AMPYR
FIRE RISK MANAGEMENT

COMMUNITY FACT SHEET

Managing fire risk at Rutherglen Battery

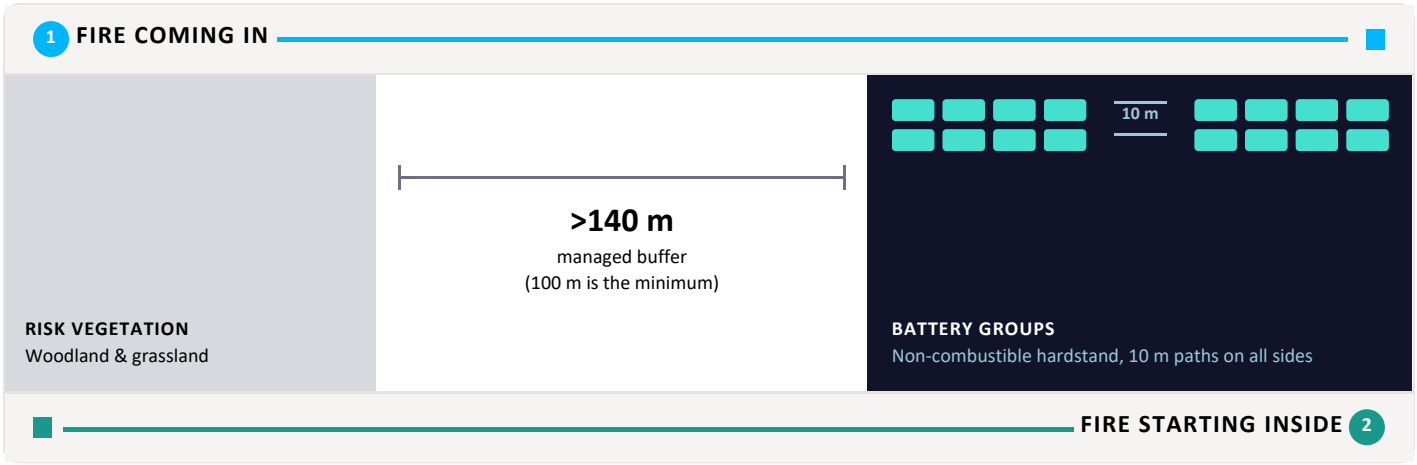
Two fire scenarios, two sets of measures.

The Rutherglen Battery is planned and designed for two quite different fire situations. They are separate problems with separate answers, and the site is built to handle both.

1. **Fire coming in** (“fire-in”)
   A bushfire in the surrounding landscape encroaches on the site, creating a threat to the battery.

2. **Fire starting inside** (“fire-out”)
   A fault in a single battery unit starts a fire that must not spread through the site — and must never start a bushfire.

Indicative render — Rutherglen Battery, with the Powerlink transmission corridor and switchyard to the west.



Scenario 1 is managed by:

Buffer distance, programmed vegetation maintenance, non-combustible ground, over 400 kL of water for the Rural Fire Service, and funding to build local response capacity.

Scenario 2 is managed by:

LFP chemistry, testing and maintenance schedules, in-built detection with automatic shutdown, in-container sprinklers, 10 m separation and diesel-driven back-up pumps.

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TALK TO US

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

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

Scan the QR code or visit the Rutherglen page at ampyr.com.au

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Managing fire risk at Rutherglen BESS

1 Keeping a bushfire away from the battery

This is the more likely of the two events, and the answer is distance, cleared ground and water. The same measures also make the site useful to the Rural Fire Service during a fire anywhere nearby.

PREVENTION — DISTANCE AND CLEARED GROUND

More than 140 m of buffer

Managed separation between risk vegetation and the battery. The regulatory minimum is 100 m; our minimum at Rutherglen is over 140 m. AS 3959 treats the result as a “low threat” landscape.

Programmed vegetation maintenance

Grass and mid-storey kept low and canopy thinned on a set schedule, carried out by the battery operator in agreement with adjoining landowners and the Rural Fire Service.

Non-combustible ground

Cleared, sealed or gravel hardstand with impervious foundations and no flammable materials anywhere around the units.

Location and existing breaks

Open plain and undulating farmland set the infrastructure back from neighbours. The 275 kV Powerlink corridor and switchyard add a further maintained, cleared area.

WHAT THE BUSHFIRE ASSESSMENT FOUND

At the buffer distance, radiant heat from a worst-case bushfire reaches about 0.79 kW/m² from the central and southern woodland (FDI 53) and **0.24 kW/m²** from the surrounding grasslands (FDI 63) — far below the **4.7 kW/m²** level regarded as the maximum to which firefighters should be exposed.

These figures describe bushfire radiant heat and firefighter safety. They are not a measure of battery fire risk — that is scenario two, overleaf.

SUPPORT — A RESOURCE FOR THE RURAL FIRE SERVICE

Over 400 kL of water on site

Held in dedicated firewater tanks and topped up by the site’s detention and bio-retention ponds, with supply points at the site buildings. Available to emergency services fighting fires beyond our boundary.

Diesel-driven back-up pumps

Firefighting pumps that run independently of the grid, so water pressure is available even if power to the site is lost.

Funding and training for RFSQ

$160,000 over five years to build local response capacity and specialised training, plus familiarisation visits with RFSQ and QFES. Site staff are trained in initial firefighting.

Emergency access

Fire trails and access roads run to, around and between the battery groups (minimum 6 m cleared, 4 m trafficable), with 10 m paths on all sides of every unit.

HOW BOTH SCENARIOS WERE ASSESSED

Fire Safety Study & Risk Assessment
Arriscar Pty Ltd, certified professional engineer — Queensland State Code 27.

Bushfire Mitigation Report
Eldon Bottcher Architect Pty Ltd — AS 3959 and Queensland bushfire planning policy.

Hazard & Risk Assessment
Queensland State Code 21 — hazardous chemical facilities.

Requirements the project must meet:

- AS 3959 — Construction in bushfire-prone areas
- NFPA 855 — Stationary energy storage
- AS/NZS 5139 — Battery energy storage
- QLD State Code 27 — Renewable energy facilities
- QLD State Code 21 — Hazardous chemical facilities
- AS ISO 31000 — Risk management
- AS 2067 — Substations over 1 kV
- AS 2419.1 — Fire hydrant installations

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2 Containing a battery fire to a single unit

A fire inside a battery unit is now an incredibly rare event. The design assumes it can still happen, and is built so that it stops in the unit it started in — and never becomes a bushfire.

PREVENT

Lithium iron phosphate (LFP) cells

The safest chemistry in utility-scale battery storage, with a far higher thermal-runaway onset temperature than other lithium-ion chemistries.

Active thermal management

Each container has its own liquid cooling — chiller and cooling plates — run automatically by the Battery Management System to hold cells within safe temperatures.

Testing and maintenance regime

Rigorous scheduled testing and maintenance, with detailed reporting on a monthly, quarterly and annual basis.

DETECT AND SHUT DOWN

In-built detection

Heat, smoke and combustible-gas detectors inside every contained battery unit.

Automatic shutdown and alarm

Detection trips the unit automatically and raises alarms with visual indicators. The BMS also trips on faults such as short circuits or overheating.

Monitored 24/7

The site is watched around the clock via SCADA, including remotely after hours.

CONTAIN

Sprinklers inside the container

Sprinklers activate once a heat source or minor fire is detected, preventing heat build-up before it can spread between cells. Automatic aerosol suppression backs them up.

The container as a shell

Steel containers built to hold a fire in. In testing and in real incidents the walls did not fail during a 90-minute fire, and explosion-venting panels release pressure safely.

10 m separation

Groups of battery containers are separated by 10 m, and the access paths on all sides act as firebreaks between units.

IF A BATTERY UNIT DOES CATCH FIRE

The approach is not to fight it. The fire is contained to the single unit it started in and allowed to burn itself out — typically over about 24 hours — while all firewater and effluent is captured on site. Separation distances, the steel container and the non-combustible hardstand are what stop it spreading to the rest of the battery, and to the landscape beyond.

~24 hrs
to burn out, contained, with effluent captured

THE SAFETY RECORD

0	High or Extreme risk events — every fire scenario rated Low to Moderate in the independent risk assessment.
98%	Reduction in BESS failure rate 2018–2024 per the Electric Power Research Institute (EPRI).
2021	Victorian Big Battery — contained to the originating unit and one neighbour, with no off-site harm.

An Operational Emergency Management Plan and defined incident response procedures ensure rapid detection, clear communication and co-ordinated action with the Queensland Fire Department and local emergency services. AMPYR will keep working with neighbours, Traditional Owners and Gladstone Regional Council to plan for future fire events.

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