

KENTBRUCK

GREEN POWER HUB

Community Information Booklet

May 2022

NEOEN



kentbruckgreenpowerhub.com.au



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GLOBAL PRESENCE

The company is headquartered in Paris, France, and has four Australian offices – in Sydney, Adelaide, Canberra and Perth.

We operate across renewable energy technologies including solar, wind and storage in Europe, the Americas, Africa, and Australia.

Neoen's total capacity in operation and under construction is currently 5.4 GW and we are aiming for 10 GW by the end of 2025.



AUSTRALIAN PRESENCE

Neoen Australia began operations in 2012. Over the last ten years, the company has initiated the development of more than 2.5GW of solar and wind projects through organic growth, local partnerships and strategic acquisitions.



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

NEOEN IN VICTORIA



VICTORIAN BIG BATTERY

Our Victorian Big Battery is a 300 MW grid-scale battery storage project in Geelong, Australia, **one of the largest batteries in the world**. It stores enough energy in reserve to power over one million Victorian homes for 1/2 an hour.

The battery has a 250 MW grid service contract with AEMO under direction from the Victorian Government. It supports Victoria's clean energy transition and secure reliable, affordable power for Victorians, helping the state meet its renewable energy target of 50% by 2030.

BULGANA GREEN POWER HUB

The Bulgana Green Power Hub is a combined 194MW wind farm and 20MW battery storage facility that is owned and operated by Neoen.

It supplies around 750,000 megawatt hours (MWh) of clean renewable electricity into the national electricity system each year.

The Bulgana Green Power Hub is located in Joel South, Victoria approximately 11km east of Stawell and 18km North of Ararat.



NUMURKAH SOLAR FARM

Numurkah is a 128MW solar farm that is owned and operated by Neoen and is located approximately 6km south of Numurkah in Victoria.

It supplies approximately 255,000 megawatt hours (MWh) of clean renewable electricity into the national electricity system each year and has been operating since 2019.

The Numurkah Solar Farm is located in Drumanure, Victoria approximately 3km east of Wunghnu, 6km south east of Numurkah in Victoria and 20km north east of Shepparton.

INDICATIVE PROJECT MAP

The wind farm layout will inevitably go through minor changes. These changes may arise from the planning process, finalising studies, constructability analysis and input from the landholders.

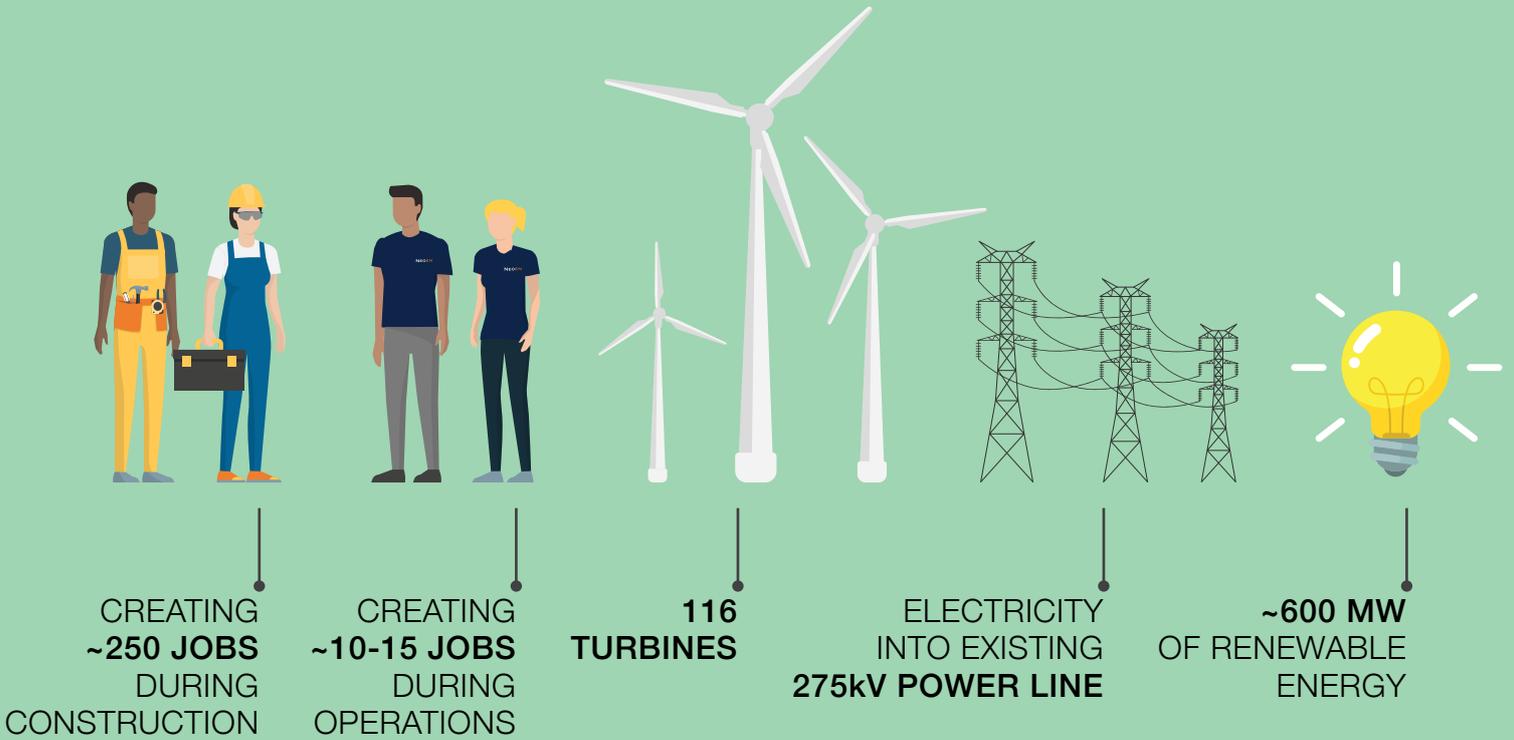
The project is located on Gunditjmara Country. The traditional owners of the land, represented by the Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) have received Neoen's Future Act Notification.

This notification will be considered at the next Gunditjmara native title holders meeting on Saturday, 28 May.

Within this notification, Neoen has committed to sponsoring and participating in a Cultural Values Assessment (CVA) of the project area managed by GMTOAC. This CVA will assist Gunditjmara to consent, on a free and informed basis, to the Future Act Notification and proposed ILUA, and Cultural Heritage Management Plan while allowing Gunditjmara to connect and reconnect with country as part of the process.

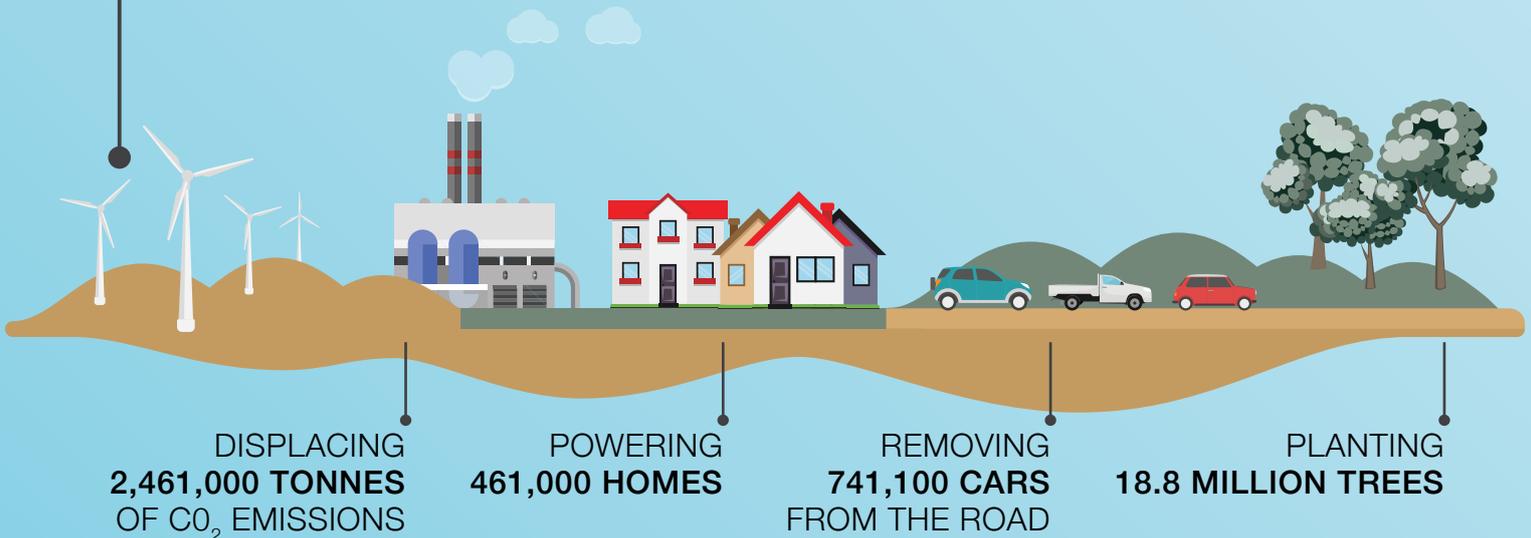


PROJECT FACTS



ENVIRONMENTAL BENEFITS

ABILITY TO PRODUCE
2,300 GWh
PER YEAR WHICH IS EQUIVALENT TO:

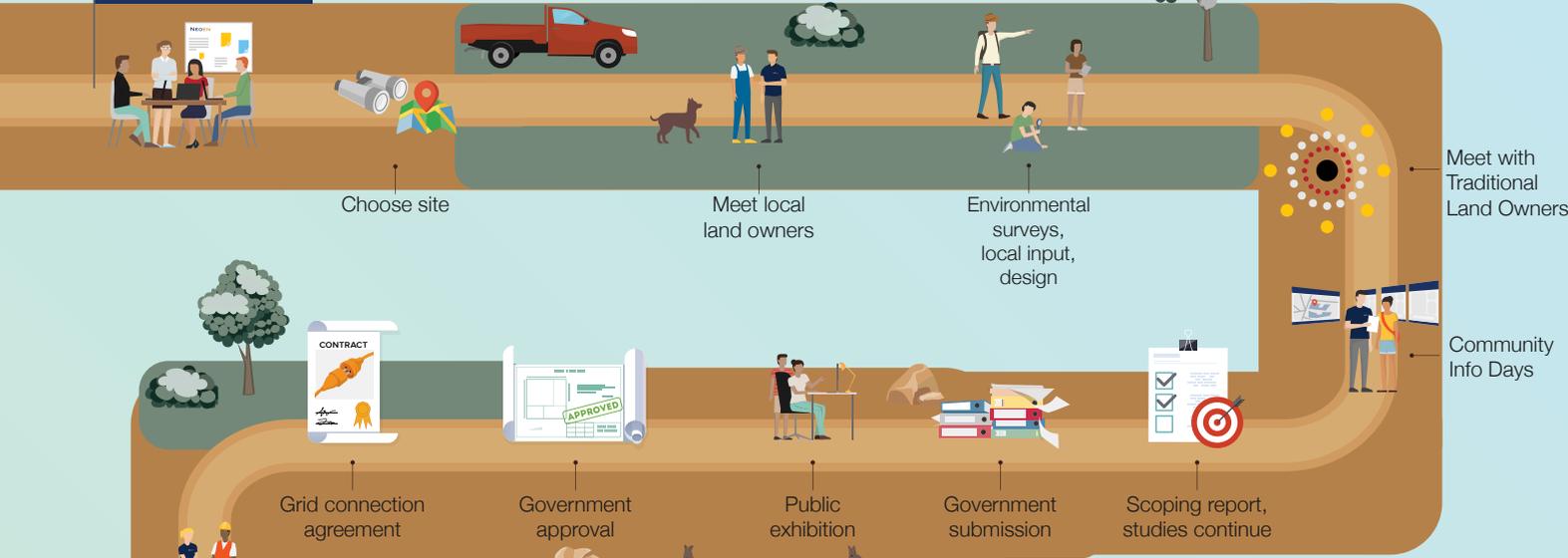


PROJECT TIMELINE



GENERAL PROJECT LIFECYCLE

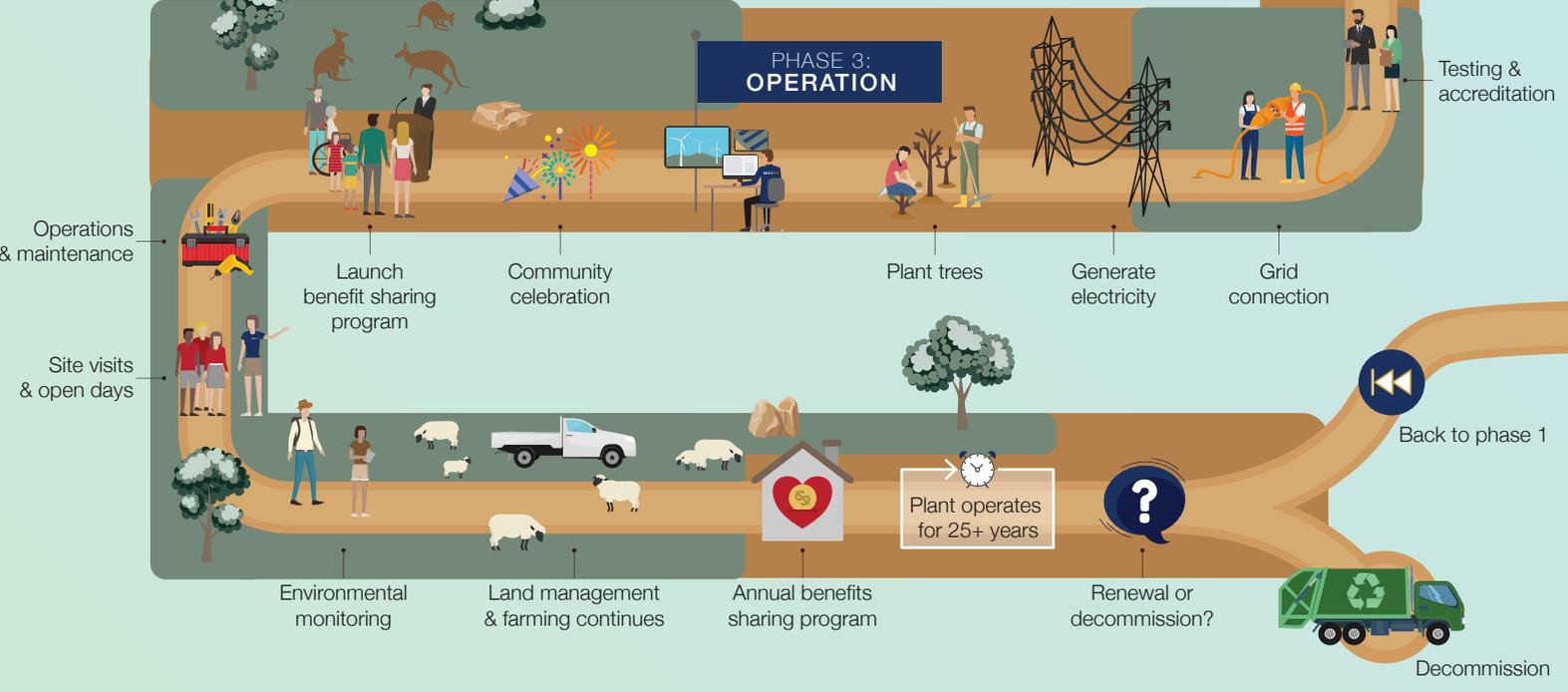
PHASE 1: DEVELOPMENT



PHASE 2: CONSTRUCTION



PHASE 3: OPERATION



Back to phase 1

COMMUNITY BENEFIT SHARING



Some of the options we are investigating for community benefits:



Community Benefit Fund

The funds would be allocated to local community projects through a competitive annual grants process.



Possibility to invest

Would you like the opportunity to invest some of your money in this project and make an annual return?



Support of local art

Are there any local arts or artists that you would like to see or support?



Tell us your ideas

To submit your ideas, please fill out our online survey:
surveymonkeys.com/r/kentbruckgph

Community Advisory Committee meets quarterly. Register your interest to become involved with Lisa Andrews at ic.articulatesolutions@gmail.com.

Existing program example

Concongella Primary School in Victoria



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

Concongella Primary School was awarded a grant in 2018 to install solar panels and a mini wind turbine.

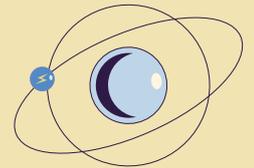
"We applied for a grant to install a wind turbine & solar panel array at the school. The purpose was for the students to understand the different streams of energy production. It was a very simple application process."

– Kristie Miller, Principal

NEOEN

Learning Hub

Take your students on a journey of discovery into the wonders of electricity and renewable energy



Create dynamic, engaging lessons

The Learning Hub covers the basics of electricity, through to the environmental and social impacts of renewable and non-renewable energy sources.

Curriculum-aligned videos, resources and classroom activities give you everything you need to create dynamic, engaging lessons for your students.

Each topic features a comprehensive set of teacher notes, giving you flexibility to build the lessons best suited for your classroom.

The Learning Hub was developed by Neoen to strengthen engagement with regional communities around renewable energy projects.



Perfect for the Australian Curriculum

Grade 5 & 6

Upper Primary

Topics include:

Why do we use electricity?

Could the world run out of electricity?

Can you store electricity in a bottle?

Grade 7 & 8

Lower Secondary

Topics include:

How can sunlight charge my phone?

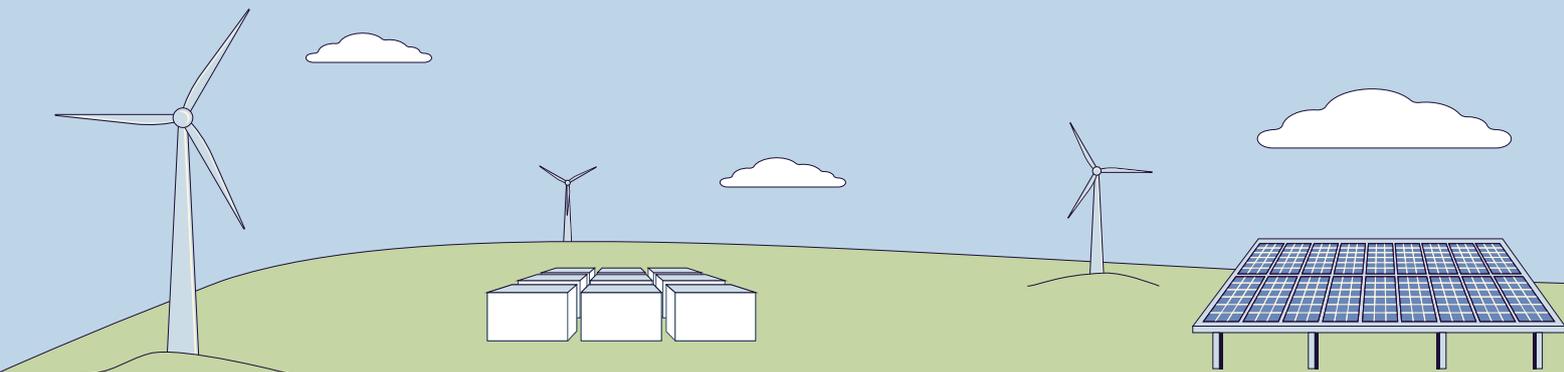
Why is wind a renewable energy resource?

How can solar energy power the night?

Interested?

Learn more!

neoenlearning.com



ABOUT WIND FARMS

Q1. 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. Kentbruck will have a construction timeframe of at least 24 months and may be constructed in stages.

Q2. 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.

Q3. What is the lifecycle of a wind farm?

A wind farm will typically operate for between 25 and 30 years.

Q4. 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.

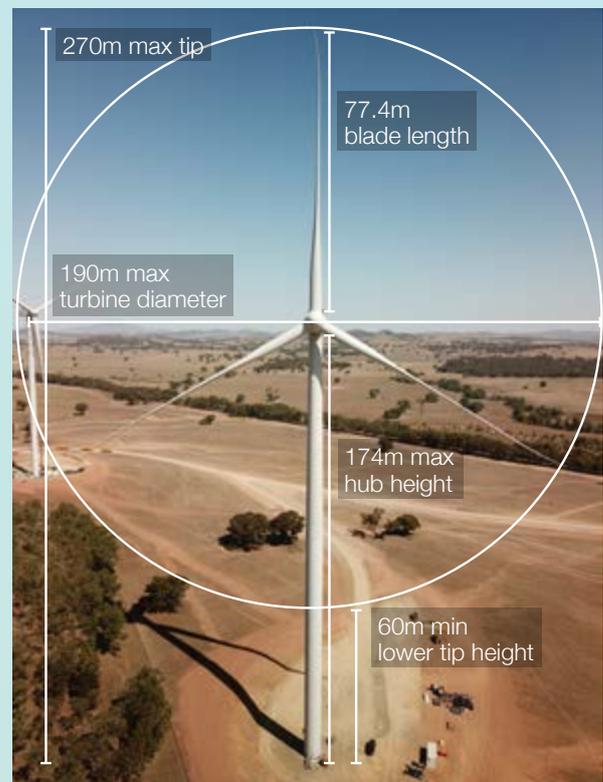
The electricity generated by the turbine is proportional to the wind speed cubed. For example, a wind turbine in 8m/s wind will produce about 8 times as much electricity as a wind turbine in 4m/s wind. Wind speed is measured at hub height.

This is why it's important to place turbines in high and consistently windy areas to achieve the lowest cost power generation for consumers.

Q5. 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.



Q6. 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.

Q7. 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.

FREQUENTLY ASKED QUESTIONS

ECONOMY

Q8. 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.

Q9. 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.

Q10. 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.

Q11. 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.

Q12. Does Neoen require government subsidies to build its projects?

Neoen does not require government subsidies to finance its projects. 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.

Q13. 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.

Q14. 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 the assets are removed, most of the materials are reclaimed or recycled. This is because the steel, copper, lithium and other materials they are made of retain significant value.



HEALTH AND CULTURE

Q15. 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 Kentbruck Green Power Hub will use the same type of technology.

Q16. 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.

Q17. 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.

Q18. 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.



FREQUENTLY ASKED QUESTIONS



ENVIRONMENT

Q19. 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 of projects, as well as local non-government organisations.

Q20. 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.

Q21. 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 that are:

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

Larger, modern turbines have blades that are well above the 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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