

# THUNDERBOLT

ENERGY HUB

## Community Information Booklet

July 2022

NEOEN



[thunderboltenergyhub.com.au](https://thunderboltenergyhub.com.au)



Joanna Murphy, Project Developer



[contact@thunderboltenergyhub.com.au](mailto:contact@thunderboltenergyhub.com.au)



1800 966 207





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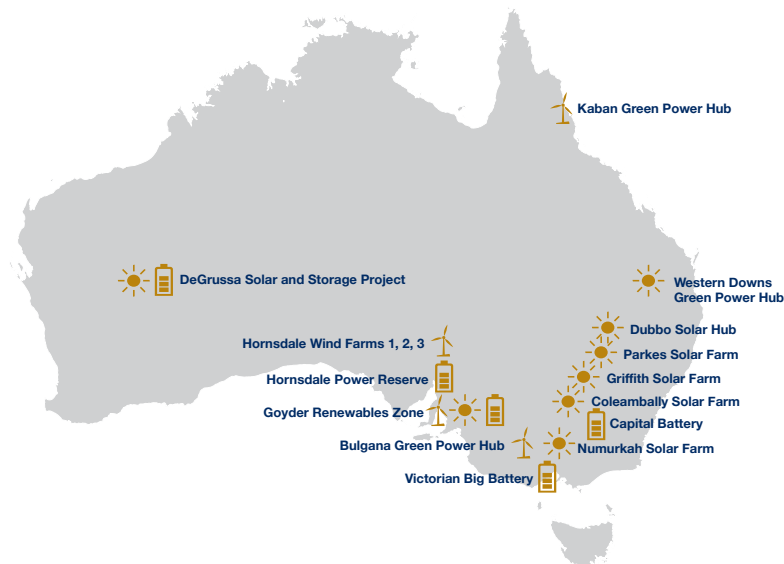
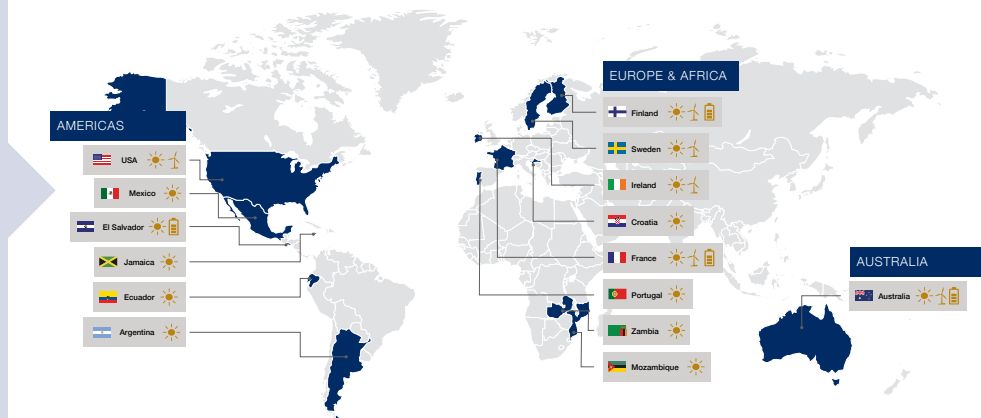


## GLOBALLY

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



## LOCALLY

Neoen Australia began operations in 2012. Over the last ten years, the company has initiated the development of more than 2.5 GW 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.



## DELIVERING CHEAPER ENERGY TO RETAILERS



### **ENERGY AUSTRALIA** *COLEAMBALLY SOLAR FARM*

Providing energy output of 100 MW of the 150 MW solar farm for 12 years.



### **SIMPLY ENERGY** *PARKES & GRIFFITH SOLAR FARM*

Providing 100% of the energy output of the two solar farms for 13 years.

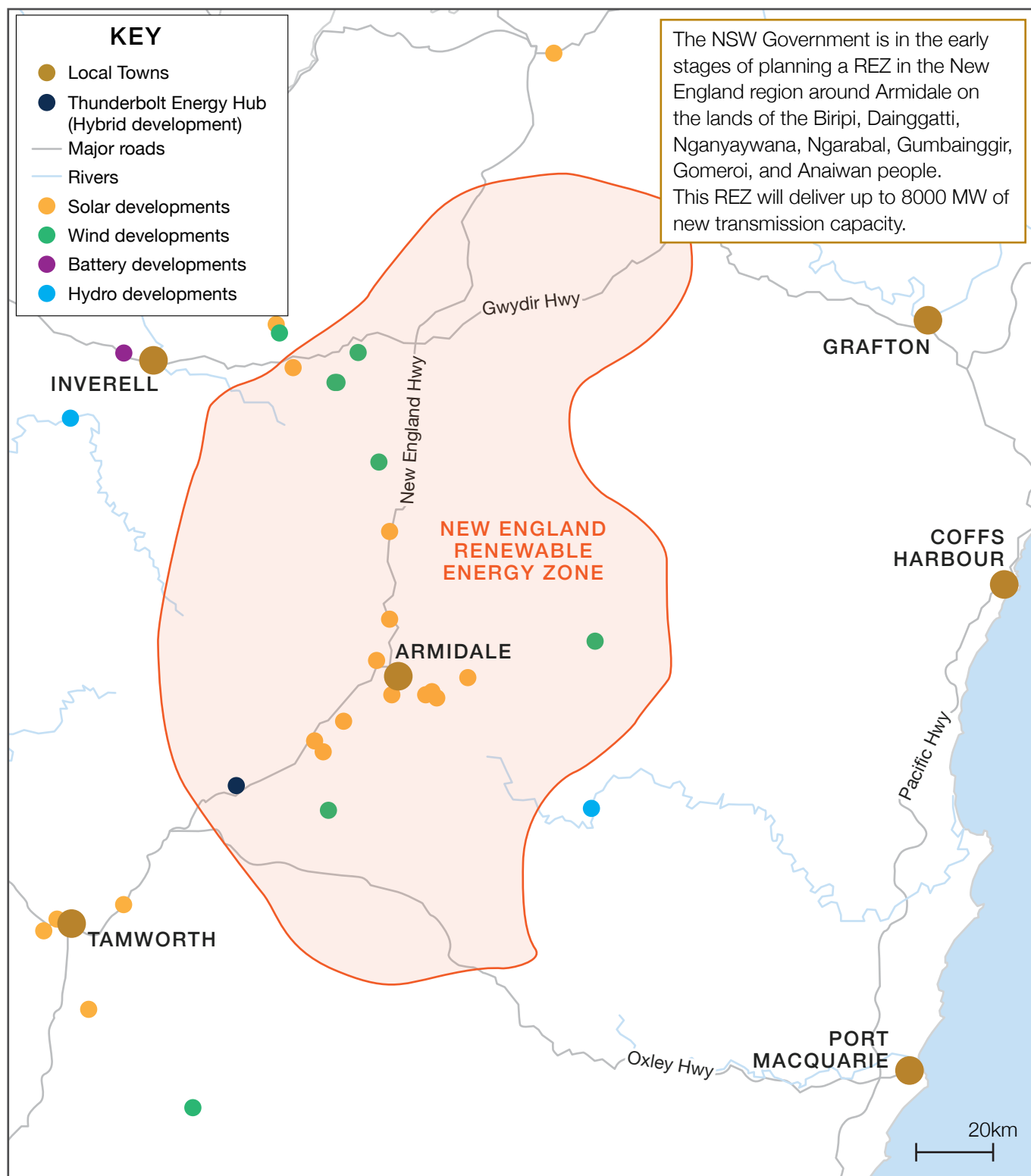


### **Actew AGL** *HORNSDALE WIND FARM*

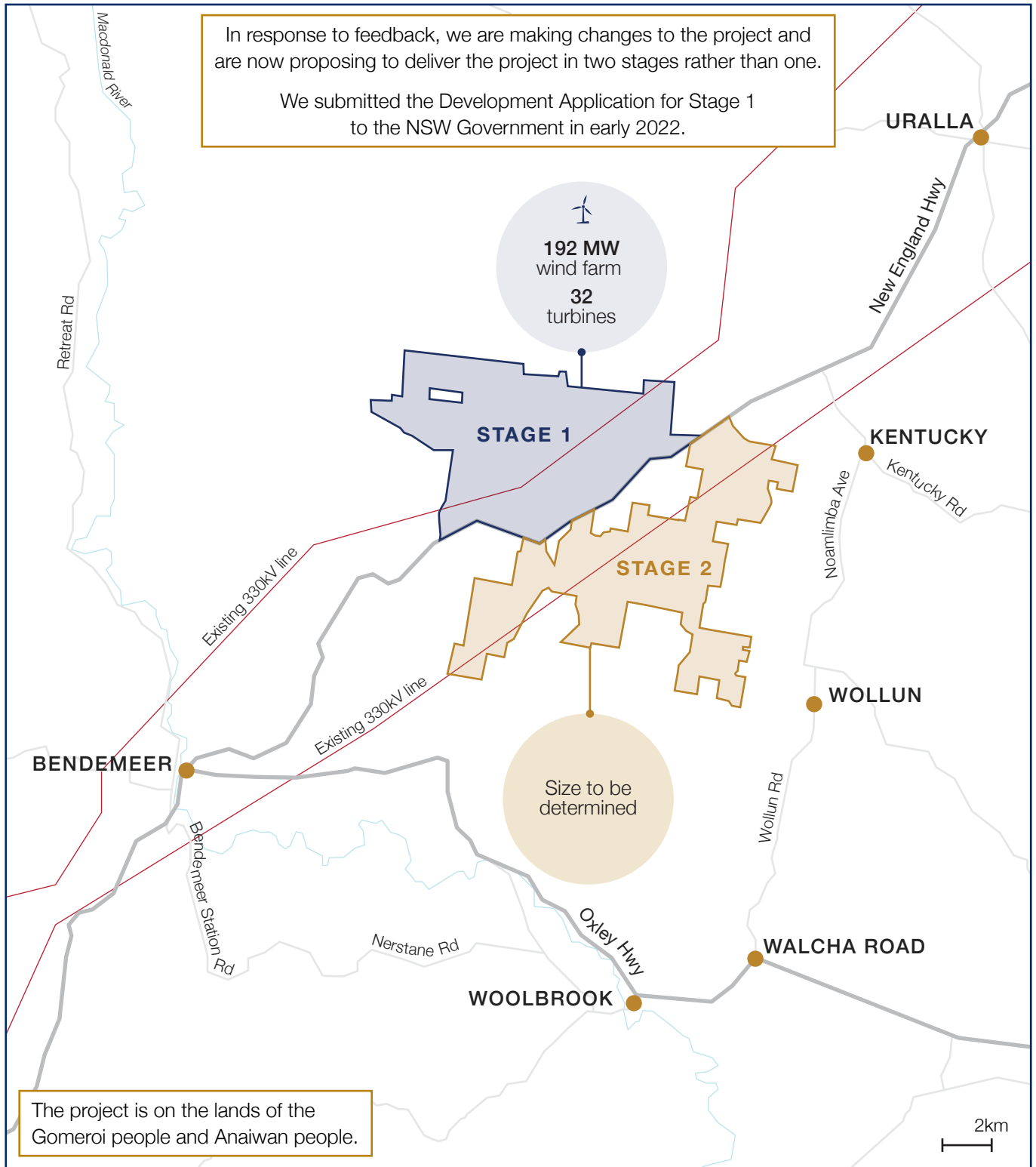
Providing 100% of the energy output of the 309 MW wind farm for 20 years.



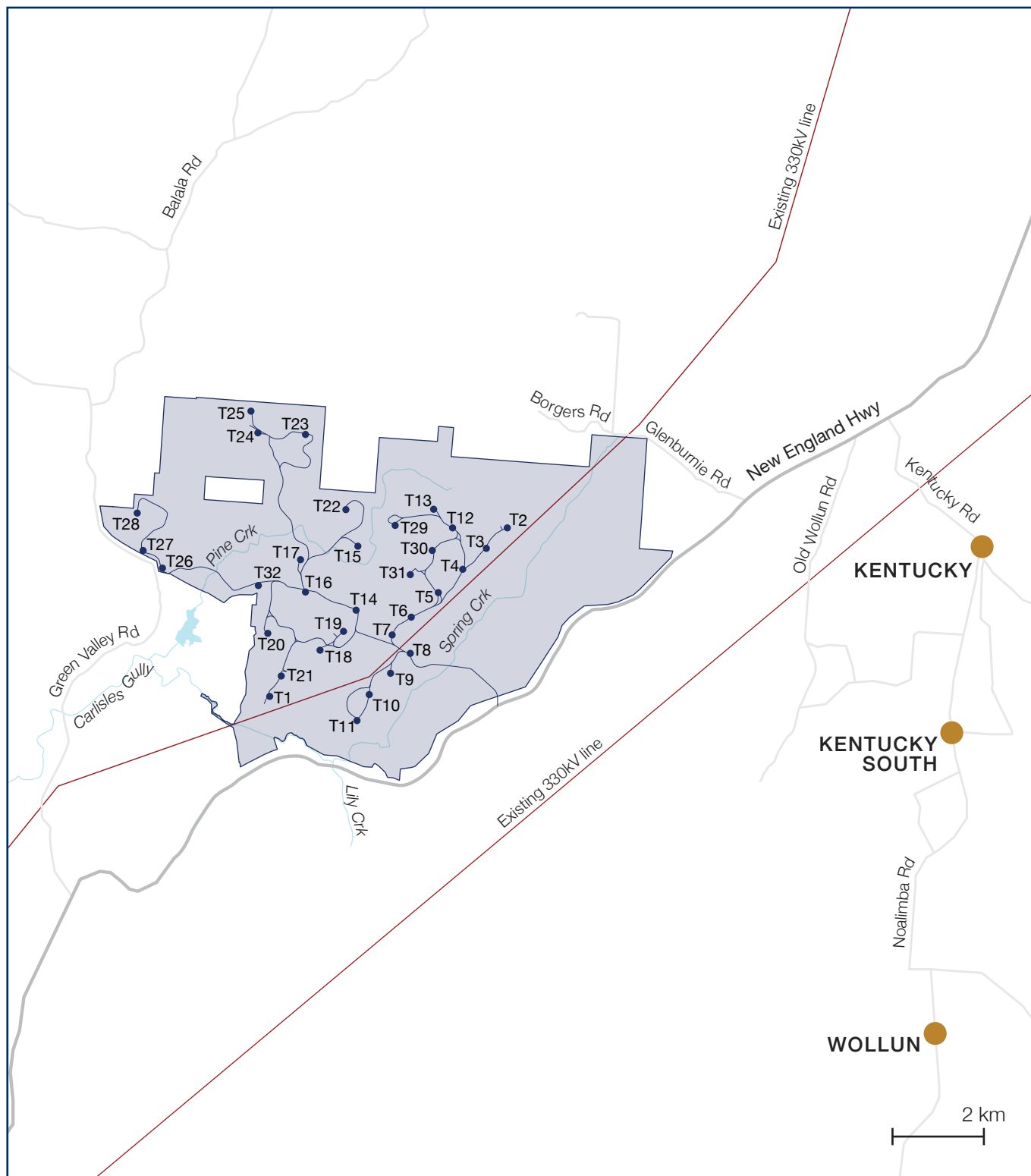
## NEW ENGLAND RENEWABLE ENERGY ZONE (REZ)



## NEW PROJECT STAGING

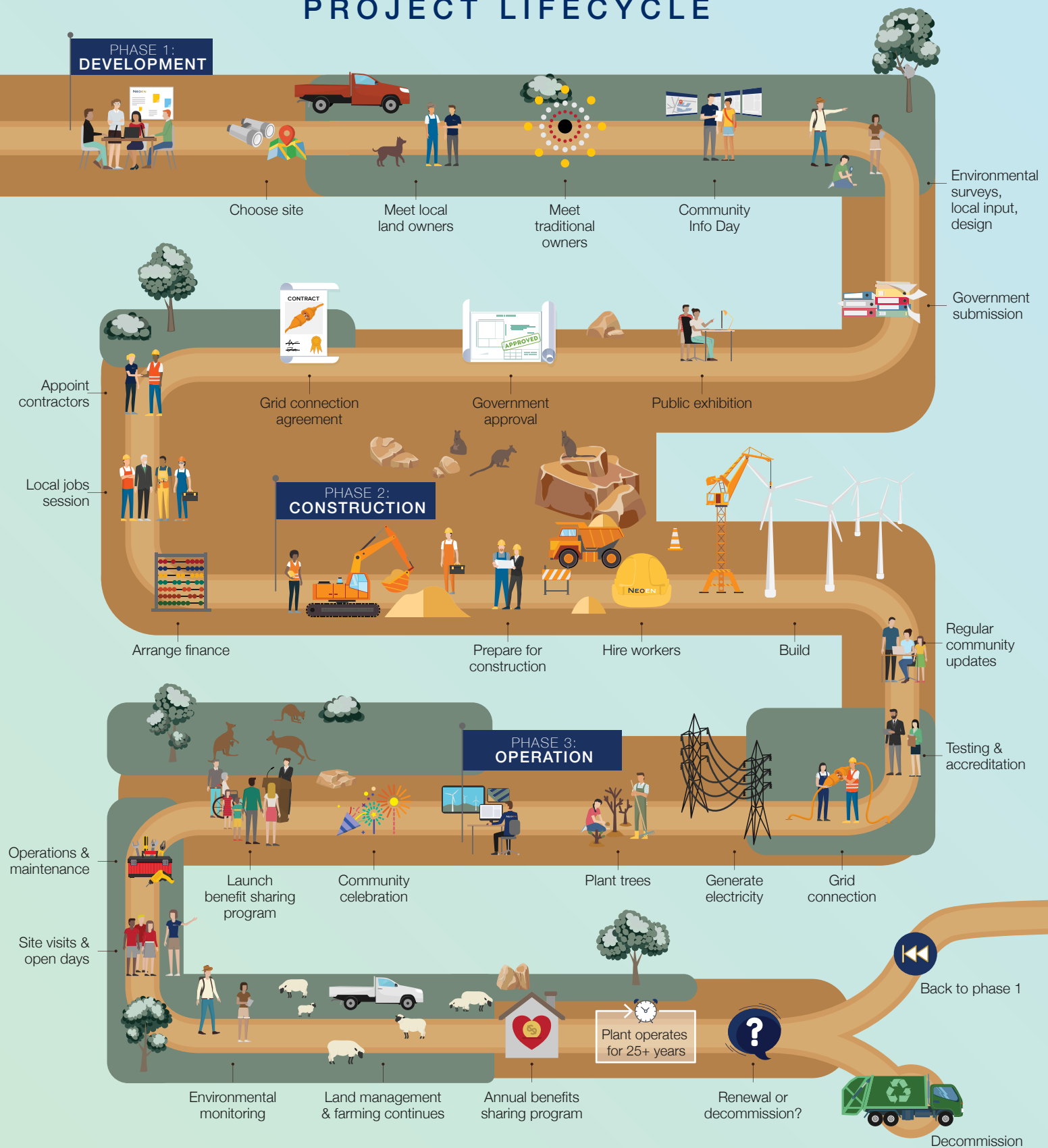


## STAGE 1: WIND TURBINE LAYOUT





# PROJECT LIFECYCLE



## ECONOMIC BENEFITS



**\$373 MILLION**  
INFRASTRUCTURE  
INVESTMENT



**190 JOBS**  
CREATED DURING  
CONSTRUCTION



**12-24 MONTHS**  
CONSTRUCTION  
DURATION



**5-10 JOBS**  
CREATED DURING  
OPERATIONS

## ENVIRONMENTAL BENEFITS

ABILITY TO PRODUCE  
**622,310 MWh**  
PER YEAR WHICH IS EQUIVALENT TO:



DISPLACING  
**504,000 TONNES**  
OF CO<sub>2</sub> EMISSIONS

POWERING  
**121,000 HOMES**

REMOVING  
**169,000 CARS**  
FROM THE ROAD

PLANTING  
**5.1 MILLION TREES**

## COMMUNITY BENEFITS



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.



### Solar and battery storage for households

Providing grants to local homeowners for solar panels and/or battery storage.



### Support of local art and tourism

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



### Tell us your ideas

To submit your ideas, please fill out our online survey:  
[surveymonkey.com/r/neoenthunderbolt](https://surveymonkey.com/r/neoenthunderbolt)

Existing program example

### CONCONGELLA PRIMARY



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."*

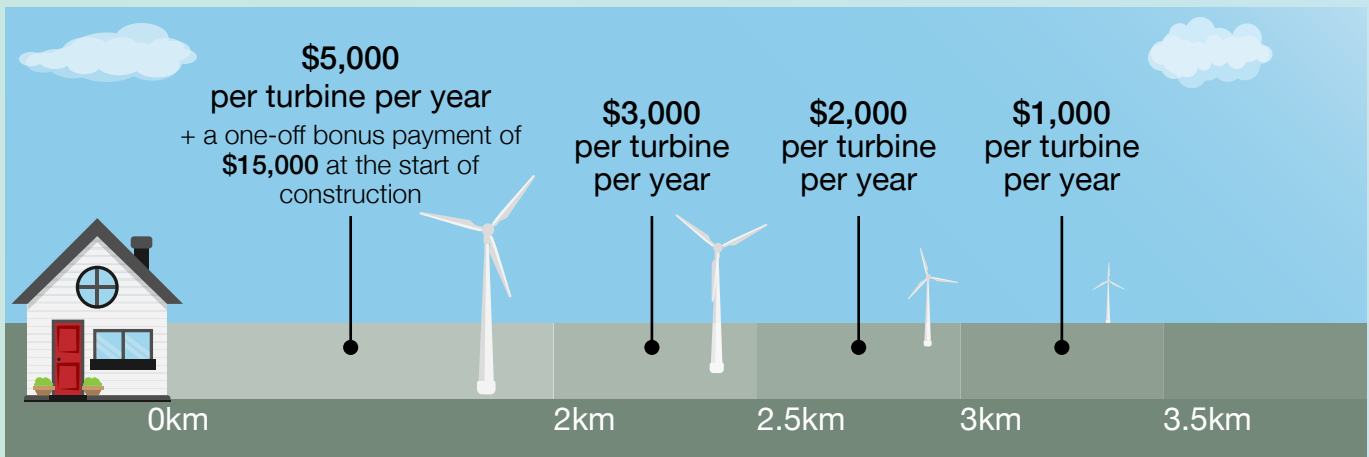
– Kristie Miller, Principal

*\*Based on the current project size for Stage 1*

## NEIGHBOUR BENEFIT-SHARING PROGRAM

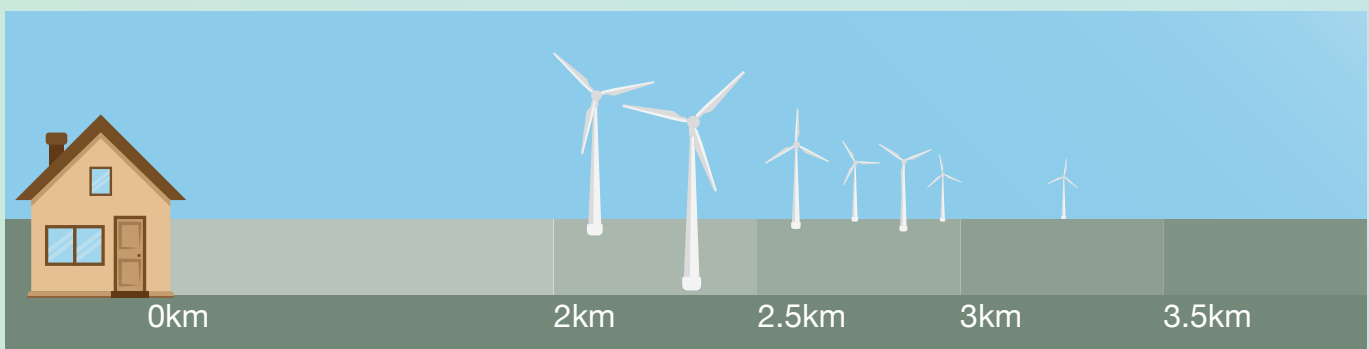
Our neighbour benefit sharing program provides neighbours with an annual payment throughout the operations phase of the project (25-30 years).

It is based on the number of turbines within certain distances of neighbour's dwellings. The nearer the turbines are, the higher the amount.



## EXAMPLE NEIGHBOUR PAYMENT

In this example, there are 2 wind turbines proposed within 2-2.5km from a neighbour's dwelling, 4 turbines between 2.5-3km and 1 turbine within 3-3.5km.



Their annual neighbour benefits payment would be: **\$15,000 each year**

$$(\$3,000 \times 2) + (\$2,000 \times 4) + (\$1,000 \times 1)$$

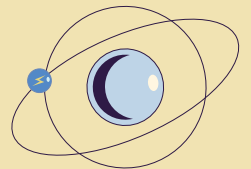
The final amount will depend on the wind turbine layout, which will be determined following the approval of the Development Application and in the construction period. The annual payments will begin once the project starts operating.

Please note that the program does not prevent neighbours from expressing their views for or against the project, either privately or publicly at any time.

NEOEN

# Learning Hub

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



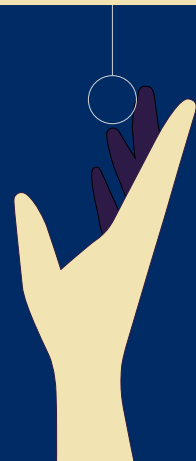
## Create dynamic, engaging lessons

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?

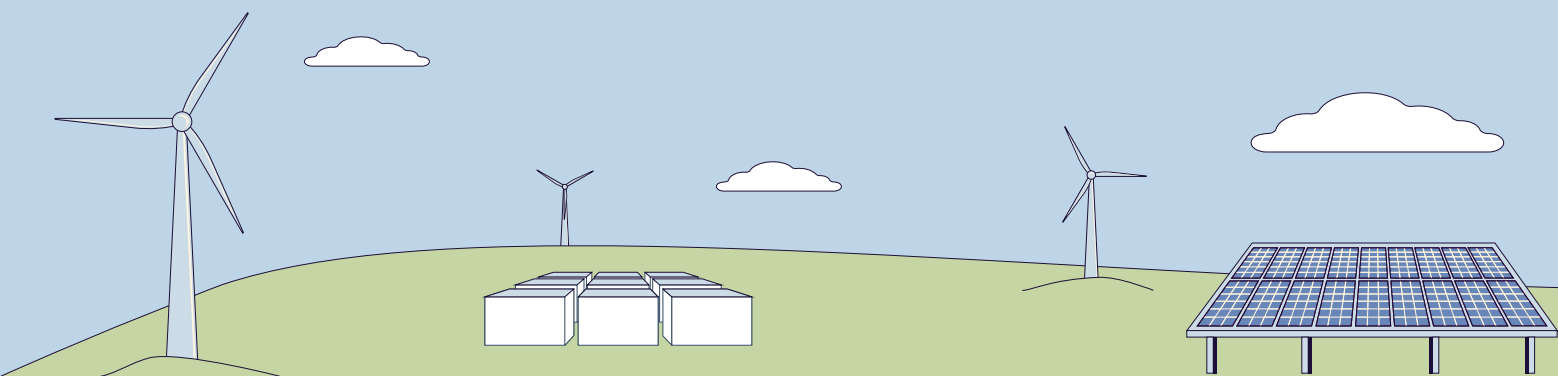
Why is wind a renewable energy resource?

How can solar energy power the night?

Interested?

Learn more!

[neoenlearning.com](https://neoenlearning.com)



## PROPERTY VALUES

### Concern:

The Project may have negative impact on property values.

### Neoen's response:

Neoen is not aware of any reliable, impartial research or evidence which establishes a correlation between real estate values and proximity to renewable infrastructure, either negative or positive.

The most recent and relevant study carried out in Australia was commissioned by the NSW Office of Environment and Heritage and published by planning consultancy Urbis<sup>1</sup> in July 2016. This report comprised both an analysis of available sales data and a 'literature review' of Australian and international studies (including a 2009 report prepared for the NSW Valuer-General's office). The findings in this study came to the following conclusion: *"In our professional opinion, appropriately located wind farms within rural areas, removed from higher density residential areas, are unlikely to have a measurable negative impact on surrounding land values."*

From Neoen's experience as Australia's largest owner and operator of large-scale renewable energy plants, anecdotally some landholders around our operating wind farms have said that property value increased. They have suggested contributors to this increase may include the economic improvement of the nearby town during construction, and host landholders looking to re-invest their additional income by purchasing additional property in the region.

Property values are influenced by a range of factors and it is therefore difficult to determine if wind or solar farms (or other similar infrastructure) can cause land values on neighbouring agriculture properties to increase or decrease. It is not expected that the Thunderbolt Energy Hub would have a measurable effect on the productivity or value of neighbouring properties.

## BUSHFIRE RISK

### Concern:

The Project may increase bushfire risk and impact aerial firefighting.

### Neoen's response:

There are no special aviation risks associated with turbines. Authorities also do not consider that turbines pose unique issues in aerial firefighting. Pilots view turbines as no different to other tall structures and hazards such as power lines, transmission towers, radio masts, mountains and valleys; turbines are simply another piece of infrastructure in the environment that needs to be managed on a risk basis when fighting fires.

Pilots fly by sight and will not fly into smoke. Wind turbines, if not covered by smoke, are easily visible in the environment. Regarding the hazard posed by moving blades to pilots, turbines will generally be turned off and locked as soon as requested by firefighters. Neoen maintains a 24-hour control room in Canberra which is able to turn off turbines remotely, in addition to local maintenance staff and technicians.

The Australasian Fire and Emergency Service Authorities Council's (AFAC) position paper on Wind Farms and Bushfire Operations also concluded that:

*"Wind farms are not expected to adversely affect fire behaviour in their vicinity. Local wind speeds and direction are already highly variable across landscapes affected by turbulence from ridge lines, tall trees and buildings. Any potential for wake turbulence from wind turbines influencing fire behaviour is expected to be controlled through the shutting down of wind turbines in a bushfire event."*<sup>2</sup>

Neoen is additionally undertaking an aviation safety assessment as part of the detailed assessment phase. Results of this assessment will be published in the Environmental Impact Statement (EIS) report, submitted as part of the Development Application to NSW DPIE.

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1 *Review of the Impact of Wind Farms on Property Values* (Urbis, 2016). <https://www.environment.nsw.gov.au/resources/communities/wind-farm-value-impacts-report.pdf>.  
2 AFAC Wind Farms and Bushfire Operations : <https://www.afac.com.au/insight/doctrine/article/current/wind-farms-and-bushfire-operations-doctrine>.



# RESPONSE TO CONCERNS



Local Dubbo residents celebrating the launch of our Dubbo Solar Hub in 2019.

## HEALTH IMPACTS

### Concern:

Potential health impacts from the Project, particularly infrasound on humans for many kilometres from the wind turbine sites.

### Neoen's response:

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.

Solar panels are placed on more than 25% of Australian homes and have been on homes across the world for the past 15 years. No health issues have been associated with solar panels.

The Office of the Australian Energy Infrastructure Commissioner (AEIC) furthermore concluded in its 2019 report:

*"... for the last two years, the Office has not received any complaints regarding allegations of vibration sensations being caused by a wind turbine's operation. ...Of material concern is the potential situation whereby a resident may fail to seek and obtain appropriate medical advice and treatment for a treatable health condition..."*

*...In November 2019, the South Australia Supreme Court handed down its decision in relation to the proposed Palmer Wind Farm. The Court concluded that claims that the turbines would cause sickness and health issues for residents were unsubstantiated."*<sup>3</sup>

<sup>3</sup> Australian Energy Infrastructure Commissioner's 2019 Annual Report: <https://www.aeic.gov.au/publications/2019-annual-report>.

## ENVIRONMENTAL CONCERNS

### Concern:

The Project could impact the natural environment, potentially causing a large loss to local bird life, in particular the large and small raptor species.

### Neoen's response:

Neoen engages specialist consultants for detailed flora and fauna surveys to determine the ecological attributes of the land. For the Thunderbolt Energy Hub project, specialists from the company Umwelt are undertaking the ecological assessment, which has involved six seasonal on-site surveys since early 2020. Umwelt are very experienced in this field and have worked on several renewable energy projects.

Neoen aims to minimise the impact on flora and fauna for all of its projects by designing projects outside areas of high conservation significance, and through 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 environmental management plans
- identifying 'no-go zones' within the project site
- conducting pre-clearance surveys

Neoen also consults with government departments of environment and biodiversity throughout development, construction and operation of projects, as well as local non-government organisations. This will include the consideration of Environment Protection and Biodiversity Conservation Act (1999) and consultation with the federal agency Department of Agriculture, Water and the Environment.



*Umwelt has been doing ecological surveys on the area since early 2020.*

*Learn more about about it and what's involved for renewable projects by scanning the QR code.*

# RESPONSE TO CONCERNS

A response to this concern is also provided below from Umwelt's ecologist, who has been leading the ecological surveys for the Project:

*"The Project requires approval under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). As a State Significant Development (SSD), the development application for the Project will be subject to the requirements of Division 4.7 of the EP&A Act. As part of the approval application, Umwelt (Australia) Pty Limited (Umwelt) are preparing a biodiversity assessment using the Biodiversity Assessment Method (BAM) under the Biodiversity Conservation Act 2016 (BC Act).*

*The detailed surveys completed as part of the assessment so far include:*

- Rapid vegetation assessments,*
- BAM Vegetation Integrity Plots,*
- Targeted surveys for threatened flora and fauna species, including:*
  - walked transects,*
  - diurnal and nocturnal bird surveys,*
  - call playback,*
  - spotlighting surveys,*
  - reptile surveys,*
  - remote survey cameras, and*
  - Bird and Bat Utilisation Surveys.*

*Additional ecological surveys will be undertaken as part of the Project as it progresses. There will also be extensive mapping and analysis, technical reporting, assessment of significance, etc.*

*The risk the proposed wind farm will potentially pose on avifauna species (birds and bats) will be assessed specifically through the Prescribed Impact Assessment for Turbine Strike, as part of the Biodiversity Development Assessment Report (BDAR) that will be prepared through the BAM assessment.*

*A key framework underlying the BAM is for a Project to demonstrate how it avoids, minimises and/or mitigate impacts on biodiversity values. Umwelt is working closely with Neoen to facilitate the avoidance and minimisation of impacts on biodiversity values.*

*The Project will offset any residual significant impacts to biodiversity values in accordance with government requirements.*

## DECOMMISSIONING

### Concern:

Responsibilities of decommissioning the Project, including costs.

### Neoen's response:

At the end of the wind farm's life cycle (typically 25-30 years) the wind farm is either re-energised or decommissioned. If the wind farm is decommissioned, Neoen is responsible for the removal of the wind turbines and all above ground structures and for the rehabilitation of the site. Decommissioning is a condition of the wind farm's development approval from the State government and forms a part of the Lease agreement between Neoen and host landowners. The cost of decommissioning is considered in all of Neoen's projects.

During decommissioning most of the materials the wind farm is made from can be reclaimed or recycled. This is because the steel, copper, lithium and other materials they are made of retain significant value.







*Environmental Consultant Neil Marriott discusses how Neoen community grants have helped the local environment at our Bulgana Wind Farm.*

*Learn more about what he has to say by scanning the QR code.*

## CONFLICT OF INTEREST

### Concern:

Potential conflict of interest of companies engaged by the proponent (Neoen) to undertake various impact assessments.

### Neoen's response:

Neoen is not aware of any conflict of interest for the companies working on the project.

Neoen has engaged Umwelt as its Lead Planner for the Thunderbolt project based on their professionalism and proven ability to manage and deliver high quality, rigorous, impact assessments. A number of sub-consultants have been engaged by Umwelt to undertake specialist assessments, for example the noise assessment and the visual assessment.

All consultants engaged by Neoen are experienced professionals in the energy sector, having worked on many projects for various proponents. All consultants undertake their assessments and reporting in line with the relevant legislation and assessment guidelines for wind farms and solar farms. Please refer to Section 3.3 of the Thunderbolt Energy Hub Wind Farm Scoping Report for further information on the relevant legislation that the project is assessed against<sup>4</sup>. All consultants are aware that they will need to defend their study methodologies and conclusions when questioned by Neoen, and the State and Federal authorities, and need to show that they are applying the most up-to-date and scientifically rigorous methodologies when assessing project impact.

As the long-term owner and operator of these assets as well as the developer, Neoen has no interest in building a project that is not in line with industry-best-practice. As the long-term operator of these assets, any shortcuts taken during the development will impact us during project operation.

<sup>4</sup> Thunderbolt Energy Hub – Wind Farm legislation: <https://www.planningportal.nsw.gov.au/major-projects/project/40551>.



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## ENERGY HUB



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