



Altech Batteries
Limited

ASX ANNOUNCEMENT AND MEDIA RELEASE

1 October 2024

ALTECH – CERENERGY® FIRST 60 KWH PROTOTYPE ONLINE AND ACHIEVING GREAT RESULTS

Highlights

- CERENERGY® 60 KWh prototype completed and operating
- Undergoing daily testing with battery test station at Dresden
- Outperformed early expectations
- Exhibiting exceptional efficiency and robust performance
- Maintains safe, optimal operating temperatures
- Ongoing testing providing critical data for off-take parties
- Strong commercial potential for large-scale production
- Separate individual cell testing conducted
- Demonstrates performance to published specifications

Altech Batteries Limited (ASX: ATC, FRA: A3Y) is pleased to announce that its first CERENERGY® ABS60 battery prototype is online and operating successfully. The completed battery unit has passed all physical tests with flying colours. The prototype was installed at Altech's joint venture partner Fraunhofer IKTS' test laboratory in Dresden, Germany, and integrated into a specially designed battery test station. This setup enables continuous daily charging and discharging cycles to assess the battery's efficiency, stability, and overall performance under real-world conditions.



Photo: Ms Daniela Herold (Fraunhofer IKTS Battery Development Leader) taking CERENERGY® ABS60 through its paces

Altech's CEO and MD Iggy Tan stated *"We are extremely pleased that the first CERENERGY® 60kWh battery prototype is now up and running and operating better than expected, reconfirming our confidence in the sodium-chloride solid-state battery technology developed by the world-leading Fraunhofer Institute in Germany. Using common table salt technology and without the requirement for lithium, copper, cobalt, graphite and manganese, the CERENERGY® battery can operate in a wide range of temperatures and has a life of 15 years, around double that of lithium-ion batteries.*

The prototype can now be demonstrated under real-world conditions, providing critical data for off-take parties. This will be invaluable as Altech pushes forward with sales and finance to construct the first 120MWh plant. With the first Letter of Intent for 30MWh of offtake with Schwarze Pumpe Industrial Park recently announced, we envisage that having the CERENERGY® 60kWh battery prototype up and running and exceeding expectations, will further assist in the offtake process".

Initial results from the testing are extremely promising. The ABS60 battery has outperformed early expectations, exhibiting exceptional efficiency and robust performance across all key metrics. Notably, the battery has maintained excellent thermal stability, a crucial factor in high-capacity energy storage systems. Throughout rigorous testing, it has operated within safe temperature limits, with no signs of overheating. This highlights the effectiveness of the battery's thermal management system, which plays a vital role in enhancing both the safety and longevity of the battery. These early findings confirm the battery's design integrity and bolster confidence in its commercial viability. The ABS60 prototype is expected to continue undergoing further testing and refinement, providing critical data for potential off-take parties.

The success of this prototype positions Altech Batteries at the forefront of advanced battery technology, offering a reliable and efficient energy storage solution.

Comment from Mr Uwe Ahrens,
Managing Director of Altech Batteries GmbH

You Tube <https://youtu.be/BLrh0bHutlclink>



Individual Cell Testing

An individual cell testing program has also been conducted by the Fraunhofer team at Hermsdorf, Germany. Separate battery cells underwent extensive testing, highlighting their performance and stability. A total of 497 individual battery cells were produced. The cells were tested at an operational temperature of 300°C. Key results from over 500 cycles demonstrated stable performance, including a consistent discharge capacity of 80 Ah and an efficiency of up to 91%. The discharge energy and capacity remained stable without any indication of degradation occurring across the 500 cycles, and the average discharge voltage held steady throughout the tests.

Discharge and overcharge stress and abuse tests were conducted without any cell failures, confirming the cells' durability. These findings demonstrate the cells' potential for long-term stability, high energy capacity, and reliability in high-temperature applications.

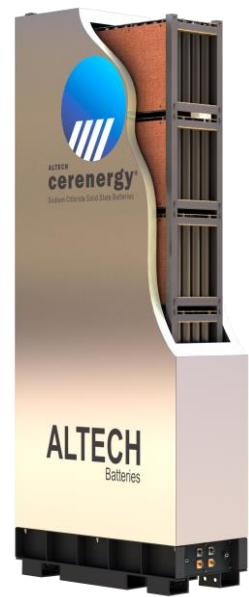
For personal use only



Photo: Prototype 60 kWh battery being assembled and tested at Fraunhofer IKTS laboratory

About the ABS60 Battery Pack

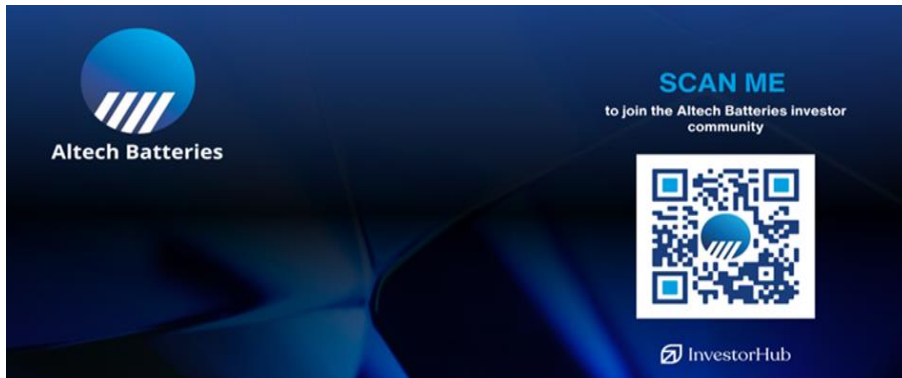
The ABS60 CERENERGY® battery pack is a high-performance energy storage system designed for demanding applications. It has a total capacity of 60kWh. The battery pack is composed of 240 CERENERGY® cells, each rated at 2.58V. These cells are organized in 4 rows, each comprising 12 cells, and stacked 5 modules high. The dimensional specifications of the battery packs are 2.6 meters in height, 0.4 meters in length, and 1.0 meter in width. Ensuring adherence to the Ingress Protection (IP) 65 standard, the packs are designed to be dust and weatherproof, reflecting high levels of sealing effectiveness for electrical enclosures. Each cell is constructed with solid electrolyte (ceramic tube) technology, offering enhanced safety and thermal stability, even at high operating temperatures of up to 300°C. The pack's cells are rated at 100 Ah, with an impressive efficiency of up to 91%. Designed for durability, the battery can withstand over-discharge conditions without failure, making it a reliable solution for long-term, high-temperature operations. The ABS60 CERENERGY® battery is ideal for applications requiring consistent performance and reliability in challenging environments.



Authorised by: Iggy Tan (Managing Director)

Altech Batteries Interactive Investor Hub

Altech's interactive Investor Hub is a dedicated channel where management interacts regularly with shareholders and investors who wish to stay up-to-date and to connect with the Altech Batteries leadership team. Sign on at our Investor Hub <https://investorhub.altechgroup.com> or alternatively, scan the QR code below.



– end –

For more information, please contact:

Corporate

Iggy Tan

Managing Director
Altech Batteries Limited
Tel: +61 8 6168 1555
Email: info@altechgroup.com

Martin Stein

CFO & Company Secretary
Altech Batteries Limited
Tel: +61 8 6168 1555
Email: info@altechgroup.com

About Altech Batteries Ltd (ASX:ATC) (FRA:A3Y)

CERENERGY® Batteries Project

Altech Batteries Ltd is a specialty battery technology company that has a joint venture agreement with world leading German government battery institute Fraunhofer IKTS (“Fraunhofer”) to commercialise the revolutionary CERENERGY® Sodium Chloride Solid State (SCSS) Battery. CERENERGY® batteries are the game-changing alternative to lithium-ion batteries. CERENERGY® batteries are fire and explosion-proof; have a life span of more than 15 years and operate in extreme cold and desert climates. The battery technology uses table salt and is lithium-free; cobalt-free; graphite-free; and copper-free, eliminating exposure to critical metal price rises and supply chain concerns.

The joint venture is commercialising its CERENERGY® battery, with plans to construct a 120 MWh production facility on Altech’s land in Saxony, Germany. The facility intends to produce CERENERGY® battery modules to provide grid storage solutions to the market.



Silumina Anodes™ Battery Materials Project

Altech Batteries has licenced its proprietary high purity alumina coating technology to 75% owned subsidiary Altech Industries Germany GmbH (AIG), which has finalised a Definitive Feasibility Study to commercialise an 8,000tpa silicon alumina coating plant in the state of Saxony, Germany to supply its Silumina Anodes™ product to the burgeoning European electric vehicle market.

This Company’s game changing technology incorporates high-capacity silicon into lithium-ion batteries. Through in house R&D, the Company has cracked the “silicon code” and successfully achieved a 30% higher energy battery with improved cyclability or battery life. Higher density batteries result in smaller, lighter batteries and substantially less greenhouse gases, and is the future for the EV market. The Company’s proprietary silicon product is registered as Silumina Anodes™.

The Company is in the race to get its patented technology to market, and recently announced the results of a Definitive Feasibility Study for the construction of a 8,000tpa Silumina Anodes™ material plant at AIG’s 14-hectare industrial site within the Schwarze Pumpe Industrial Park in Saxony, Germany. The European silicon feedstock supply partner for this plant will be Ferroglobe. The project has also received green accreditation from the independent Norwegian Centre of International Climate and Environmental Research (CICERO). To support the development, AIG has commenced construction of a pilot plant adjacent to the proposed project site to allow the qualification process for its Silumina Anodes™ product. AIG has executed NDAs with German and North American automakers and battery material supply chain companies.



For personal use only

