



MIRIAM VALE

BATTERY ENERGY STORAGE SYSTEM

Private Energy Partners Australia (PEP) is proposing to build a Battery Energy Storage System (BESS) about 6km by road south-west of the Miriam Vale town centre, and 60km south-west of Gladstone. The BESS will be co-located with the proposed Miriam Vale Solar Farm and will connect to Powerlink Queensland's nearby electricity network via a substation.

BESS technology reduces electricity waste and stabilises power supply during low-generation and high-demand periods, such as at night. The stored energy can also be used to support the network during unplanned outages. This supports a more efficient, secure and reliable energy system.

The Miriam Vale BESS will store surplus energy produced at the Solar Farm, and excess energy from the network, releasing it back into the network when it is needed.



Planning and design

Safe and efficient operation of the Miriam Vale BESS is paramount. PEP’s BESS planning and design considers the surrounding community and incorporates mechanisms to prevent fire and protect the environment.

BESS components will be sourced from manufacturers with a proven track record supplying equipment compliant with international testing standards for safe battery storage (Underwriter Laboratory UL 9540A fire testing). The BESS will also comply with the Australian Standard AS/NZS 5139:2029 for energy storage.

A Battery Management System (BMS) will constantly monitor the BESS to provide early hazard warnings, send real-time alerts, and shut down faulty or damaged equipment if needed. If a serious fault is detected, the BMS will disconnect and isolate the battery from the system and immediately notify the operator and emergency services. The BMS will run on an uninterrupted power supply.

Our commitment to community safety

Emergency Response, Bushfire Management, and Fire Safety Strategic plans will support the safety of our team, our neighbours, the community and the environment. These plans, along with a Local Action Plan, will be developed with local authorities, to help prevent and control a potential fire and ensure a rapid and coordinated response in the unlikely event of an incident.

Our plans include risk assessment requirements, emergency response procedures, communication protocols, vegetation management processes, and procedures for regular safety drills, equipment testing and health and safety training.



BESS at a glance

- ⇒ stores up to 4000 megawatt hours (MWh) of energy from the Solar Farm or the grid
- ⇒ discharges up to 500MW
- ⇒ releases up to 8-hours’ energy on demand
- ⇒ will operate for about 30 years.

The BESS will have advanced fire suppression and containment measures including metal walls and sprinkler systems to isolate a fire or fault within the container of origin.

The facility will be managed by a team of specialists who will oversee its operation by performing regular maintenance checks and ensuring the system is complying with strict safety protocols.

The site will have multiple access points for first responders and be equipped with on-site firefighting equipment, including water tanks and personal protective equipment. The BESS will be positioned with sufficient setbacks and firebreaks to create a buffer between the site and neighbouring properties.

Throughout the life of the BESS, PEP will continue to consult with key stakeholders to review and update plans and procedures as required. PEP will also seek to form a working group with neighbours and the local Rural Fire Service to enhance local bushfire readiness.

Fire modelling outcomes

Halliwell Fire Research simulated a series of Miriam Vale BESS fire scenarios based on the site layout, equipment, topography and local weather conditions. The BESS will be more than 250m from the property boundary. The study found fumes from a fire would not spread more than 250m from the fire source and was unlikely to spread to adjoining properties. The study concluded a fire would not be significant enough to require large exclusion zones or neighbour evacuations. You can read more about this simulation on our website miriamvalebess.com.au/project-documents.

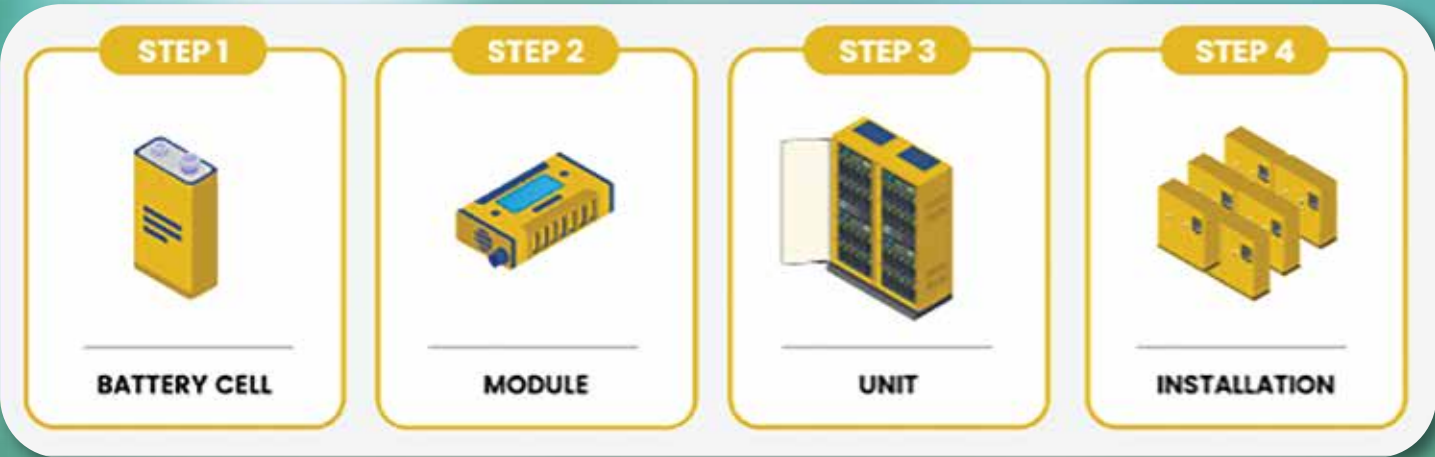
System components

The BESS will use grid-scale LFP (Lithium Iron Phosphate) batteries, one of the safest options for large-scale energy storage.

LFP batteries safely operate across a wider temperature range and store more energy per unit than other batteries. This makes them ideal for safely storing large amounts of electricity for quick release when the network needs it.

These LFP battery cells will be arranged inside modules, which will be stored in units, similar to cabinets. Several units will be installed in metal containers, like shipping containers.

The BMS will prepare the energy for release into the grid when it is needed, converting stored Direct Current (DC) energy into Alternating Current (AC) energy, and adjusting voltage levels.



Storing and supplying energy to the National Electricity Market

Energy is supplied to the grid through a bidding system in the National Electricity Market (NEM), which is managed by the Australian Energy Market Operator (AEMO). Generators, such as PEP, submit offers to supply or purchase energy for set periods and prices. AEMO uses these bids to balance supply and demand. The BESS Energy Management System (EMS) uses real-time data to determine when the grid needs more or less energy. The EMS then discharges stored energy to support the grid during peak demand or stores excess energy when supply exceeds demand.

Project Timeline



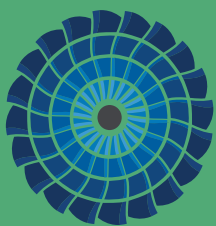
About Us

Private Energy Partners Australia (PEP) is 100% Australian founded, owned and operated. We are an affiliate enterprise of Quinbrook Infrastructure Partners (Quinbrook). 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. PEP is Quinbrook's dedicated development, delivery and operations service provider, specialising in renewable energy projects across Australia, the US and UK.

Need more information?

For more information about the BESS, or to receive regular updates about the project, contact PEP on 1800 975 039 or email info@miriamvalebess.com.au.

You can also find more detailed information, including FAQs, by scanning the QR code to visit miriamvalebess.com.au.



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