

DESIGNED FOR THE AUSTRALIAN LANDSCAPE

Fire risk and how we manage it.

AMPYR's Wimpole Battery is designed and assessed to protect the site, nearby properties, and the local environment in a fire event.

Few places in recent memory have been touched by fire like West Gippsland. Locally, we acknowledge the devastation of the Bunyip fire in March 2019, alongside others like it around the country. We understand the profound impact they leave on the landscape and the community, and a key focus for us lies in the management of bushfire risk during development and operation of the Wimpole Battery.

With careful design, accessible water storage and commitments to support regional emergency services, the Wimpole Battery is intended to serve West Gippsland in the event of a fire.

01 — HOW BUSHFIRE RISKS ARE ASSESSED

An independent Fire Hazard and Risk Assessment by a qualified external specialist, along with ongoing consultation with the Country Fire Authority (CFA), has shaped the site design and will inform future management plans that govern how the Wimpole Battery operates.

PRELIMINARY ASSESSMENTS

Bushfire risk to project infrastructure is measured by Bushfire Attack Level (BAL), which considers the heat that a building surface would experience in a worst-case fire. Our developments maintain a BAL-12.5 setback from surrounding vegetation to maintain a temperature during a worst-case fire of ~120°C, well below the 230°C threshold at which Lithium Iron Phosphate (LFP) batteries could be affected.

REGULATIONS AND STANDARDS

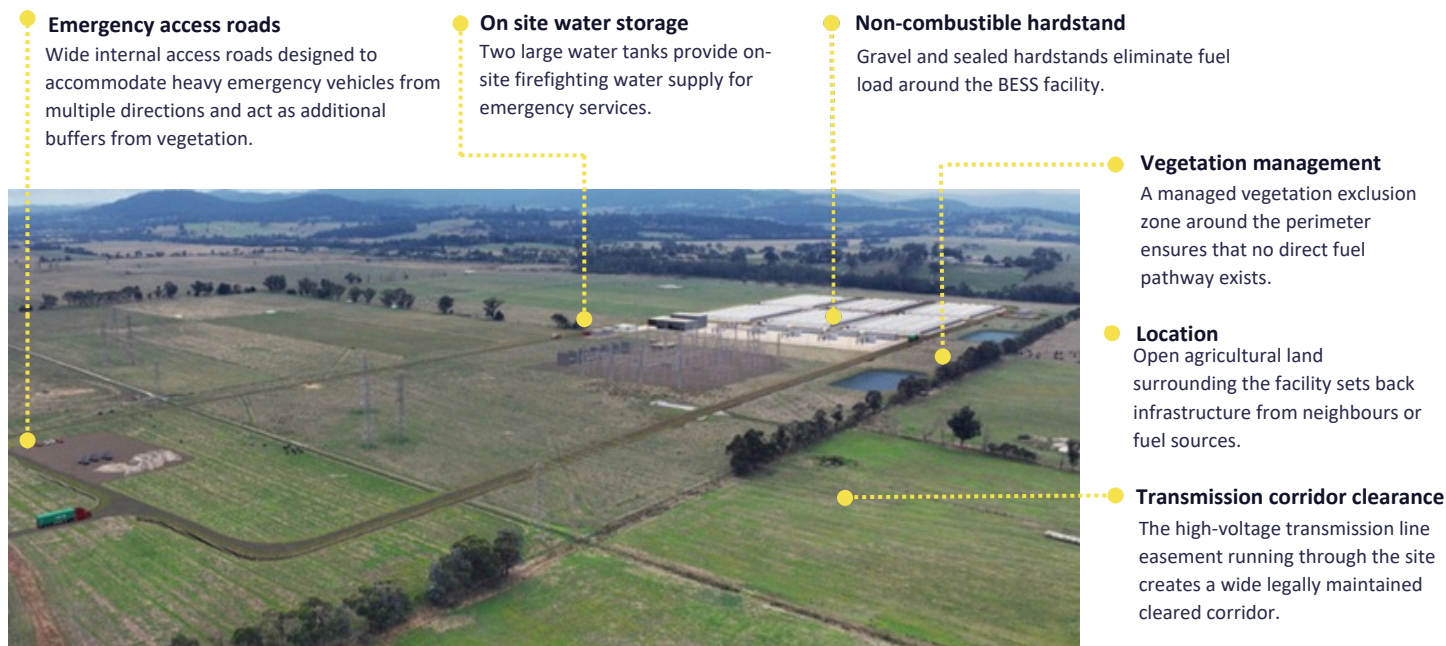
Prior to commencing construction, the project will need to demonstrate compliance with state and federal standards and requirements:

- ✓ **AS 3959** — Construction in bushfire-prone areas
- ✓ **CFA Victoria** — Renewable Energy Facility guidelines
- ✓ **AS 2419.1** — Fire hydrant installations
- ✓ **UL 9540** — Battery fire safety testing
- ✓ **Electricity Safety Act 1998** — Part 7
- ✓ **AS/NZS 5139** — BESS

BAL Rating	Enclosure surface temp.	Safe for our LFP batteries?
BAL-12.5	~120°C	Well below threshold
BAL-19	~170°C	Below threshold
BAL-29	~215°C	At edge of threshold
BAL-40	~255°C	Exceeds threshold

02 — SITE DESIGN MEASURES

The layout and design of the Wimpole Battery has been developed to reinforce existing fire barriers, be an accessible water source for emergency services during a bushfire event, and contain any fire within the project.



Wimpole Battery (digital artist rendering) south-east viewpoint

03 — CONTAINER DESIGNS FOR FIRE MITIGATION

Layered measures to consider fire risks start at the battery cells within the battery modules. What technology is used, how containers regulate temperatures and where containers are positioned within the project site all decrease fire risk.

1 Fire cannot spread between batteries

Battery groups and modules are separated by specific distances and ground materials, creating a grid of deliberate fire breaks. Even if one cell overheats, these barriers physically block the heat from reaching nearby cells.

2 System cools itself

Cells are kept cool by a liquid system running 24 hours a day. It predicts how hard the batteries will work and adjusts automatically, keeping every cell within 1°C of each other.

3 Technology selection

Unlike older types, Lithium Iron Phosphate (LFP) cells need to reach over 239°C before they can catch fire. That is nearly 100°C higher than consumer electronics.



4 Fire suppression system

Multiple sensors constantly monitor for smoke, gas and heat all at the same time. If a problem is detected, a built-in fire and smoke suppression system activates automatically and releases a suppressant directly onto the batteries. No one needs to be on site.

5 Automatic alert system

The battery units have an AI powered control system constantly watching the health of every battery. If it detects an issue, it automatically shuts the system down.

6 The cabinet is a protective shell

Between every group of battery cells there are specially engineered firebreak materials similar to a firebreak in a bushfire. Even if one cell overheats, these barriers physically block the heat from reaching the cells next to it, stopping any problem from spreading.

04 — THE SAFETY RECORD

In Australia, there have been two publicly recorded fire events involved large-scale batteries. Both were contained to a single enclosure. There has been no off-site harm at any Australian utility battery facility due to fire.

2021 **Victoria Big Battery** — coolant leak during commissioning. Contained to a single enclosure.

2023 **Bouldercombe, QLD** — electrical fault during commissioning. Contained to a single enclosure.

7.5 GW

Operating utility battery capacity across Australia, across more than 50 sites.

~50M

Individual LFP battery cells in service across the Australian fleet.

98%

Reduction in BESS failure rate 2018–2024 per the Electric Power Research Institute (EPRI).

05 — HELPING REGIONALLY, THINKING LOCALLY

In addition to on-site water storage and improved access for Emergency Services to the local area, the Wimpole Battery, if constructed, will contribute over \$500,000 to the Victorian CFA. This is intended to provide training, equipment or fund infrastructure to improve the regional capacity of Emergency Services.

AMPYR is committed to working with project neighbours to plan for the management of future fire events, in addition to the CFA, Traditional Owners and Cardia Shire Council.

TALK TO US

Questions, concerns or local insight?
We'd like to hear from you.

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