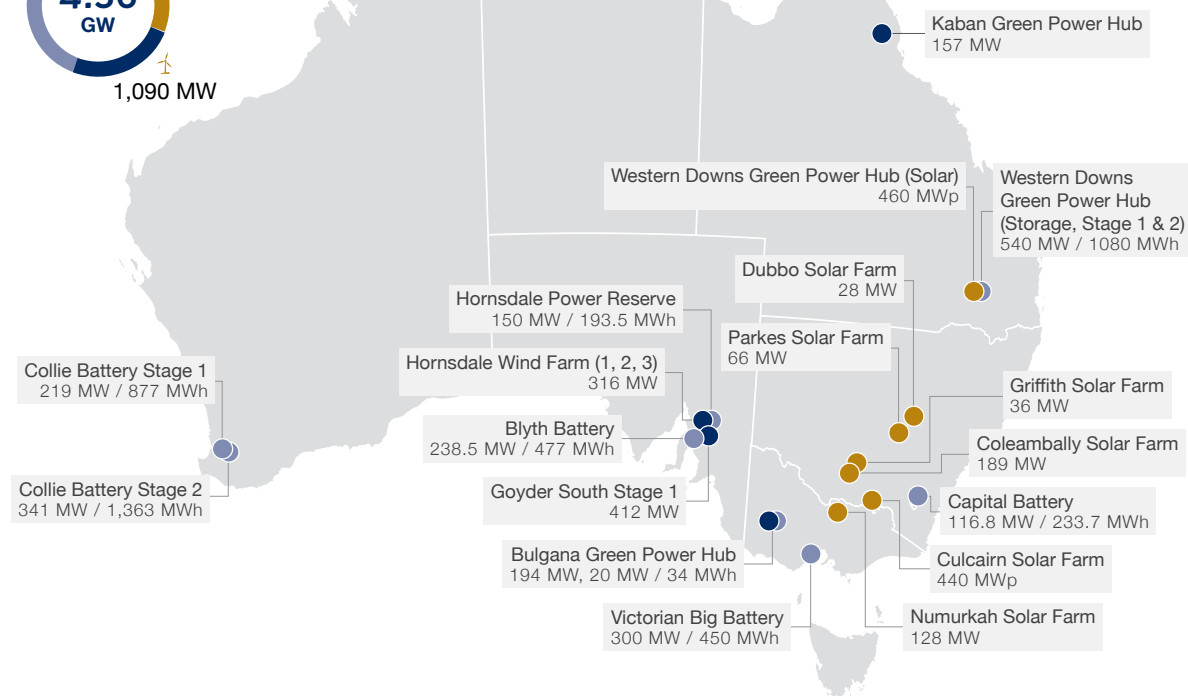
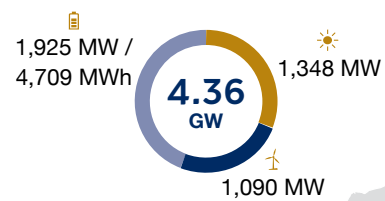
IN OPERATION

Our 300 MW battery storage project located in Geelong is one of the largest batteries in the world. It supports Victoria's clean energy transition and provides reliable, affordable power for Victorians, helping the state meet its renewable energy target of 50% by 2030.

In Australia

Since 2012, Neoen has developed over 4.3 GW of wind, solar and storage projects across six states and territories.

● Solar ● Wind ● Storage



BULGANA GREEN POWER HUB

IN OPERATION

A combined 194 MW wind farm and 20 MW battery storage project located in Joel South, Victoria approximately 11km east of Stawell and 18km north of Ararat.



NUMURKAH SOLAR FARM

IN OPERATION

A 128 MW solar farm located in Drumanure, approximately 3km east of Wunghnu, 6km south east of Numurkah in Victoria and 20km north east of Shepparton.

Navarre Green Power Hub

THE SITE



Up to
100 turbines



Up to **600 MW**
of renewable energy



Up to **150 jobs**
during construction



Up to **10 jobs**
during operations

HELPING THE CLIMATE

The proposed wind farm is expected to generate

1,680 GWh annually
which is equivalent to:



1.3 million tonnes of
CO₂ emissions displaced



363,300 homes
powered



554,900 cars
off the road



12.9 million
trees planted

Project updates



2019

Project Initiation & Feasibility Studies

- High level desktop studies
- First discussions with landowners



2020

Wider Engagement

Discussions with nearby residents, Barenji Gadgin Land Council Aboriginal Corporation, Northern Grampians Shire Council and other relevant Government agencies



2021

Ecology Assessments

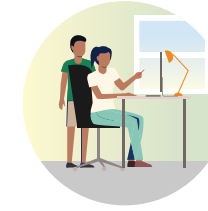
Detailed vegetation, bird and animal surveys and studies



2022

Wind Farm Layout Optimisation

- Remaining ecology and other specialist studies
- Design changes to avoid and minimise impacts



**SEP
2023**

Environmental Effects Statement (EES) Referral

- Sent to Minister for Planning
- Public Exhibition



**MAY
2024**

Received Minister's decision on EES Referral

EES is required



**MID
2027
TARGET**

Planning approval



**EARLY
2028
TARGET**

Construction Start

- Approximately two years duration
- Western Renewable Link expected to be completed in 2026

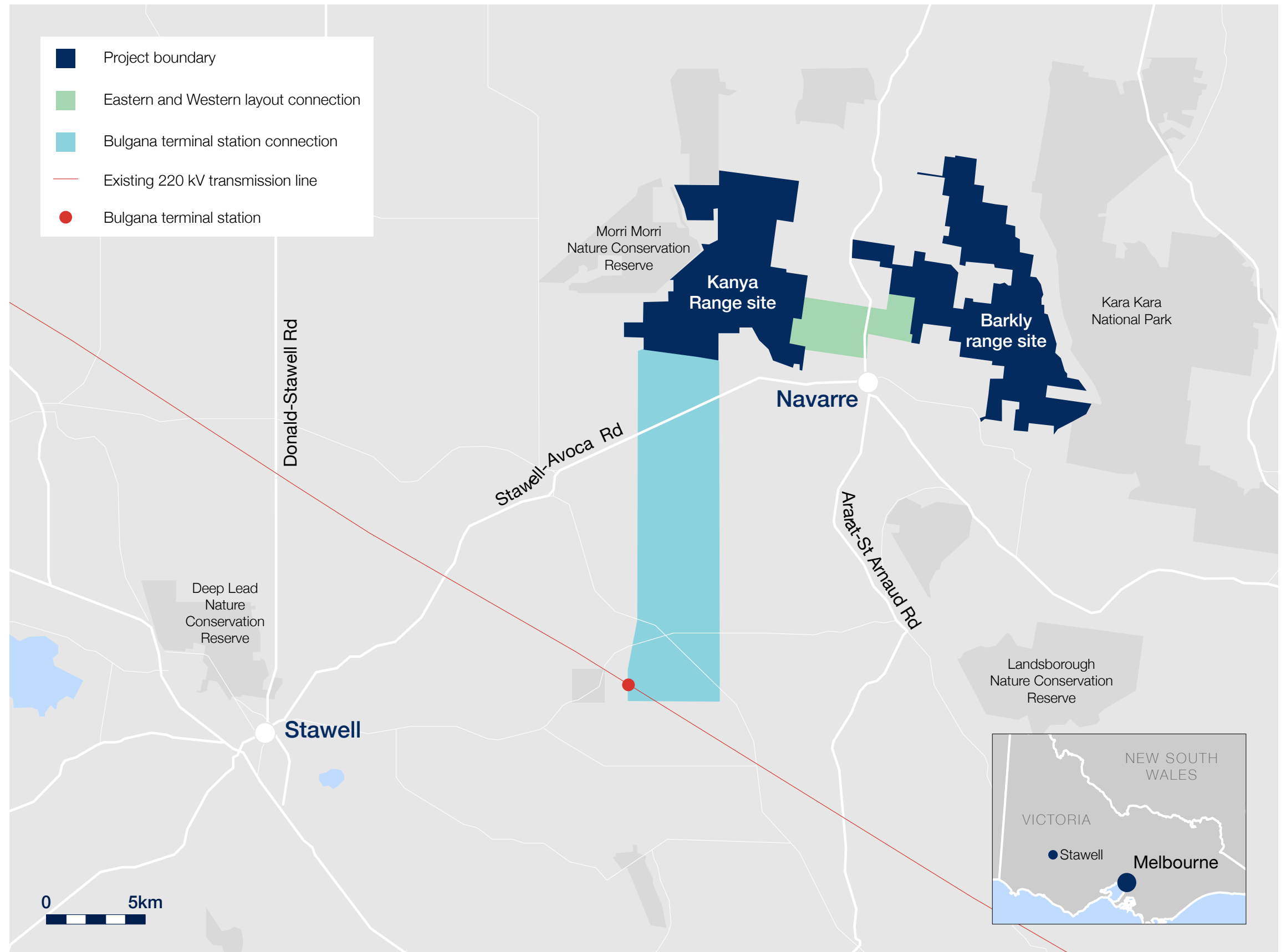
Project layout

The location of the proposed project is near the township of Navarre, Central Victoria.

The wind farm would be focused around two separate areas where the wind speeds are highest – the Barkly Range and Kanya Range to the north-east and north-west of Navarre respectively.

It is around 30 minutes drive from another Neoen project, Bulgana Green Power Hub.

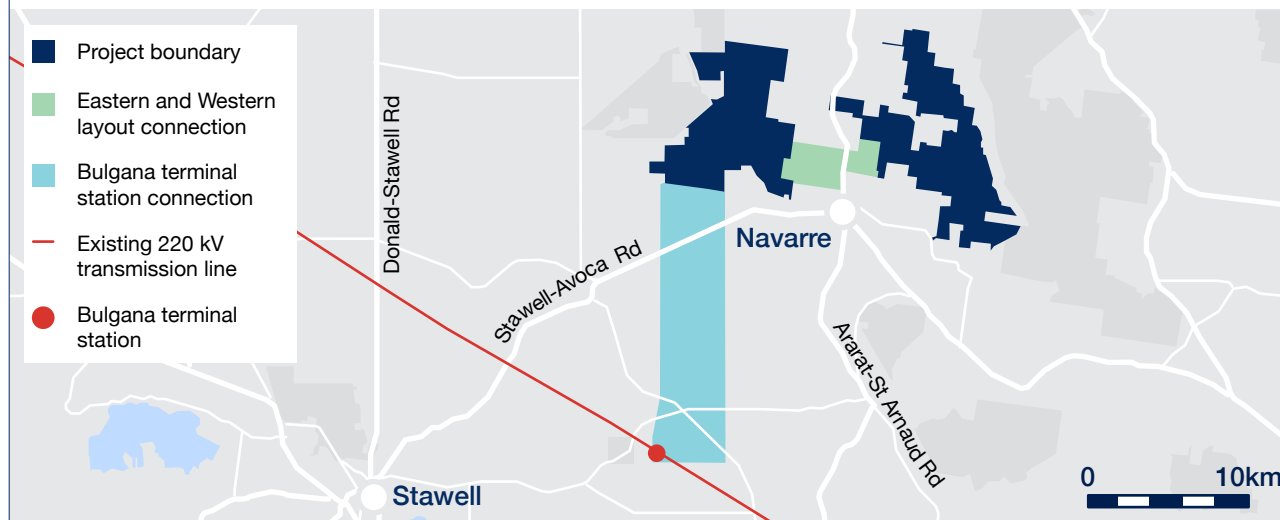
Please note: Blue shading represents the areas where turbines could potentially be located. It is indicative only and is subject to agreements with the owners of this land and outcome of the various planning and technical assessments.



Connecting to the grid

TRANSMISSION

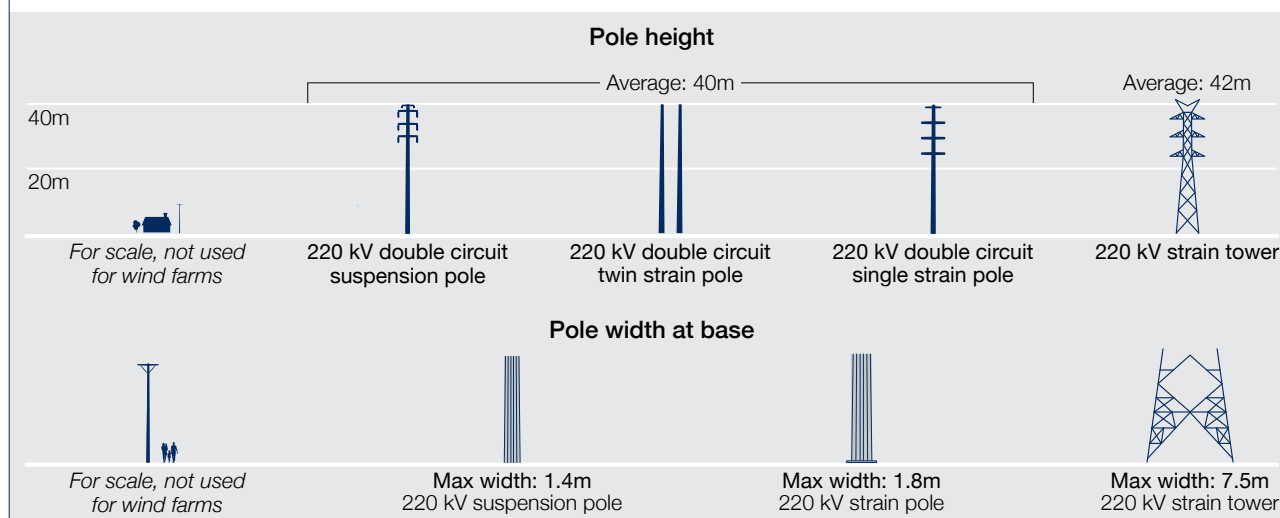
A new power line is needed to connect the Navarre Green Power Hub project to the national electricity grid at the Bulgana Terminal Substation, located approximately 17km from the wind farm. We are in early discussions with landowners across the transmission line corridor shown here to identify a suitable route for the line.



SIZE COMPARISONS

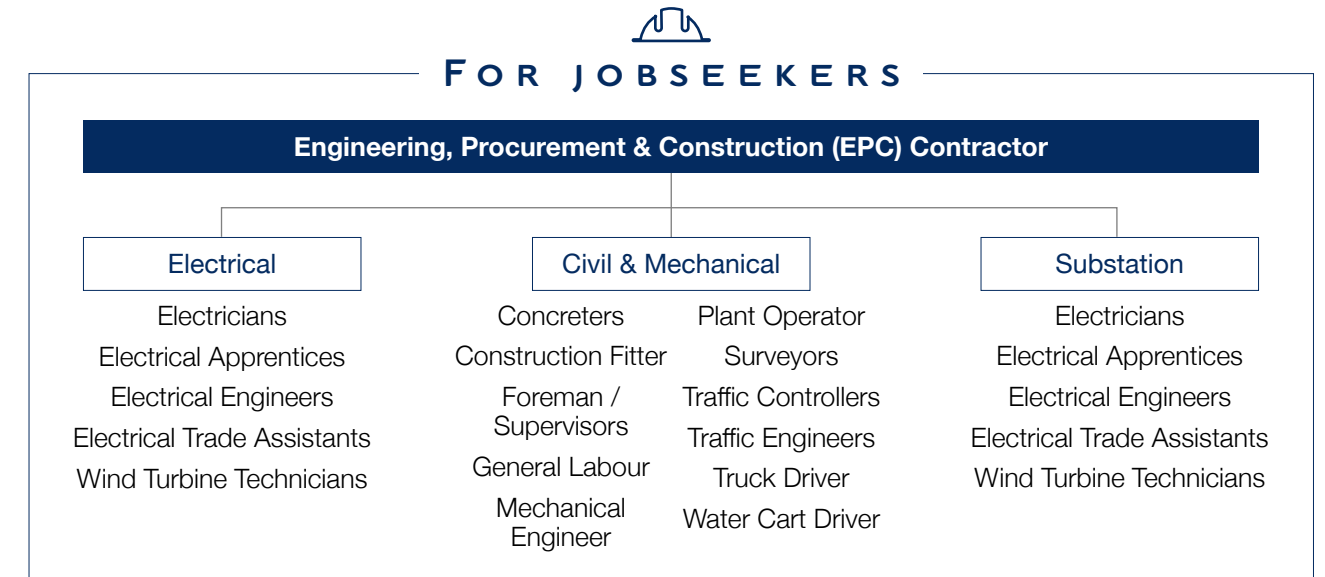
A 220 kV overhead transmission line is proposed for the transmission line corridor under consideration. The range of standard 220 kV pole designs are shown here next to a typical smaller distribution pole for reference.

If you would like to provide feedback on the power line route, or have a preference on tower design we would welcome this feedback via our survey linked to the project website.



Construction workforce

The Navarre Green Power Hub is expected to create approximately 150 new jobs during construction and up to 10 new, permanent positions during operations.



Anyone interested in working on the project can register their interest via our project website: navarregreenpowerhub.com.au/work-with-us/

In the pre-construction period, we will hold a Local Employment & Supplier Networking session. We anticipate construction could commence in 2028.



Project lifecycle

This project lifecycle is general. Please see our project website for latest updates.



Community benefit-sharing

Neoen has made an **annual commitment of \$120,000** under the Community Benefit-Sharing Program to provide significant, meaningful benefits to communities living around our Navarre Green Power Hub.

Funding will be available when the project goes into operations and will continue for its 30+ year lifespan. We aim to fund local projects and initiatives in one of the following growth areas:



Arts, culture & events



Disaster relief & emergency services



Education & training



Energy efficiency & environment



First Nations initiatives



Health & wellbeing



Submit your ideas: Scan the QR code or visit our project website

Case Study: Concongella Primary School

Our Bulgana Green Power Hub has a \$120,000 annual Community Benefit Fund administered by the Northern Grampians Shire Council. Local community groups apply for grants ranging from \$1,500 – \$20,000.

"We applied for a grant to install a wind turbine and solar panel array at the school... for the students to understand streams of energy production. It was a very simple application process."

– Kristie Miller, Principal



Bushfire prevention & management

Neoen takes fire safety and mitigation very seriously on all its projects.

As a long-term owner and operator of renewable energy projects, we work with the local rural fire service from the early stages of development to construction and operation.

Our projects involve building new infrastructure and we are committed to ensuring that in doing so, we do not put unnecessary additional pressure on valuable local resources (such as fire fighting) or bring unmitigated risk to the natural environment and communities surrounding our project sites.

BENEFITS OF WIND FARMS

- The height of turbines, coupled with lightning protection systems, reduce the chance of lightning strikes on nearby trees which may otherwise start a fire
- Wind turbines and meteorological masts can be fitted with cameras for smoke and fire detection in the forest - increasing visibility and early detection
- Construction of additional high-quality roads/access tracks that can be used in a bushfire emergency
- Asset Protection Zones around turbines and maintained roads act as additional fire breaks, helping slow fires down in an emergency
- Water tanks are installed on site to guarantee reserves for fire fighting purposes only
- On-site monitoring personnel are trained and can detect and be first responders to a fire event
- Additional eyes on the ground to detect and raise alarms during an emergency
- Neoen has committed to significant additional funding of fire prevention and management as part of the project's benefit-sharing program.



With over 22 assets in operation or under construction across six Australian states and territories, Neoen has a proven track record of collaborating with the following authorities:



<p>Are wind turbines a fire risk and how will this be mitigated?</p>	<p>All electrical infrastructure comes with a level of fire risk, but the risk from wind turbines is extremely low. Additionally, wind farms have requirements around keeping vegetation below certain levels to manage fuel loads, and offer benefits such as additional fire breaks, water reserves, fire trails and monitoring in remote areas of a region. Neoen ensures that our wind farms comply with all relevant requirements from the local and state government fire authorities.</p> <p>Early detection and manned surveillance (with 24/7 monitoring) also help reduce fire risks from campfires and arson, improving security across the project area.</p>
<p>How would the ability to fight fires in the area, using light aircraft and heavy water bombers, be affected by turbines?</p>	<p>If there is a fire emergency, Neoen would stop all wind turbines and park the rotor blades to facilitate operation of fire fighting aircraft i.e., turbines will be locked in a “Y” position during the fire to make them safer to fly around. This has been carried out successfully and is a standard practice in other areas/jurisdictions.</p> <p>Aircraft (likely helicopters) would need to avoid the wind turbines and follow relevant visual flight rules. There is also significant space between turbines which allows helicopters to fly between them. Pilots view turbines as no different from tall structures and hazards such as power lines, transmission towers, mountains and valleys. Any requirements associated with aerial fire fighting are included in the Bushfire Emergency Management Plan developed in consultation with the fire authorities and in accordance with the state government’s planning requirements for wind farms.</p>
<p>How can wind turbines prevent a fire risk?</p>	<ol style="list-style-type: none"> 1. Turbine height, coupled with lightning protection systems, reduces the chance of lightning strikes on nearby trees and property which may start a fire. 2. Turbines are fitted with advanced smoke detection systems. When smoke is detected, an alarm shuts down the wind turbine for safety purposes and a signal is sent to our on-site technician who assess the situation as per our approved response protocols. They will alert the fire authority in the event of a bushfire risk or emergency. Turbines also have a fire suppression system which can activate an environmentally-friendly gas suppressant to cool a fire and remove oxygen to extinguish flames. 3. Asset Protection Zones around the site have vegetation maintained below certain levels and free of debris that pose a fire risk.





About wind farms

How long does it take to build a wind farm? The construction timeframe depends on the project size and the number of workers deployed on site. Navarre will have a construction timeframe of at least 24 months and may be constructed in stages.

What technology does Neoen use to build its wind farms? Neoen's projects use premium quality wind turbines provided by leading manufacturers. This is selected through a competitive process for each project. All components come with long warranty periods – wind turbines are generally warranted for 25 to 30 years.

What is the lifecycle of a wind farm? A wind farm will typically operate for between 25 and 30 years.

How do wind turbines work? Wind turbines are designed to convert wind into mechanical energy by rotating the turbine blades. The mechanical energy is converted into electricity via a generator in the nacelle, which is sent directly to the grid. The electricity generated by the turbine is proportional to the wind speed cubed. For example, a wind turbine in 8m/s wind will produce about 8 times as much electricity as a wind turbine in 4m/s wind. Wind speed is measured at hub height. This is why it's important to place turbines in high and consistently windy areas to achieve the lowest cost power generation for consumers.

How tall are the wind turbines? Wind turbines are generally 150 to 270m high (at the highest point). There's approximately 500 to 1,000m between each turbine, but this varies between projects. Hub heights of turbines may vary between 90 to 160m. Turbines continue to grow in size each year i.e. each new turbine model is larger than its predecessor. Often during permitting, higher hub and tip heights will be requested to accommodate the next generation of machines.

What are the advantages of taller, modern turbines? Economic: Larger turbines generate more and cheaper energy because they can access higher wind speeds at higher elevations. They also generate savings in civil and electrical costs (foundations, roads, cables, etc.). Visual: Larger turbines are spaced further apart (up to 1,000m) and have lower rotational speeds than smaller turbines. Noise: Larger turbines don't necessarily make more noise than smaller turbines, due to their slower speed and improvements in blade design. Environmental: Larger turbines require less concrete, roads and cables per unit of energy generated. This reduces carbon emissions, construction traffic, and vegetation clearance. Their blades are also above the flight paths of most birds, which greatly reduces the impact to avifauna.

How do you stop wind turbines impacting the landscape? We understand that wind turbines do alter the landscape. But we are committed to working with communities to ensure our wind farms have the least possible detrimental impact on visual amenity. We encourage individuals and groups with questions about visual impact and solutions to engage with us early.

About the economy

Do renewable projects benefit the Australian and local economy? Each project benefits the local community by creating employment. At Neoen's Coleambally Solar Farm 300 people were employed locally during the construction phase and five are indirectly employed locally in full-time positions during operations. Neoen provides opportunities for local contractors to submit tenders and local jobseekers to seek employment by hosting a series of contractor sessions in the local area prior to any construction commencing. In addition, Neoen establishes a community fund for each wind farm to support community group projects.

How much do renewables cost compared with other energy sources? The current cost of wholesale energy is \$80-\$100 per MWh on average. This comprises of existing coal, existing gas and renewable energy. The wholesale cost of large-scale renewable energy is considerably lower than this at approximately \$40 per MWh. The wholesale costs of the individual sources of generation in 2020 are:

- Existing coal: approximately \$30-\$60 per megawatt hour
- New large-scale renewables: approximately \$40 per MWh
- Gas generation: approximately \$120 per megawatt hour; and
- New coal: approximately \$90+ per megawatt hour.

Who pays for any road upgrades required? Neoen pays for any upgrades to State or Local Government or landowner roads required for transporting wind turbine components to site. If we damage roads, we will pay for repairs.

Who will pay for any electrical transmission upgrades required? Neoen pays for any electrical transmission upgrades necessary to connect and operate the project in the electricity grid. This includes construction and maintenance costs for the life of the project.

Does Neoen require government subsidies to build its projects? Neoen does not require government subsidies for finance. We finance our projects through a combination of our own equity and long-term bank loans. However, we sometimes enter into agreements with governments or businesses to sell the power produced by our projects.

Who assesses the projects? All Neoen projects meet strict State and Federal Government regulations and are assessed under these regulations. We work closely with governments to ensure we meet all legal requirements and exceed these requirements wherever possible.

What happens when the project ends? At the end of a project life cycle, the turbines are removed and the site is rehabilitated. This is a commitment we make to the landholders and the State government, which is in the development approval and our contract with the host landholders. After assets are removed, most of materials are reclaimed or recycled. This is because the steel, copper, lithium and other materials they are made of retain significant value.

About health and culture

Are there any health risks associated with wind farms?

There are nearly 200,000 wind turbines installed worldwide — many of them in more densely populated areas close to houses.

Some 17 reviews of research literature from these leading health and research organisations concluded there is no published evidence linking wind turbines with adverse health effects:

- World Health Organisation
- Australia's National Health and Medical Research Centre
- UK Health Protection Agency
- US National Research Council

No health issues have been associated with wind turbines, and the Navarre Green Power Hub will use the same type of technology.

Can wind turbine noise affect local residents?

Before it can operate, a wind farm has to demonstrate that noise levels at neighbouring residences will meet strict noise limits. These limits are designed to ensure that noise from a wind farm is not intrusive for the average person.

Will the project reduce air quality?

Monitoring dust levels during construction is a basic requirement of each project. We use dust suppression measures wherever possible.

Dust-generating activities are assessed during windy conditions and are stopped and rescheduled if adequate control of dust levels cannot be achieved.

All machinery is checked during site inspections and daily pre-start checks. This ensures all machinery has appropriate emission control devices, is in good working order, and is maintained correctly.

Is cultural heritage taken into consideration?

Neoen complies with all legislation, including laws regarding the protection of cultural heritage. A cultural heritage assessment forms part of initial studies as does consultation with local Indigenous groups to ensure cultural heritage is protected.

About the environment

Do wind farms impact flora and fauna?

We engage specialist consultants for detailed flora and fauna surveys to determine the ecological attributes of the land.

On all of our projects, we aim to minimise the impact on flora and fauna by designing projects outside areas of high conservation significance, and adopting control measures during construction.

During the detailed design, wind turbines will be micro-sited to minimise the potential impact on fauna habitat. Turbine heights will be selected to minimise the overlap between rotor swept area and bird flight heights. Other mitigation measures include:

- preparing management plans
- identifying 'no-go zones' within the project site
- conducting pre-clearance surveys

We also consult with government departments of environment and biodiversity throughout development, construction and operation, as well as local non-government organisations.

Do wind turbines affect farm or domestic animals?

We built and operate the Hornsdale Wind Farm across numerous properties near Jamestown in South Australia. Stock, including sheep and cattle, take a couple of days to get used to wind turbines, then are very comfortable with them. They rub up against turbines and use the shade from the towers during summer.

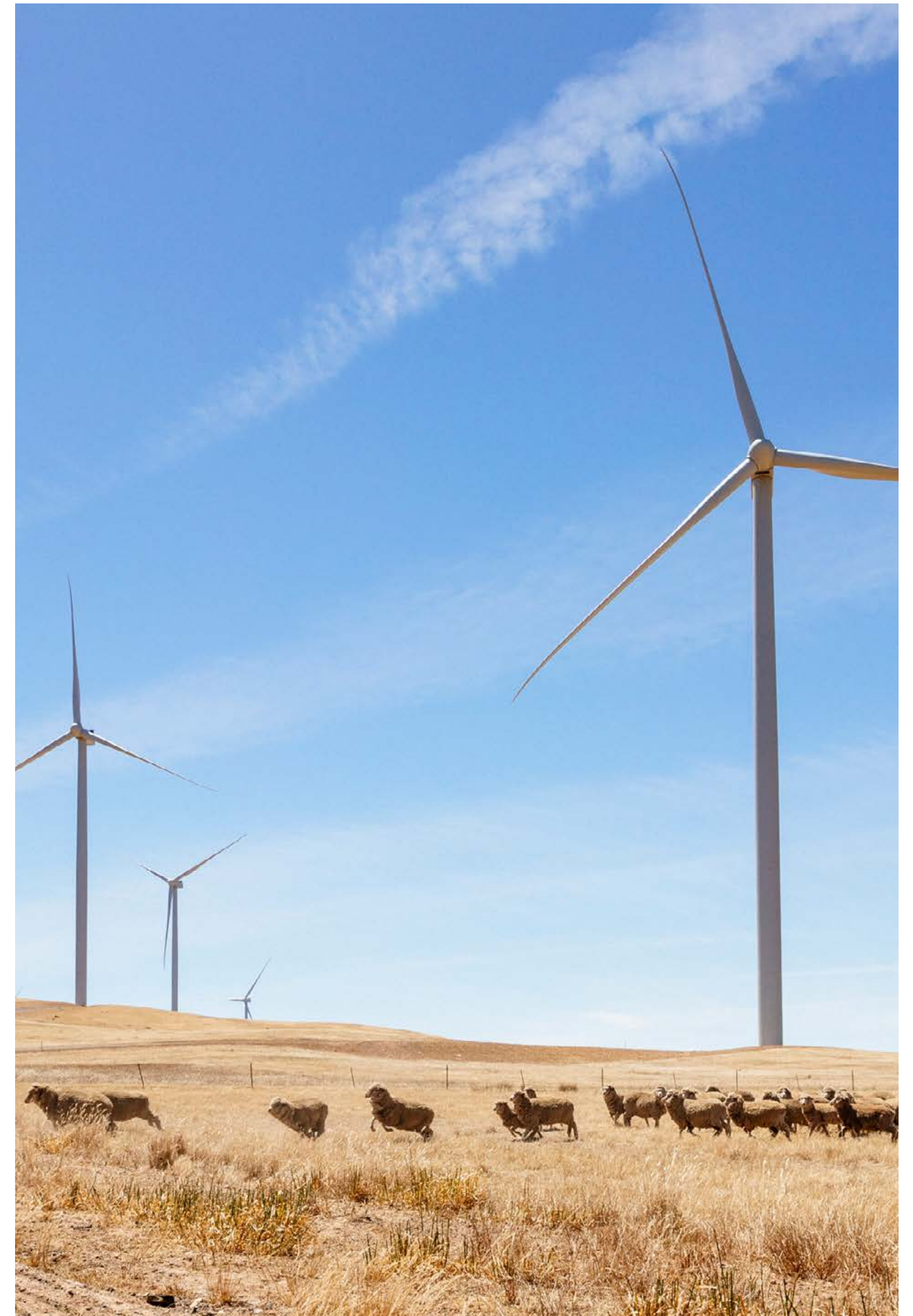
Do wind farms harm birds?

While wind farms are sometimes said to threaten birds, an energy governance study completed in Singapore has shown that wind farms harm 17 times fewer birds per unit of electricity produced than fossil fuel generation.

Studies show that wind farms are probably responsible for impacting birds at rates:

- 400 times fewer than cars
- 500 times fewer than pesticides
- 1200 times fewer than high-tension wires

Larger, modern turbines have blades that are above flight paths of the vast majority of birds. The main exception is raptors, and we carry out detailed nest surveys and place generous buffers of 1 to 2km around any viable nest that is found. There is also evidence to suggest that raptors adjust to the presence of turbines and will avoid the blades.



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