

Utility-Scale Energy Storage

Energy Storage Anywhere, Anytime

Mobile, Scalable and Reliable Clean Energy Storage

Australian Flow Batteries (AFB) presents the Vanadium Redox Flow Battery (VRFB), a 1 MW, 5 MWh battery that is a cutting-edge energy storage solution. Designed for efficient, long-term energy storage, this system is ideal for applications requiring high-capacity, reliable power.

KEY FEATURES



Utility Scale Power

Engineered for utility-scale applications, offering high-capacity storage of up to 5 MWh with seamless scalability. Designed for long-duration energy storage, it efficiently supports grid stabilisation, renewable energy integration and peak load management.



Scalable Configuration

The modular design ensures flexibility for scaling to larger capacities. Designed with 20 cylindrical electrolyte tanks (each 16 KL) and 80 stack units. Optimised for efficiency and redundancy.



Durable Design

The robust architecture guarantees reliability and minimal degradation over the extended lifespans. Tanks are reinforced with stainless steel stiffeners. RCC underground pits are included for enhanced safety and load management.



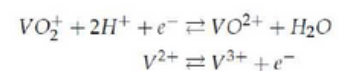
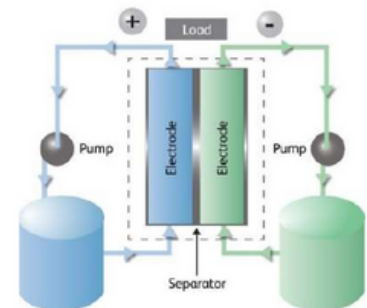
Renewable Integration

Compatible with renewable energy systems (solar/wind) and grid applications. Reliable plumbing with CPVC/PVC for smooth electrolyte circulation.

TECHNOLOGY

Australian Flow Batteries VRFB is based on vanadium redox chemistry. VRFBs have the following advantages:

- Tolerate fluctuating power supplies.
- Maintain 20,000+ charge/discharge cycles at maximum rates.
- Do not over-charge or over-discharge.
- Operates at ambient temperatures between -5°C to 50°C without heating or cooling.
- Electrolyte used in VRFB is non-flammable with a low-toxicity.
- A 20-year service life, with no degradation.
- More sustainable to produce, environmentally friendly and fully recyclable.



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Model	S1	S2
Discharge Power (MW)	1	2
Output Capacity (MWh)	5	10
DC Voltage Range (VDC)	760 - 1160	760 - 1160
Output Voltage (VAC)¹	415, 3-Ph	415, 3-Ph
Charge Power (MW)	1	2
Charging Mode CC (A)/CV (V)	1000/1160	2000/1160
Energy Block	0.5 MWh/16 KLTanks/20 Nos	1 MWh/32 KL Tank/20 Nos
Power Block	12.5 kW Stacks/80 Nos	12.5 kW Stacks/160 Nos
Battery Footprint²	28 m x 5.4 m	33 m x 7 m
Footprint Including Building	35 m x 12 m	40 m x 15 m
DOD	100%	
Cycle Life	Unlimited	
DC-DC Efficiency	70%	
Ambient Temperature³	-5 deg C – 50 deg C	
BMS/EMS	Modbus TCP/IP	

The above building blocks can be AC coupled to build >100 MWh systems.

Note:

- 1.1 Other voltage options available such as 480V, 3 Ph
- 2.2 >100 MWh per acre.
- 3.3 Wider Temperature Range can be managed by additional cooling/insulation/heating

