

# Fire risk and how we manage it.

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

Fire continues to shape the Southern Tablelands. For many people in this region, the 2019 Black Saturday Fires — including the Green Wattle Creek Fire which burned through around 278,000 hectares close to Bannaby — are not distant memories. Fire is a lived experience.

Managing bushfire risk is a fundamental design consideration of the Swallow Tail Battery's that will influence how the project operates in future. With careful design, accessible water storage, and commitments to support regional emergency services, the Swallow Tail Battery is intended to serve the Bannaby and Upper Lachlan community in the event of a fire.

## 01 — HOW BUSHFIRE RISKS ARE ASSESSED

An independent Bushfire Risk Assessment, alongside ongoing consultation with the NSW Rural Fire Service and Fire and Rescue NSW, has shaped the site design and will inform the management plans that govern how the Swallow Tail Battery is constructed and operated day to day.

### ASSET PROTECTION ZONE

Our bushfire assessment recommends a minimum Asset Protection Zone (APZ) of 10 m is established around the battery and between fire fuel.

These setbacks ensure that the project effectively addresses risks from radiant heat and maintains a defensible space for firefighting and emergency response.

### 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
- ✓ **NSW RFS Planning for bushfire protection 2019** —
- ✓ **Renewable Energy Facility guidelines AS 2419.1** —
- ✓ **Fire hydrant installations**
- ✓ **UL 9540** — Battery fire safety testing
- ✓ **NSW Environmental Planning and**
- ✓ **Assessment Act 1979**
- ✓ **AS/NZS 5139** — BESS installation safety

| Vegetation Formation                                                | Upslope and Flat | >0-5 degree downslope | >5-10 degree downslope | >10-15 degree downslope | >15-20 degree downslope |
|---------------------------------------------------------------------|------------------|-----------------------|------------------------|-------------------------|-------------------------|
| Distance (m) from the asset to the predominant vegetation formation |                  |                       |                        |                         |                         |
| Forest (wet and dry sclerophyll)                                    | 20               | 25                    | 31                     | 39                      | 48                      |
| Grassy Woodland                                                     | 11               | 13                    | 17                     | 21                      | 27                      |
| Grassland                                                           | 10               | 11                    | 12                     | 14                      | 16                      |

## 02 — SITE DESIGN MEASURES

Every design decision for the Swallow Tail Battery has been made with one question in mind: what happens if a fire comes? The site layout, roads, water storage, and vegetation management all work together — not just to protect the facility, but to support the emergency services who protect the broader region.



**Vegetation management**  
The facility has been sited to take advantage of natural topography as an additional layer of protection, with lower-risk slope classification for fire spread.

**On site water storage**  
The site includes dedicated fire retention and bioretention ponds as part of the facility design. These provide an additional on-site water resource.

**Non-combustible hardstand**  
Gravel and sealed hardstands eliminate fuel load around the BESS facility, reducing the risk of fire reaching critical infrastructure.

**Location**  
The facility sits within open agricultural land near Bannaby, providing natural separation from neighbours and surrounding vegetation. The site was selected in part because of the space it provides to manage fire risk responsibly.

**Emergency access roads**  
Wide internal access roads are designed to carry heavy emergency vehicles from multiple directions. All roads meet NSW Rural Fire Service Fire Trail Standards.

**Retained vegetation as a fire buffer**  
The native vegetation in this corridor is being retained and maintained with fire buffers, so that fire cannot spread from the vegetation to the batteries, or from the batteries to the vegetation.

Swallow tail Battery - digital artist rendering

### YOUR CONTACT

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Final assessments for the Project will be published on the AMPYR website before Development Application submission.

Visit the Swallow Tail page at [ampyr.com.au](http://ampyr.com.au)

### 03 — CONTAINER DESIGNS FOR FIRE MITIGATION

Layered measures to address fire risk start at the battery cells themselves. What technology is used, how containers regulate temperature, and where containers are positioned within the site all work together to reduce fire risk from the inside out.

#### 1 Fire cannot spread between batteries

Battery containers are comprised of battery racks, which are comprised of battery cells. Within each container, there are layers of prevention and insulation between each level. Further, each container has spacing requirements that must be met.

#### 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

Large-scale battery storage is an established and growing part of Australia's energy system. There is now real operating experience to draw on — and that record matters.

In Australia, there have been two publicly recorded fire events involving 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

AMPYR is committed to working alongside the NSW Rural Fire Service, Fire and Rescue NSW, neighbouring landowners, and the broader Bannaby community to plan for fire — before, during, and after construction.

A Bushfire Emergency Management and Operations Plan will be developed in consultation with NSW RFS and local emergency services before construction begins. Copies will be held on site and at the local RFS Brigade office. Regular site familiarisation sessions will ensure local volunteer firefighters are always up to date as the project develops.

The Swallow Tail Battery's on-site water storage and all-weather access roads are available to emergency services at any time — not just for the protection of the facility, but as a resource for the wider local area.

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