



eTower Battery Guarantee

Released September 2021

The eTower lithium iron phosphate batteries are supported by a limited product guarantee, which is backed by Freedom Won (Pty) Ltd.

The eTower consists of e5000 battery modules, each with an energy capacity when new of at least 5kWh and 100Ah at a nominal voltage of 52V.

Subject to the provisions in this document, Freedom Won guarantees that the service life of an eTower e5000 battery will achieve at least a 10-year service life or deliver at least 4 000 charge-discharge cycles, whichever event should first occur.

The battery is defined as satisfactorily achieving this service duration or duty if it is still able to produce 60% or more of the model's stated new capacity in kWh from a complete discharge. The discharge test of an individual battery shall be done at a current equal to or less than 20% of the Ah rating, i.e.

➤ Amperes during discharge test = $0.20 \times 100\text{Ah} = 20\text{Amps}$

The integrated battery management system (BMS) can calculate and record the aggregate number of cycles that have been completed by the battery, where one complete cycle in terms of this warranty is a discharge from 100% State of Charge (SoC) to 30% SoC – which is equivalent to 70% Depth of Discharge (DoD) – followed by a charge again to 100% SoC. Discharges deeper than 70% DoD and less than 70% DoD are also counted into the total number of warranty cycles on a pro rata basis.

Each eTower e5000 battery is preconfigured to prevent ordinary discharge below 90% DoD by commanding the connected inverter over the applicable communication interface to stop discharging. 100% DoD is allowed when the discharge from 90% to 100% DoD is only for the purposes of supplying the standby power draw to the inverter when there is no AC input available.

The eTower should not be kept and/or operated in a location that regularly experiences extended periods of ambient temperatures above 30 degrees Celsius or below zero degrees Celsius. The extreme ambient operating range is -20 to +50 degrees Celsius. In terms of the warranty the battery may not be charged below 0°C although there is no restriction for discharge below 0° down to -20°C. The following temperature related operation will void the warranty:

- If the battery is operated in ambient temperatures below -20°C
- If the battery is operated in ambient temperatures above 45°C

The eTower should also be installed indoors away from direct sunlight, precipitation, moisture, and sea mist.

If the eTower is installed in a small room with inverters and charge controllers it may be necessary to install an extraction fan or air conditioner to extract the heat from the inverters and charge controllers. Similarly, if the system is installed in a container the container must be out of direct sunlight and fitted with insulation cladding and extraction fans or air conditioners. Where possible the ambient temperature must be maintained between 20°C to 25°C.



Should an eTower be found unable to produce 60% of its 'as new capacity' in kWh prior to the 10-year service life, or 4 000 cycles being achieved Freedom Won undertakes to service the battery to ensure that it thereafter again meets this performance objective. Freedom Won may however decide at its sole discretion to replace the battery if a repair is considered by Freedom Won to be uneconomical. Should a replacement battery be required, Freedom Won will cover a percentage of the cost of the replacement based on a fair use formula as follows:

- Battery age 0 to 5 years – Freedom Won will cover the full cost of the battery replacement
- Battery age 5 to 6 years – Freedom Won will cover 50% of the cost of the battery replacement
- Battery age 6 to 7 years – Freedom Won will cover 40% of the cost of the battery replacement
- Battery age 7 to 8 years – Freedom Won will cover 30% of the cost of the battery replacement
- Battery age 8 to 9 years – Freedom Won will cover 20% of the cost of the battery replacement
- Battery age 9 to 10 years – Freedom Won will cover 10% of the cost of the battery replacement

The balance of the replacement cost must be paid before by the owner or reseller before the replacement battery is provided. The deemed replacement cost for a warranty replacement shall be the selling price at the Freedom Won Tier 0 level.

If the same model battery is not available at the time of the warranty claim Freedom Won undertakes to provide a suitable alternative solution.

For the purposes of the performance warranty assessment, the capacity of the battery will be confirmed using kWh readings taken from an external kWh meter connected on the DC output cables of the battery. The discharge test shall be conducted at 0,2C from 100% SoC. The battery must be transported to Freedom Won or an authorised distributor to be assessed and tested in accordance with this warranty. The cost of removal, packaging and shipping shall not be covered by the warranty, nor shall the cost of re-installation.

A suspected underperforming battery must be received by Freedom Won for assessment before the warranty period has elapsed or the cycles are exceeded.

Every eTower battery is fitted with a tamper seal on the cover. If this seal is damaged or compromised in any way or there is other evidence of tampering or abuse the guarantee becomes void.

As well as the above performance related warranty, Freedom Won will replace under warranty any component that fails or is defective during the 10-year warranty at no charge provided that such failure is not related to improper use or operation of the battery.

The exterior paint coating on the eTower is only guaranteed so far as it has been properly applied and a claim must be supported by evidence of defective materials or application – damage to the coating caused by impact or scuffing is not covered in this guarantee.

The warranty is only valid and applicable if the eTower was installed according to the requirements and instructions laid out in the eTower manual. The warranty is also only valid if the eTower and all associated charges such as delivery costs where applicable, are fully paid for by the reseller or installer, or if necessary, directly by the owner within 60 days of the final amount becoming due.

The guarantee period begins at the date of the final Freedom Won invoice, which shall include reference to the serial number of the battery as depicted on the tamper seal.



eTower batteries that are outside of the warranty period will still receive full support from Freedom Won for 15 years after the date of initial purchase from Freedom Won.