

VICTORIAN BIG BATTERY

Community Information Booklet

NEOEN



victorianbigbattery.com.au



Inès Béchameil, Project Manager



contact@victorianbigbattery.com.au



1800 966 202

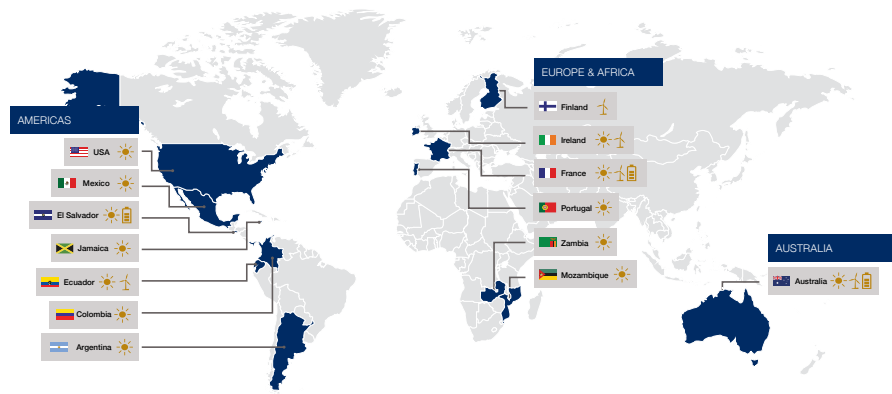


GLOBALLY

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

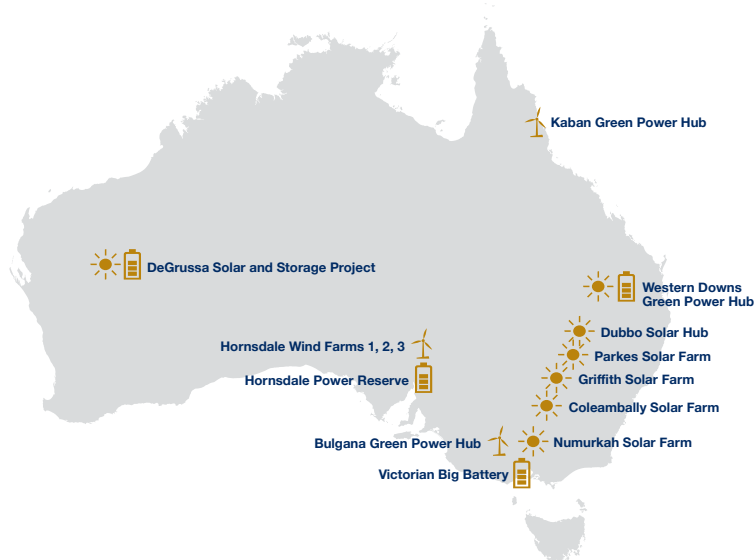
We operate across renewable energy technologies including solar, wind and storage in Europe, Central America, Africa, the Middle East and Australia.

Neoen's total capacity in operation and under construction is currently over 3 GW and we are aiming for more than 5GW by 2021.



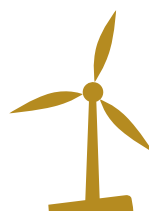
LOCALLY

Neoen Australia began operations in 2012. Over the last eight years the company has initiated the development of more than 2GW of solar and wind projects through organic growth, local partnerships and strategic acquisitions.



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

WORLD'S FIRST BIG BATTERY HORNSDALE POWER RESERVE



FIRST STAGE
TOOK LESS THAN
SIX MONTHS TO
BUILD

- 150MW Lithium-ion battery located next to Hornsdale Wind Farm
- Owned and operated by Neoen
- Installed and maintained by Tesla

- Provides grid stability services
- Saved SA energy consumers over \$150 million in its first two years
- Now testing grid scale inertia services in a world-first



REDUCES RISK
OF BLACKOUT
IN SOUTH
AUSTRALIA



DELIVERING CHEAPER ENERGY FOR INDUSTRY



LAVERTON STEELWORKS VICTORIA

Laverton Steelworks have agreed to take power from Neoen's 128 MW Numurkah Solar Farm under a 15-year deal. GFG Alliance's Executive Chairman said the deal would help lower energy costs at Laverton.



DEGRUSSA MINING WESTERN AUSTRALIA

DeGrussa is the largest off-grid solar battery storage project in Australia. It powers a gold and copper mine in remote WA. Commissioned in June 2016, it provides a solar and storage solution to the majority of the mine's daytime electricity requirements, offsetting up to 20% of total diesel consumption annually.



COLES AUSTRALIA-WIDE

Coles has signed an agreement that will source large-scale generation certificates (LGCs) from Neoen's portfolio of renewables located across New South Wales, Queensland, Victoria and South Australia. The deal will help Coles towards its target of 100% renewable energy by 2025.

coles

WHAT DOES A BIG BATTERY LOOK LIKE?

HORNSDALE

POWER RESERVE

Our 150MW battery outside Jamestown, SA
co-located with Hornsdale Wind Farm



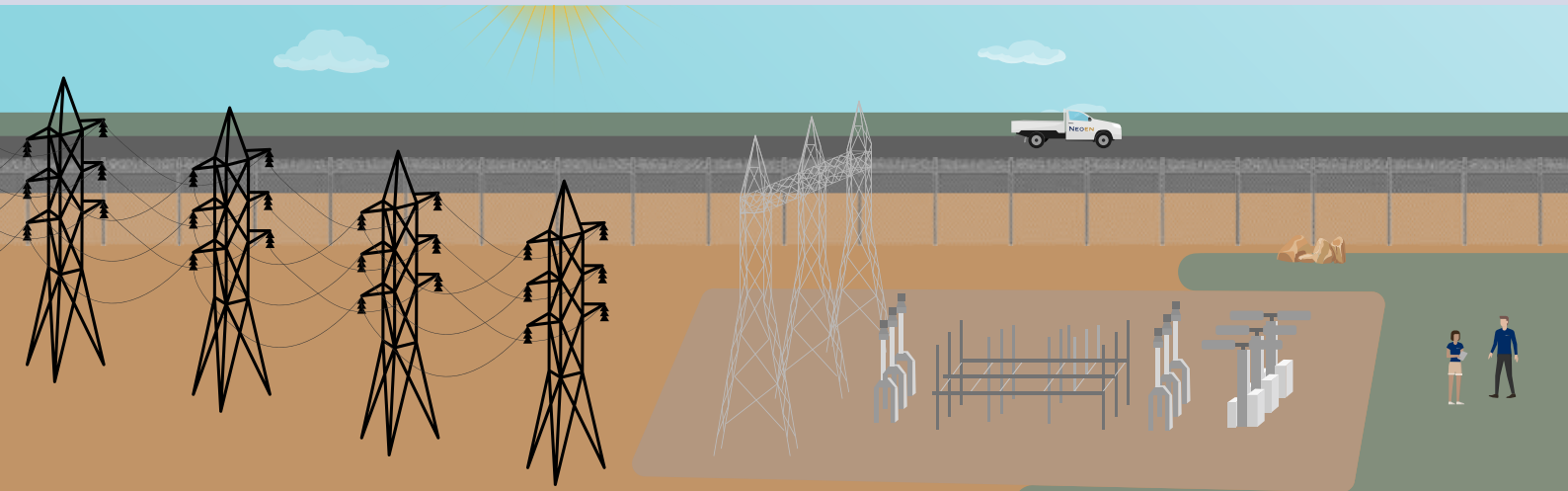
BULGANA

GREEN POWER HUB

Our 20MW battery in Bulgana, Victoria
located next to the Bulgana substation.



CHOOSING THE SITE



1) Good grid location

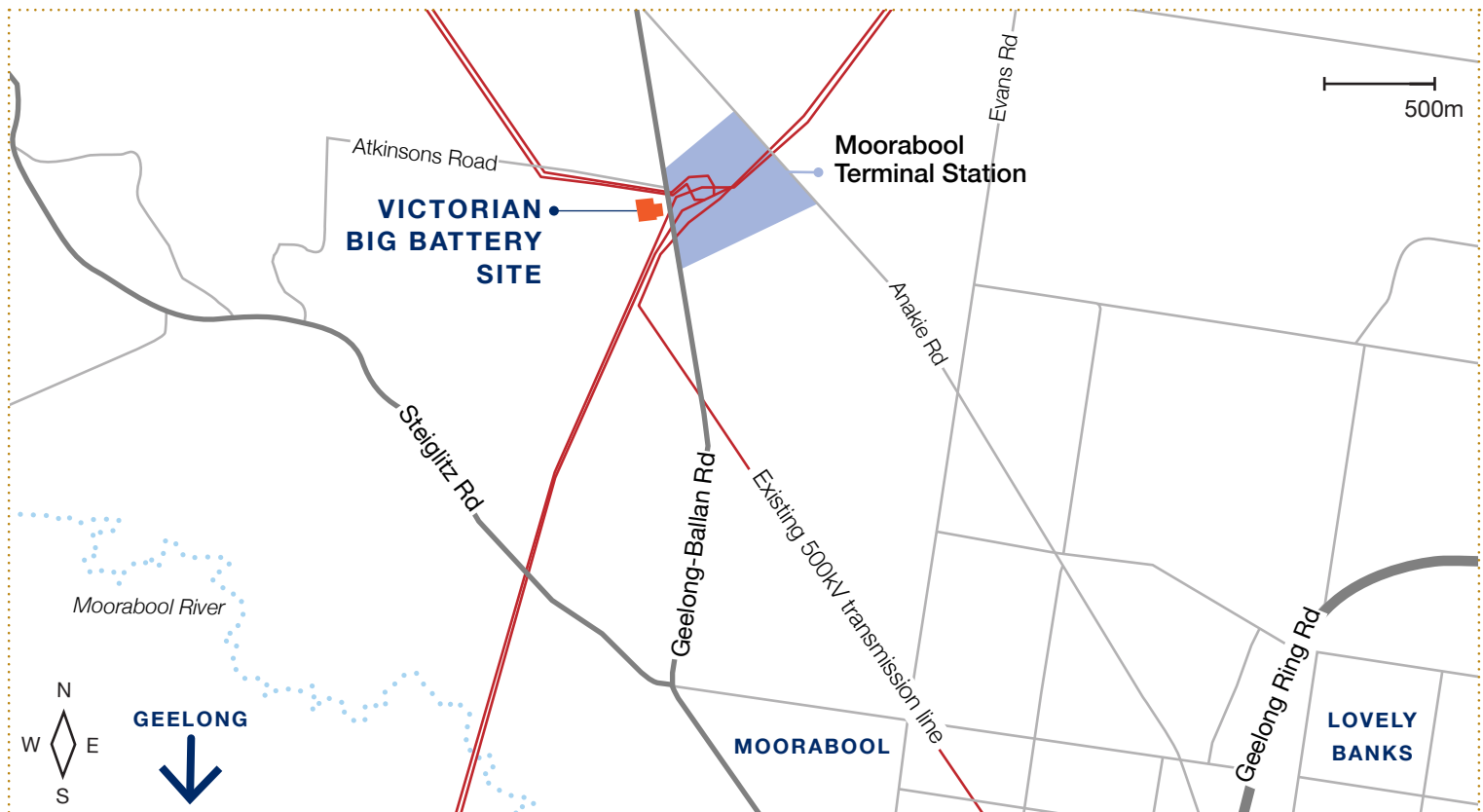
The Victorian Big Battery will be located near the existing Moorabool Terminal Station, approximately 13km northwest of Geelong.

2) Proximity to substation

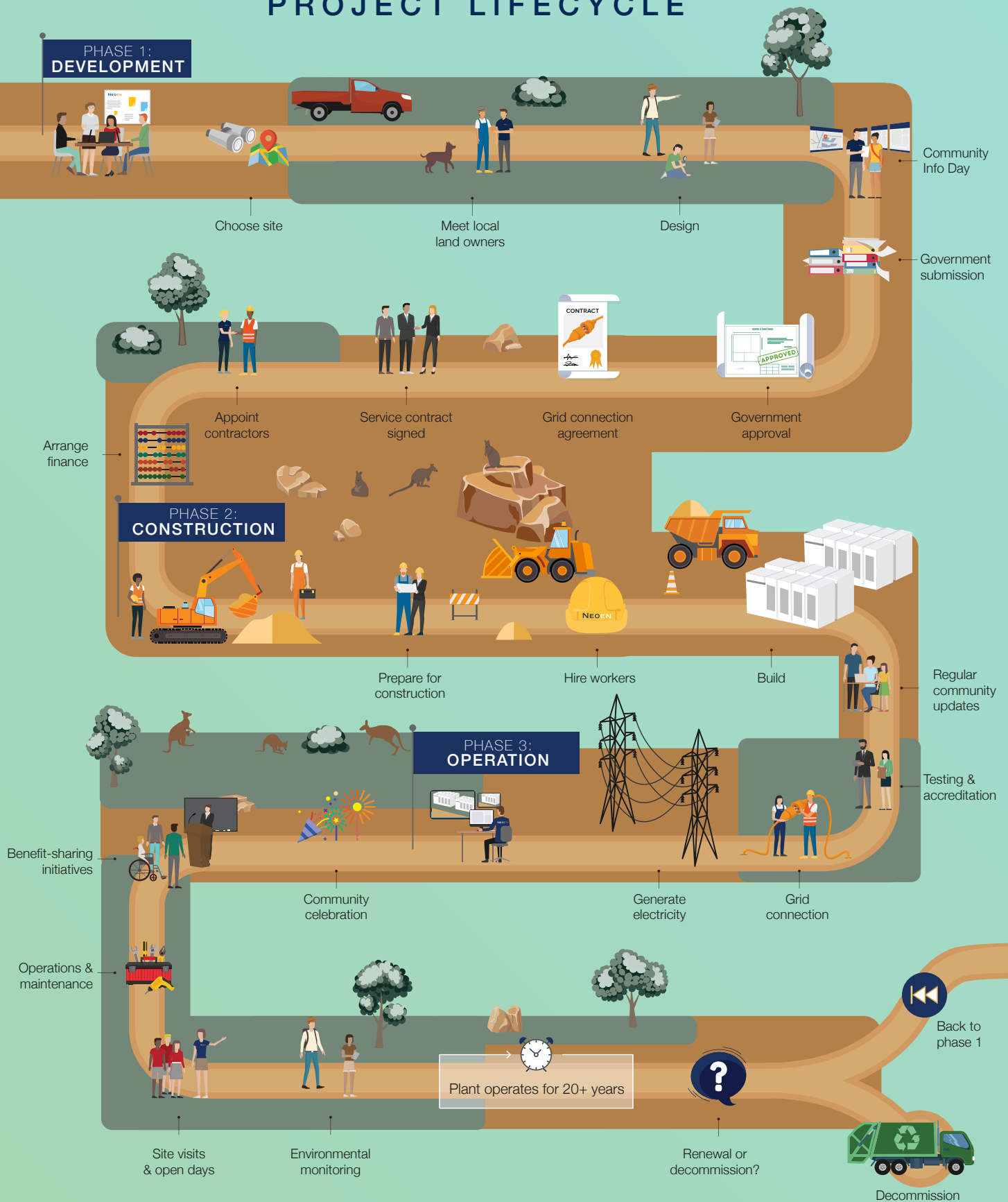
This land is flat, making it ideal for construction and operation of a battery storage facility, and is adjacent to the high voltage 500KV transmission line which means the power can be sent quickly to where it is needed.

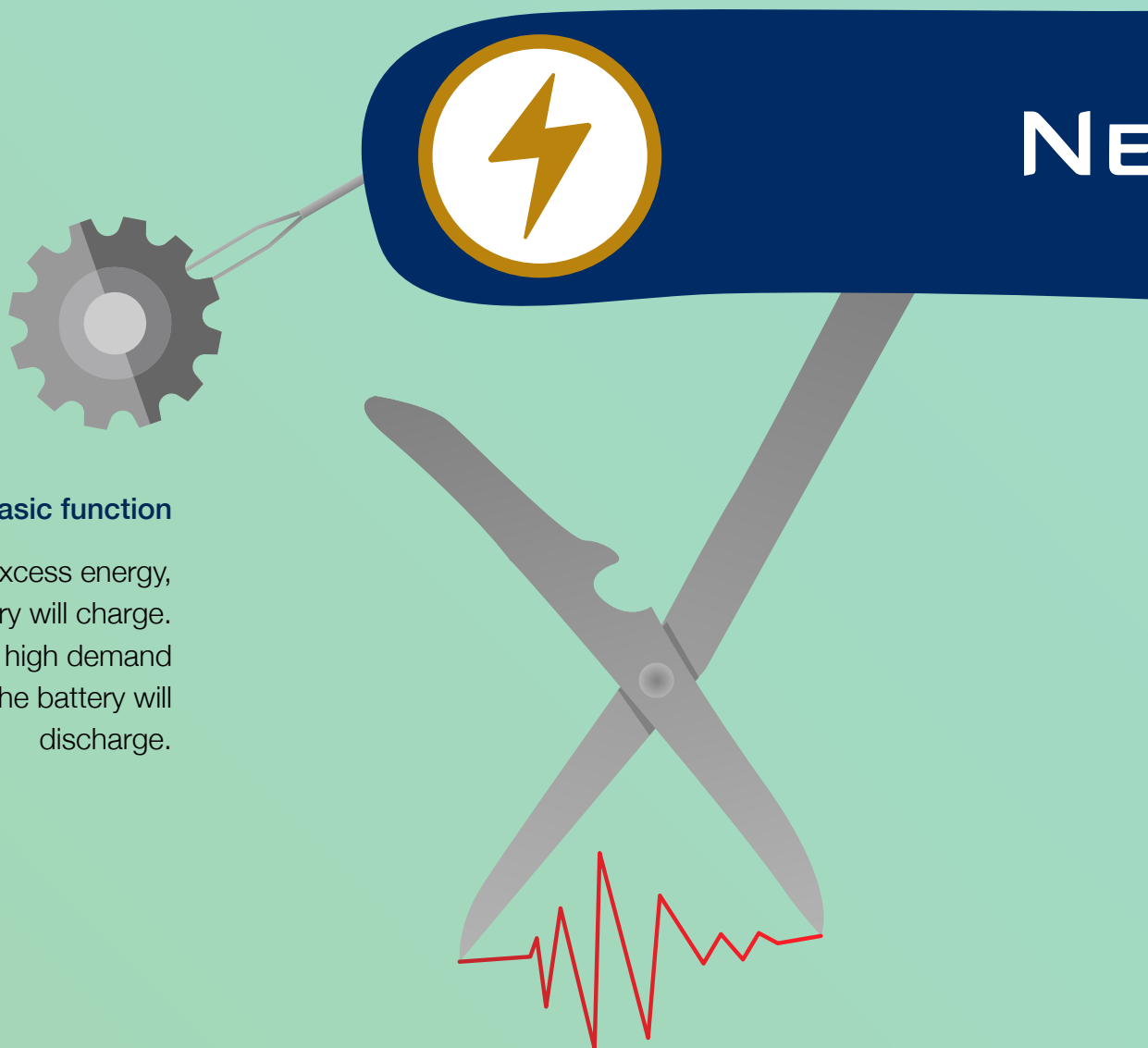
3) Renewables Support

The Victorian Big Battery will support the increasing number of solar and wind projects in Victoria and increase transfer capacity over the Victoria-New South Wales Interconnector (VNI) of 250MW at peak times.



PROJECT LIFECYCLE





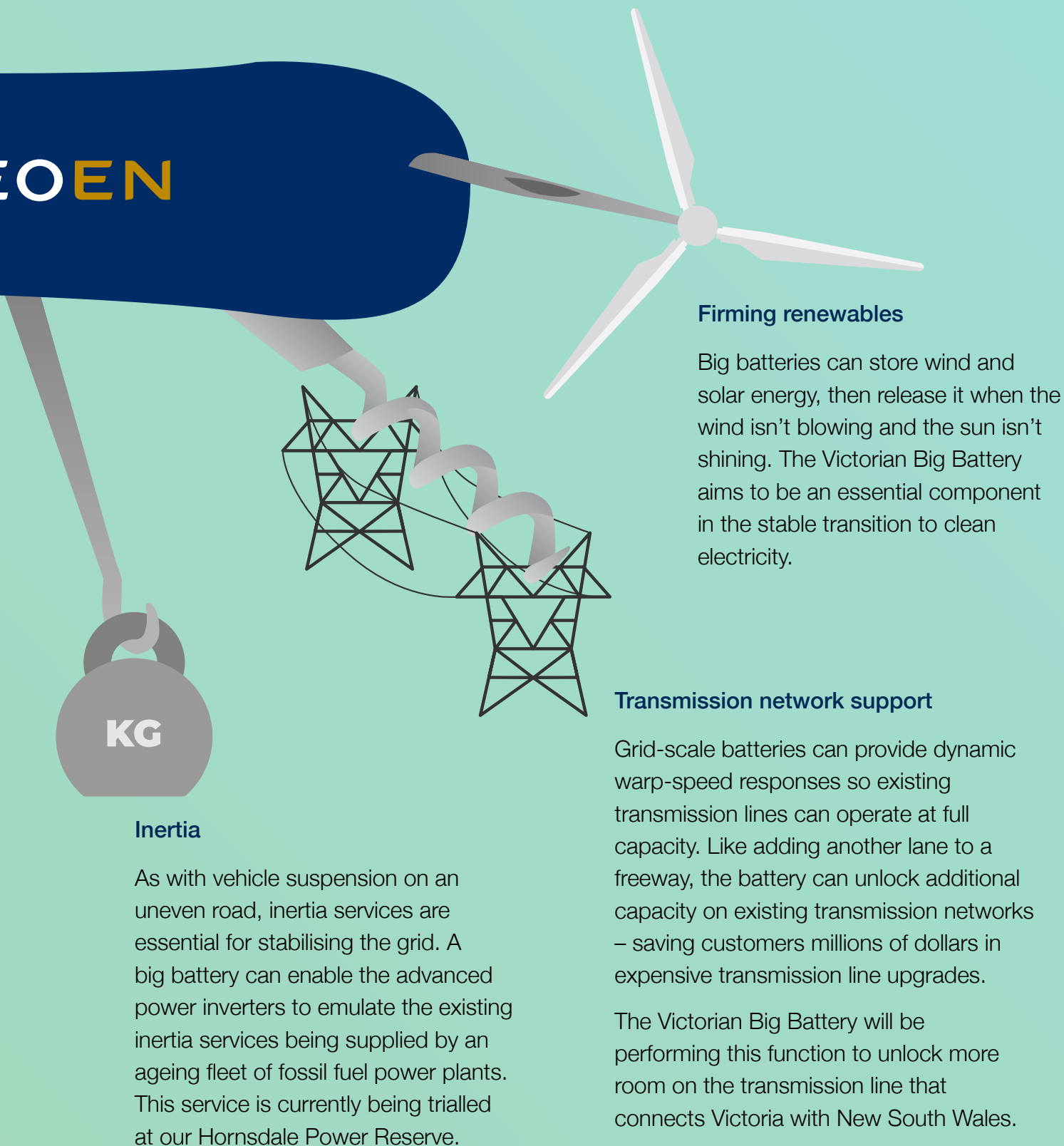
Basic function

When there is excess energy,
the battery will charge.
When there is high demand
for energy, the battery will
discharge.

Frequency support

To maintain the stability of the system, the grid has frequency control. The battery injects electricity in response to frequency changes. The battery will also add competition to the markets which helps reduce consumer electricity prices, helping to reduce electricity costs.

BATTERY DO?

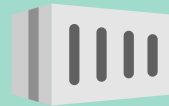


FACTS & FIGURES

GRID-SCALE ENERGY STORAGE SYSTEM



300MW
power capacity



450MWh
energy storage



ENERGY STORAGE: Will hold enough energy in reserve to power over half a million homes for one hour

SIZE: Will cover an area similar in size to the football oval at Geelong's GMHBA Stadium

OPERATIONAL: Will be operational by the end of 2021.

THE TECHNOLOGY

Battery packs are enclosed in custom designed, dust and waterproof 'cabinets' made of galvanised steel. Cabinet colour is white or light coloured to assist with heat management and each cabinet has its own internal thermal management system.

Will conform to electricity industry standards

Will use an industrial inverter to convert DC power to AC when discharging (vice versa when charging)

Battery cabinet



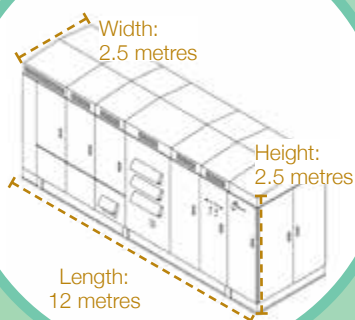
Likely to be lithium-ion battery packs enclosed in steel cabinets, similar to shipping containers

Will meet all safety and bushfire risk requirements

Will use 210 Tesla Megapacks which have a 20-year lifespan

Inverters are made from galvanised steel, and may exist as one single 20ft container or a few outdoor cabinets on concrete slabs.

Inverter



WE OWN & OPERATE OUR PROJECTS

Victorian Big Battery

The Victorian Big Battery will be managed from Neoen's 24/7 Operational Control Centre in Canberra, which currently operates our 14 existing projects across Australia. This office coordinates with local maintenance contractors for safe, effective and compliant operations.

Neoen's Portfolio

Neoen develops renewable energy projects to own and operate them – not to on-sell them. With over GW of operating projects connected to Australia's National Electricity Market (AEMO), our asset and operations team play an important role in managing our power plants.



Our Partnerships

Neoen and Tesla have a proud history of working together on the world's first big battery in South Australia. The Victorian Big Battery will use Tesla Megapack technology – a high-density, modular system that can be installed quickly.

Neoen is working closely with our network partner AusNet Services, who will deliver the connection required for the Victorian Big Battery.

AusNet Services is an ASX listed company which owns and operates the Moorabool Terminal Station and Victoria's electricity transmission network.



WHAT HAPPENS DURING CONSTRUCTION



IN THE TOWN

Economic boost

The project is expected to provide more than 80 jobs during construction and six full-time permanent jobs.

It provides opportunities for local suppliers, businesses, schools and community groups.

Network partner AusNet Services has sourced the project's power transformers from local business Wilson Transformer Company.

ON THE ROADS

Road upgrades

Minor road upgrade works are being undertaken at the intersection of Atkinsons Road and Geelong-Ballan Road to ensure safe access to the battery site and in accordance with the Traffic Management Plan.

AT THE SITE

Increased activity

Increased activity with up to 80 people at work.

The site has been mobilised with construction expected to continue until July/August, 2021.

COMMUNITY BENEFITS



Community benefit fund

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



Educational resources

Develop educational resources for local schools to support learning about renewables and our future energy system.



Local tourism

Develop a local tourism initiative centred on batteries or renewable energy



Possibility to invest

Community co-investment is common overseas and just starting in Australia



Reach targets

The battery will make an important contribution to Victoria reaching its renewable energy targets of 40 per cent by 2025 and 50 per cent by 2030.



Tell us your ideas

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

ABOUT STORAGE

Q1. What technology is being used?

The Victorian Big Battery will use Tesla Megapacks which have a 20-year lifespan. They retain most of their capacity right up to the 20-year point and are often capable of operating beyond this time depending on market conditions and other factors.

Q2. How big will it be?

Once completed, the 300MW battery will cover an area similar in size to the football oval at Geelong's GMHBA Stadium. The battery will look like an enclosure of white containers with the highest point being the noise wall at approximately seven metres. The battery packs themselves are about three metres high.

Q3. How long will it take to build? When will it be operational?

The Victorian Big Battery will take approximately 10 months to build and will be operational by the end of 2021.

Q4. What are the benefits of battery storage?

The Victorian Big Battery will store energy in times of high production and release energy in times of high demand, similar to how a battery on a home solar system works. It will also help to stabilise the grid. It has an emergency response mode to prevent blackouts and can maintain voltage and frequency levels.

Q5. How will the battery reduce costs for energy consumers?

The Victorian Big Battery will reduce costs in three ways, by:

- supporting more wind and solar, which are now the cheapest forms of power
- allowing more power to flow into the state, increasing competition and pushing electricity prices down
- helping to avoid blackouts and the associated costs

Q6. What happens to the batteries when they reach the end of their life?

We commit to removing all above-ground infrastructure and rehabilitating the site when the project ceases to operate. This is a condition of the Development Approval. After removal, a large percentage of the material in the batteries will be reclaimed or recycled; more than 60% of materials, especially critical minerals, will be recovered for re-use.

Q7. How will the project impact the surrounding area?

Any impacts will be mostly during construction. We are working with the community, neighbours and City of Greater Geelong Council to minimise these impacts. As part of the planning process, we are required to submit a Traffic Management Plan along with noise and dust impact studies.



Q8. Who is paying for it?

The project is being privately financed by Neoen.

Neoen has a service contract with the Australian Energy Market Operator (AEMO) to provide 250MW in System Integrity Protection Scheme (SIPS) Services which will permit an increased transfer capacity of 250MW over the Victorian-NSW Interconnector (VNI) at peak times.

The battery has a pre-programmed response to a network failure and when this is triggered by an unforeseen powerline failure or generator outage, the battery automatically charges or discharges to prevent a blackout. Batteries are incredibly well suited to perform this service because they can respond at warp speed.

Neoen is working in partnership with AusNet which owns and operates the Moorabool Terminal Station and the Victorian transmission network.

Q9. Will it increase the cost of power?

Consumers will pay for use of the battery through their power bills, but the reduction in wholesale energy prices delivered by the battery will mean that Victorians will pay less for their power – with independent analysis showing that every \$1 invested in the battery will deliver more than \$2 in benefits to Victorian households and businesses.

Q10. Will it create employment?

It is expected the Victorian Big Battery will create about 80 construction jobs and six full-time ongoing jobs. Local suppliers are being sourced where possible and our partner AusNet has sourced the power transformers from local business Wilsons Transformer Company. The project will deliver over \$200 million in investment into the Geelong region.

Q11. Are there any health risks associated with the battery?

The Victorian Big Battery is using similar technology to the batteries that are increasingly installed in homes, just on a larger scale. There are no known health risks associated with properly maintained large-scale battery installations.

Q12. Does it increase fire risk?

During the design phase Neoen consulted with the CFA in accordance with the CFA guidelines for Renewable Energy Installation (CFA 2019). The risk of a fire originating from internal product failures is extremely low and is minimised through a fail-safe design.

Q13. I live nearby – what impact will this have on me?

During construction, we expect some localised traffic, noise and dust impacts. However, we will minimise them as much as possible. Following installation, the battery will be visible at the site and will look like an enclosure of white containers.



VICTORIAN BIG BATTERY



victorianbigbattery.com.au



Inès Béchameil, Project Manager



contact@victorianbigbattery.com.au



1800 966 202