

1. Performance Metrics of Various Battery Chemistry

Feature	Zenaji LTO	Lithium-Ion (NiMh)	Lithium Iron Phosphate (LFP)	Solid-State	Vanadium Flow	Aluminium-Air	Sodium-Ion	Graphene
Cycle Life	22,000+	1,500	3,000 claimed but 7,000 cycles on effective reduced DOD	5,000	500 - Unknown	Single-Use	3,000	3,000
Charging Time	<10 mins	1-4 hours	1-2 hrs	<30 mins	~1 hr	N/A	~1 hr	<20 mins
Actual Lifespan Cycle Capability	60,000+	1,500	5,475 based on overfilling cell numbers and reduced DOD	4,000	500	Single-Use	2,000	2,000
Maximum Lifespan Cycle (Max DoD)	60,000	1,000	2,500	1,000	500	Single-Use	1,000	1,500
Recyclability	High	Moderate	Moderate	Low	Good	Low	High	Moderate
Operating Temperature Range	-40°C to 60°C	0°C to 40°C	-20°C to 50°C With external heater/coolers	-10°C to 60°C	5°C to 50°C	0°C to 40°C	0°C to 50°C	-20°C to 50°C
Risk of Thermal Runaway	None	Moderate	Low	Very Low	None	None	Moderate	Moderate
Environmental Impact	Low	Moderate	Low	Moderate	Low	High	Low	Moderate
Safety	Very High	Moderate	High	Very High	Very High	High	High	High
Maintenance	Low	Moderate	Low	Moderate	High	Low	Low	Moderate
Energy Density	110 Wh/kg	150-250 Wh/kg	90-120 Wh/kg	300-500 Wh/kg	20-40 Wh/kg	~400 Wh/kg	~100 Wh/kg	200-500 Wh/kg
Scalability	High	High	High	Moderate	High	Low	Moderate	High
Performance with AI	Supported	Limited	Moderate	Advanced	Limited	N/A	Moderate	Advanced
Max Continuous Power	6C	1C	0.5C	0.4C	1C	1C	1C	5C
Cycles Per Day	Up to 20	1	1	1	1	Single-Use	1	1
Requires Replacement	After 60 yrs	After 7 -10 yrs	After 7 -15 yrs	After 10 yrs	N/A	Immediate Single-Use	After 10 yrs	After 15 yrs
100% Australian Company	Yes	No	No	No	No	No	No	No
Weight	500 kg	300 kg	350 kg	350 kg	1,000 kg	700 kg	550 kg	380 kg