SUPERNODE NORTH

BATTERY ENERGY STORAGE SYSTEM

Private Energy Partners and Solquartz are planning to develop the Supernode North Battery Energy Storage System (BESS), as part of the proposed Northern Quartz Campus, within the Lansdown Eco-Industrial Precinct.

The Northern Quartz Campus also incorporates a Metallurgical Silicon Production Facility (smelter) and a Biochar Plant.

We plan to power the Northern Quartz Campus with renewable energy from two nearby solar farms we propose to develop.

The Supernode North BESS would store the energy from these solar farms. It would also support the local energy networks by storing up to 6,080 megawatt hours (MWh) of excess energy from the grid and releasing it back into the network when it is needed, including during periods of low generation, high demand (such as at night) and during unplanned outages.

This will help reduce electricity waste, stabilise power supply and support a more efficient, secure and reliable energy system to power Queensland homes and industry.

Supernode North at a glance

- Stores up to 6,080 MWh
- Discharges up to 760 MW
- Releases up to 8 hours of energy on demand
- Spans 1km
- Connects to a 2.9km transmission line to Powerlink's Calcium substation

Proposed construction

- Stages 1 and 2 – by 2027
  - Includes substation, transmission lines, retention ponds
- Stage 3 – to be confirmed based on requirements of the Metallurgical Silicon Production Facility

Proposed operations

- Due to start by 2029 for about 30 years (possible extension with replacement batteries)

Safety first – always

The wellbeing of our neighbours, the community and workers is always our highest priority.

The BESS would use components from manufacturers with a strong history of meeting international safety standards, including UL 9540A fire-testing requirements for battery storage. It will also be designed and installed in line with the Australian Standard AS/NZS 5139:2029 for energy storage systems.

BESS fires are considered highly unlikely due to multiple layers of safety design. However, as part of our planning, we will prioritise fire safety and prevention, and emergency response in the unlikely event of a fire.

Safety Systems: In-built mechanisms will automatically detect fire, allow battery ventilation and manage temperature across the system.

Proper setup: Equipment will be carefully designed, built and installed to meet safety standards.

Smart monitoring: Sensors and automated controls will detect faults and shut batteries down if a fault is detected.

Fire safety: Each unit will include advanced fire detection and suppression systems.

Containment: Battery containers will be fire-resistant and able to hold fire inside without it spreading.

Remote control: The fire suppression system will be able to be activated from a distance if needed.

Environmental protection: Water used in firefighting will be stored in drains and retention ponds, which will be safely contained by shut-off valves and only discharged after the water has passed stringent quality checks. There are no tailings dams on the site as a BESS does not produce tailings.

Heat management: Batteries and inverters produce heat during operation. The BESS will have features to ensure safe and efficient equipment performance, including liquid cooling fans and ventilation systems to keep temperatures within a safe operating range.

Engaging with local emergency services: We will work closely with local emergency services to ensure emergency response preparedness throughout project planning and operations.

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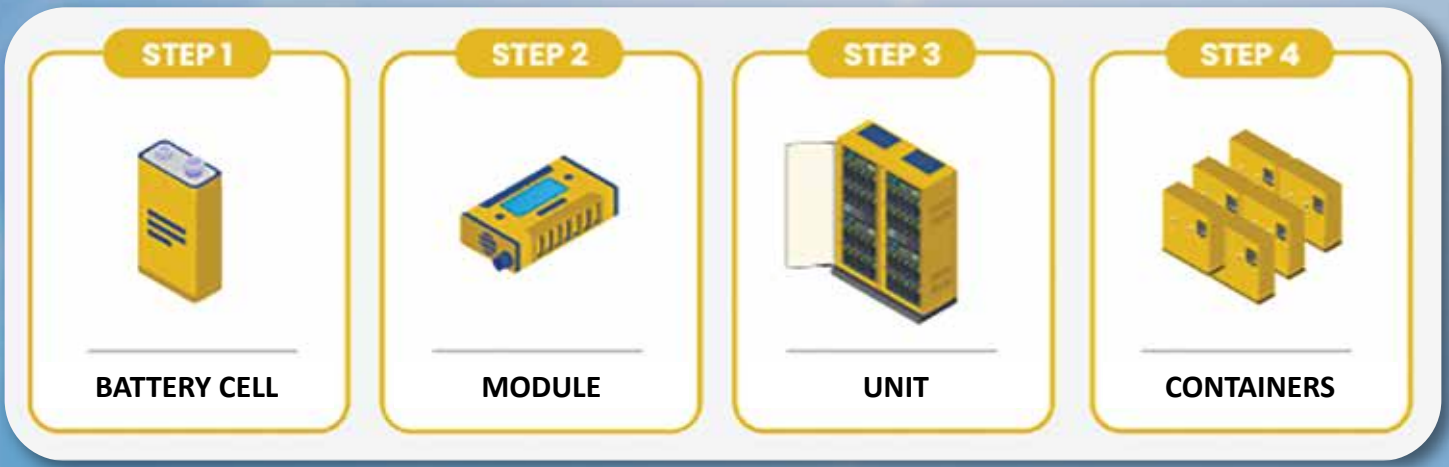
What is a BESS?

A BESS is made up of several parts that work together to store electricity so it can be used at a later time.

Batteries: Individual low-voltage, rechargeable battery cells store energy. These batteries are arranged within a battery module, and modules are grouped together to form a battery unit.

Containers: Heavy-duty steel boxes, like shipping containers, house several battery units. Containers are arranged about 30cm to 3.5m apart and include safety systems such as fire suppression.



BESS management systems

Battery Management System (BMS) to monitor and protect each battery cell so it operates safely and efficiently. The BMS manages charge and discharge cycles by calculating safety limits and coordinating with the Energy Management System.

Energy Management System (EMS) to determine when to charge the batteries or discharge electricity to the grid.

Power Conversion System (PCS) to convert electricity between Alternative Current (AC) and Direct Current (DC).

- AC electricity is received from the grid and converted into DC electricity so it can be stored in the batteries.
- DC electricity is then converted back to AC electricity to return it to the grid.

Other equipment needed to keep the Supernode North BESS running safely and effectively will include a switchyard, transformers, cabling and a transmission line to Powerlink's Calcium substation.

Noise management

Cooling and ventilation systems can generate noise. A site-specific noise assessment will ensure the final layout meets *Queensland Environmental Protection (Noise) Policy 2019* limits during the day and night.

Recycling & restoration

We will comply with Australian standards for battery disposal and recycling, including removing batteries, containers, transformers and cabling from the site once they have reached the end of their operational life. We commit to recycling as many of these items as possible and restoring the site to pre-project conditions.

Project planning

Planning for Supernode North BESS commenced in 2024 and has been supported by community and stakeholder engagement. We submitted the BESS Development Application (DA) to Townsville City Council in September 2025 and public notification occurred from 14 November to 5 December 2025. Due to planning legislation changes introduced by the Queensland Government on 12 December 2025, we expect to resubmit our DA to the State Assessment and Referral Agency shortly. A Social Impact Assessment will form part of our DA. Another public notification period will follow. Subject to approvals, construction would start by 2027 and be completed by 2029, conditions permitting.

About Us

Private Energy Partners is an affiliate enterprise of Quinbrook and Quinbrook's dedicated development, delivery and operations service provider, specialising in energy and infrastructure projects across Australia, North America and UK.

Quinbrook is a global business founded in 2015 by Queenslanders who have invested in more than 200 low-carbon, renewable, storage and critical minerals projects over the past 25 years. Quinbrook has invested in Solquartz, which is the project proponent.

Solquartz is a Queensland-based portfolio company, which aims to produce sustainable and ethically sourced silicon for critical industries.

Quinbrook and Private Energy Partners' Supernode Battery Energy Storage System in Brendale, Queensland

Find out more

For more information about this project, scan the QR code to visit our website, northernquartzcampus.com.au, email community@private-energypartners.com or call us on 1800 975 039.

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Private Energy Partners acknowledges the Traditional Custodians of the lands on which we operate and meet, recognise their continuing connection to Country, waters and communities, and pay our respects to Elders past and present.

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