ASX ANNOUNCEMENT AND MEDIA RELEASE

Altech Batteries Limited

9 May 2023

ALTECH – TWO 60 KWh BATTERY PACK PROTOTYPES IN PRODUCTION

Highlights

- Final market product prototype under fabrication - 60 KWh (ABS60) battery pack
- Produced at the Fraunhofer IKTS facility in Hermsdorf, Germany
- 60 KWh battery pack design launched on 7 November 2022
- Extensive cycling simulations to evaluate the temperature profile
- Design freeze for prototype fabrication
- Prototypes for customer testing and qualification process

Altech Batteries Limited (ASX: ATC, FRA: A3Y) is pleased to announce that two prototypes of the 60 KWh (ABS60) battery pack are currently being produced and fabricated at the Fraunhofer IKTS facility in Hermsdorf, Germany. Once completed, the battery packs will undergo cycling testing under extreme conditions, and they will be available for testing at customer premises.

The design for the CERENERGY® Sodium Chloride Solid State (SCSS) 60 KWh battery pack (ABS60), destined for the renewable energy and grid storage markets, was launched by Altech and its joint venture partner Fraunhofer, on 7 November 2022. This battery pack boasts a rated operating voltage of 600 volts at 100 amp (A).

Following the launch, the joint venture carried out extensive cycling simulations to evaluate the temperature profile of the internal components of the battery. Typically, the charging process involves a net endothermic (heat energy absorption) reaction, whereas the discharge process leads to an exothermic (heat energy release) reaction. The simulations indicate that the battery can undergo charge and discharge cycling while maintaining stable internal temperatures without overheating, even under extreme conditions such as a desert environment, where the ambient temperature was recorded at 60°C. No instances of overheating were reported during these simulations.

Based on the results of these simulations, the specifications for the 60 KWh battery packs have been finalised, and orders for materials required for the production of two prototype batteries have been placed. This process involves the manufacture of 480 ceramic solid-state cells, along with the production and procurement of auxiliary equipment including but not limited to cabling, module structures, composite isolation cabinet and battery management system (BMS).

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Figure 1 – Internal with cell frames

Figure 2 – Battery Pack with cover

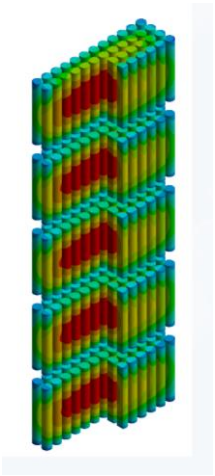

Figure 3 – Temp Simulation

On September 14, 2022, Altech announced the joint venture agreement with Fraunhofer IKTS, a world-leading German battery institute, to commercialise the CERENERGY® Sodium Chloride Solid State (SCSS) Battery, which is a game-changing alternative to lithium-ion batteries in the grid storage market. The joint venture company will be majority-owned (75%) by Altech and its associated entity Altech Advanced Materials AG. The Company will focus on commercialising a 100 MWh project to be constructed on Altech's industrial site in Schwarze Pumpe, Germany. The CERENERGY® batteries are designed for a lifespan of more than 15 years, are fire and explosion-proof, and can operate in extreme cold and desert climates. The battery technology uses table salt and is free of lithium, cobalt, graphite, and copper, thus eliminating exposure to critical metal price rises and supply chain concerns. The Altech-Fraunhofer joint venture is currently commercialising a 100 MWh per annum SCSS battery plant, specifically tailored for the stationary energy storage market, and located on Altech's site in Saxony, Germany.

On 29 March 2023, Altech launched the design for its 1.0 MWh GridPack (ABS1000) battery system. The pre-installed solution is equipped with up to 18 ABS60 60 KWh battery packs connected to a pack power management system. The Altech GridPacks are designed with the "plug and play" feature to ensure that they can be easily installed in remote locations.

The Altech GridPacks have been engineered to ensure complete protection from both dust and any external environments. This means that there is no need for any additional shelters or buildings to house the Altech GridPack batteries, and they can be safely installed outdoors in any weather conditions. The Altech GridPacks will be constructed using a sea container design, which facilitates their easy transportation by sea or road to the installation site, as well as ensuring simple installation.

Unlike other mega battery pack designs on the market, these GridPacks can be stacked on top of each other. This minimises the battery footprint, and permits easy scalability to meet any energy storage requirements.

Figure 4 – 1MWh GridPacks

The stackable feature, coupled with the "plug and play" design, makes the GridPacks the obvious choice for BESS solutions to meet any future energy storage requirements. The Altech GridPacks are also designed without the requirement for any moving parts such as cooling fans, which are typically found in lithium-ion battery mega packs. This is a notable advantage, as end-users have raised concerns about the noise generated by mega packs, preventing them from being placed near residential areas. With the absence of any moving parts, the Altech GridPacks are practically maintenance-free and completely noise-free in operation, making them an ideal solution for noise-sensitive environments.

"*We have built a dynamic and fast moving project team incorporating personnel from Altech, Fraunhofer and various leading German engineering companies and industrial contractors. The advancements made on the final designs of the 60 KWh Battery Pack in such a short time frame are outstanding. I am very pleased with the progress*" said Managing Director Iggy Tan.

Authorised by: Iggy Tan (Managing Director)

Altech Batteries Interactive Investor Hub

Engage with Altech directly by asking questions, watching video summaries and seeing what other shareholders have to say about this, as well as past announcements, at our Investor Hub https://investorhub.altechgroup.com

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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 battery institute Fraunhofer IKTS ("Fraunhofer") to commercialise the revolutionary CERENERGY® Sodium Alumina Solid State (SAS) 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 100MWh 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.

ALTECH cerenergy®
Sodium Alumina Solid State Batteries

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 commenced a definitive feasibility study for the development of a 10,000tpa silicon/graphite alumina coating plant in the state of Saxony, Germany to supply its Silumina Anodes™ product to the burgeoning European electric vehicle market.

This Company recently announced its game changing technology of incorporating 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 graphite 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 preliminary feasibility study (PFS) for the construction of a 10,000tpa Silumina Anode™ material plant at AIG's 14-hectare industrial site within the Schwarze Pumpe Industrial Park in Saxony, Germany. The European graphite and silicon feedstock supply partners for this plant will be SGL Carbon and 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 two German automakers as well as a European based battery company.

Silumina Anodes™

HPA Production Project

Altech is also further aiming to become a supplier of 99.99% (4N) high purity alumina (Al_2O_3) through the construction and operation of a 4,500tpa high purity alumina (HPA) processing plant at Johor, Malaysia, and has finalised Stage 1 and Stage 2 construction of its HPA plant in Johor, Malaysia. Feedstock for the plant will be sourced from the Company's 100%-owned near surface kaolin deposit at Meckering, Western Australia and shipped to Malaysia. The HPA project is significantly de-risked with a bankable feasibility study completed, senior lender project finance from German government owned KfW IPEX-Bank approved, and a German EPC contractor appointed – with initial construction works at the site completed. In addition to the senior debt, conservative (bank case) cash flow modelling of the HPA plant shows a pre-tax net present value of USD 505.6million at a discount rate of 7.5%. The project generates annual average net free cash of ~USD76million at full production. Altech is in the final stages of project finance with a potential raising of US$100m of secondary debt via the listed green bond market. In addition, US$100m of project equity is being sought through potential project joint venture partners.