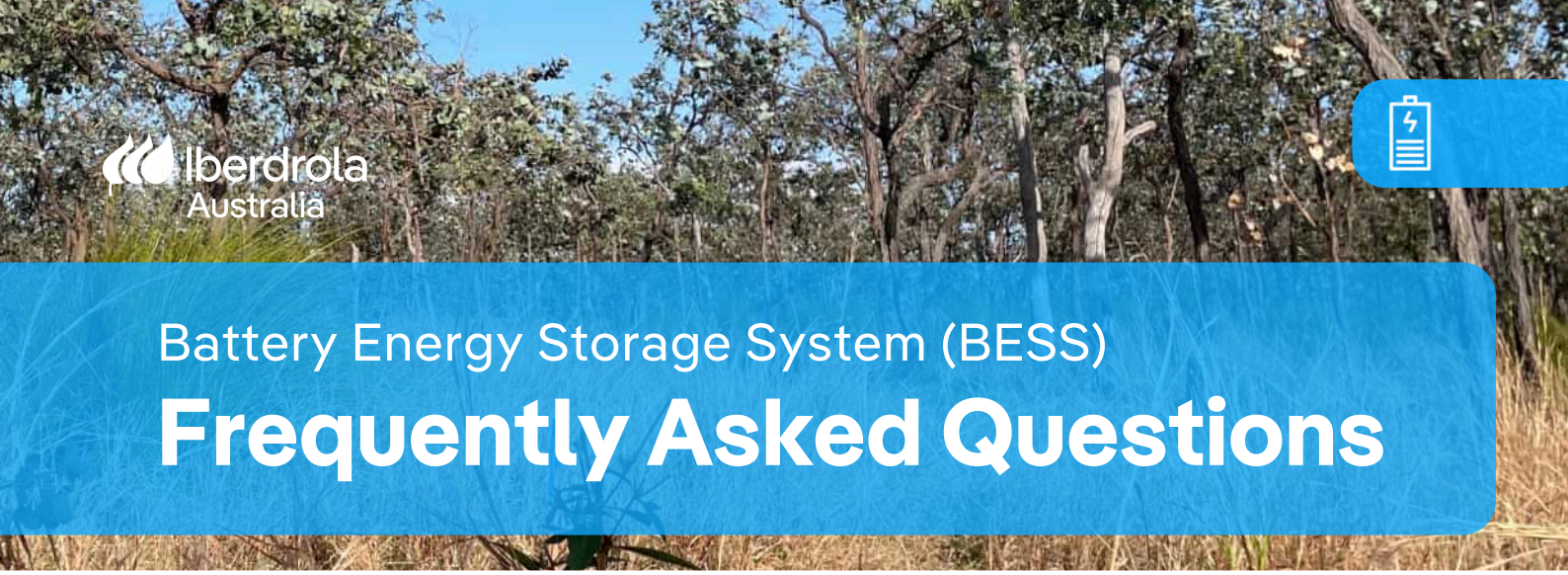


Iberdrola Australia

Battery Energy Storage System (BESS)

Frequently Asked Questions

What is a Battery Energy Storage System (BESS)?

A BESS (Battery Energy Storage System) connects to the national electricity grid and charges, stores, and releases energy when it's needed most.

It stores excess electricity when generation supply is high. An example is when there is surplus rooftop solar generation and demand is low, then the BESS discharges that energy back into the grid during peak demand periods.

This flexibility also helps to reduce price spikes in the electricity market, contributes to lower overall power costs for consumers and maintains grid stability, reducing the risk of blackouts.

The lifespan of a BESS is typically 20 years. At the end of its operational life, we take full responsibility for safely decommissioning the system and restoring the site to its original condition, reflecting our commitment to the environment.

What does a BESS look like?

BESS facilities look like modular systems that can be configured based on specific site and capacity requirements.

The technology is continuously evolving with BESS components becoming increasingly more efficient and compact in size. BESS facilities can be screened using vegetation to minimise any potential visual impacts.

Lake Bonney Battery, South Australia

How does a BESS connect to the grid?

BESS facilities connect to the grid via transmission connection to a nearby terminal station or substation. In this case it will connect into ElectraNet's Tungkillo Substation.

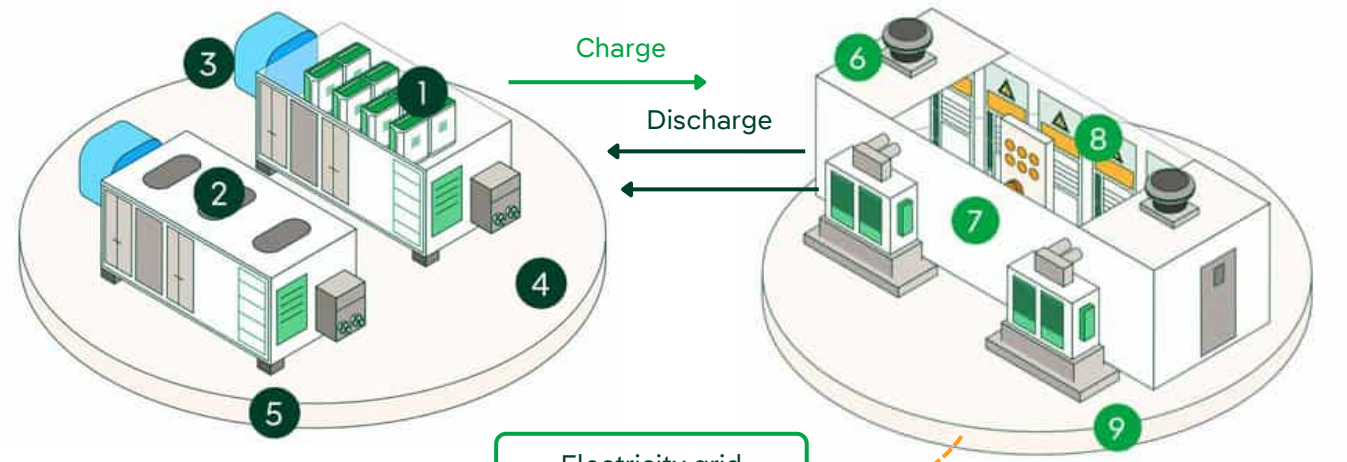
How does a BESS work?

Batteries

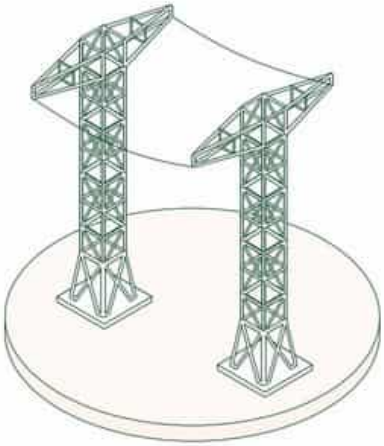
This is the main component of these systems, where energy is stored. They are made up of several elements.

Power Conversion System (PCS)

These are devices that convert the direct current (DC) stored in batteries to alternating current (AC) for use by the grid or end consumers.



Electricity grid



1. Battery modules
2. Container
3. Battery Management System
4. Air conditioning system
5. Fire extinguishing system
6. Air conditioning system
7. Control unit
8. Inverters
9. Transformers

What's involved in designing a BESS?

BESS facilities are designed with the following considerations:

- Proximity and connectivity to the grid
- Safety
- Relevant standards, guidelines and legislation
- Constructability around whether the design is practical to build
- Potential environmental and heritage impacts
- Operations and maintenance requirements
- Project costs.

How does a BESS operate?

A BESS operates (charge and/or discharge) based on network and market conditions. The key features of a BESS are:

- Operational 24 hours a day, seven days a week
- Largely operated remotely
- Construction takes on average 12-24 months
- Operational lifespan of around 20-25 years with opportunities for repowering

What is the difference between megawatts (MW) and megawatt-hours (MWh)?

Megawatts (MW) is the measurement of the rated power capacity of a BESS. This is the total possible instantaneous discharge capability starting from a fully charged state.

Megawatt-hours (MWh) is the measure of the storage duration of a BESS. This is the amount of time energy can be discharged at its power capacity before using up its energy capacity. For example, a BESS with 100 MW of power capacity and 400 MWh of usable energy capacity will have a storage duration of four hours.

How will the community benefit?

Iberdrola Australia sponsors community projects that aim to make a positive difference in the areas such as education, fire and police departments, sports clubs, art festivals and youth programs.

We aim to foster lasting relationships with community organisations by funding local initiatives and local not-for-profit organisations. Visit Community Funds and Sponsorships (https://www.iberdrola.com.au/for-communities/community-funds-and-sponsorships) for more information or to apply.

We'd love to keep you informed about project developments and upcoming community engagements. You can sign up to our project mailing list by emailing the Project Team at tungkillobess@iberdrola.com.au.

Why South Australia?

As renewable energy capacity increases within South Australia, investment is needed to maintain the reliability of the system. This presents a unique challenge—and an opportunity.

Why Tungkillo?

Tungkillo BESS is positioned at a site adjoining Tungkillo Substation, which is in a very strong grid location within South Australia's major interconnector corridors, with no additional land required for the transmission infrastructure.

What fire mitigation measures are in place for the project?

There are no foreseeable risks with the BESS during normal operations due to the many safeguards used in the design of the battery facility and the safety features of the equipment.

Iberdrola Australia will use batteries that have passed the highest level of safety certification and hazard mitigation (e.g. UL 9540A, NFPA 855) and are designed to be one of the safest battery storage products. In the unlikely scenario that a fire was to occur, this certification assures that the fire event would be contained. What that means is, it would not spread to the whole site—only a very limited number of equipment cells would be impacted.

Some of the control measures for fire proposed to be used by the Tungkillo BESS project include:

1. **Battery container:** is rated IP66, this rating classifies the sealing effectiveness provided by electrical enclosures. IP66 provides assurance that the enclosure could withstand high water pressure and is **UL 9540A certified** to ensure fires do not spread within the battery.
2. **Monitoring system:** each battery container has several monitoring systems to ensure 24/7 surveillance of issues. If one system fails, there are backup systems designed for robust management.
3. **Separation distances:** the battery has container separation distances to reduce the risk of battery fire spread between battery units.
4. **Bushfire Asset Protection Zones:** in accordance with our bushfire expert recommendations, Asset Protection Zones will be incorporated. These ensure that if a bushfire is in the local region, it has a low risk of reaching the battery.
5. **Fire self-suppression system:** in the event of a fire, **no water** is to be put on the battery. The units are designed with fire prevention and containment measures to limit fire spread and allow the system to safely burn out without needing to be put out externally with water.

While the design of the battery makes it difficult for water to come in contact with the enclosed battery cells, we proactively work with the communities and local emergency responders to keep them informed on the system, its design, and what to do in a fire.

Iberdrola Australia will brief the relevant fire and emergency services for the area and will continue to work closely with them, including detailed meetings at the facility and working together on our Emergency Response Plan. We will continuously review, test and update our Emergency Response Plan requirements and procedures ahead of industry standards. Part of this continual assessment will involve robust assessment of the Asset Protection Zone and integration of the Emergency Response Plan.

Local firefighters will liaise with our 24-hour operation centre to minimise risk.

How is the BESS site protected in the event of a bushfire?

Bushfire is a risk to any asset and Iberdrola Australia is acutely aware of the bushfire potential in regional South Australia. A Bushfire Risk Assessment is being prepared for the Tungkillo BESS project. This assessment considers the amount and type of vegetation and associated fuel loads.

The project will include any recommendations from the Bushfire Risk assessment to ensure the safety of the battery, the community and the environment.

What kind of workers do BESS facilities require?

There is a wide variety of employment opportunities created during BESS construction and operation. This includes site pre-work, civil and electrical works. Typical jobs created during construction and operation include:

- Surveyors
- Geologists
- Traffic controllers
- Civil labourers / supervisors / construction manager and WHS coordinators
- Site engineers
- BESS installers
- Electricians/fitters
- Electrical trades assistant/labourers/supervisors / construction manager
- Concrete Suppliers
- Accommodation providers
- Local pubs, hotels and food service providers
- Operational inspections and maintenance

What's involved in decommissioning?

As the battery operator, Iberdrola Australia is responsible for decommissioning the battery. The requirements for the decommissioning, such as rehabilitating the land, are detailed in the contracts with the landholders and in the planning approvals process.

The lifespan of a battery is currently 20 years. We expect many research and technological improvements in that time.

Lake Bonney Battery, South Australia

Will I be able to hear a BESS?

When operating, BESS facilities are required to meet strict noise requirements (put in place through the planning process) and comply with the relevant noise protocols and/or guidelines.

For BESS facilities, the main source of the sound is the cooling fans that regulate the operating temperature of the battery cells. The sound they make is similar to an air conditioning unit or a dull whirring noise. Noise from the BESS will vary from project to project, depending on location, ambient noise, distance, size, technology provider and attenuation.

As part of the planning approvals process, detailed noise studies are undertaken by specialist consultants who apply authorised environmental noise guidelines to measure noise levels during project development to ensure that noise generated will be within the applicable noise limits.

Lake Bonney Battery, South Australia

For more information

Iberdrola Australia's 2024 Sustainability Report focuses on the following key areas: our people, our planet, our communities including First Nations communities, customers, supply chain and our regulators. The 2024 Sustainability Report outlines specific initiatives and targets to boost our positive impacts, and how we are currently tracking against these targets.

Another very informative and useful source of knowledge is the Clean Energy Council. The Clean Energy Council has factsheets, reports and submissions to government that addresses many aspects of the renewable energy transition.

If you would like to contact someone from the proposed Tungkillo Battery Project Team, you can email tungkillobess@iberdrola.com.au or call 1800 917 372.

Contact Us

If you have any questions, feedback, local knowledge or suggestions, please reach out via the contact details below.

Visit our website:
www.iberdrola.com.au

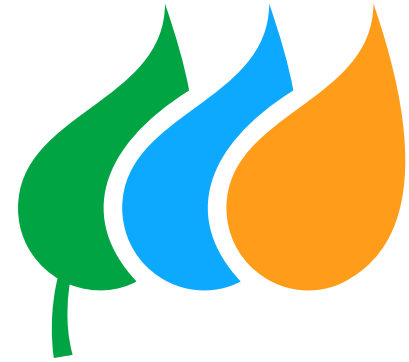
Email the Project Team:
tungkillobess@iberdrola.com.au

Call the Project Team:
1800 917 372

Acknowledgement of Country

Iberdrola Australia acknowledges the Traditional Owners, the Peramangk People, and their continuing values, culture and connection to land, waters and sky. We pay our respects to Elders past and present.


Bisley
WORKWEAR
Iberdrola
Australia



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