



3 November 2023

ALTECH – CERENERGY® BATTERY PROJECT UPGRADED DFS OUTPUT TO 120 MWH PER ANNUM

Highlights

- Upgraded DFS Output by 20% to 120 MWh per annum
- Annual output will now reach 120 1MWh GridPacks per annum
- GridPack stacking allows triple stacking with a simple electrical connection
- Small footprint conserving valuable land area
- Minimal maintenance required for GridPacks

Altech Batteries Limited (Altech/the Company) (ASX: ATC and FRA: A3Y) is pleased to announce that, after the final stages of facility design, the Company has successfully increased the output capacity of the CERENERGY® project from 100 MWh to 120 MWh per annum. This enhancement was achieved with the lead engineering company Leadec and joint venture partner Fraunhofer. Interview with Managing Director, Iggy Tan can be found at https://youtu.be/bXTzcWsz5_Y

Through technical design optimisation, the plant output has been enhanced by 20% without incurring any additional capital costs. Consequently, the annual output will now reach 120 1MWh GridPacks. Despite the relatively small size of the plant, most equipment sizes were standard off-the-shelf capacities, offering ample additional capacity. Upon reviewing the equipment throughput with each supplier, Leadec has advised that the rated output of the plant can be conservatively increased to 120 MWh.

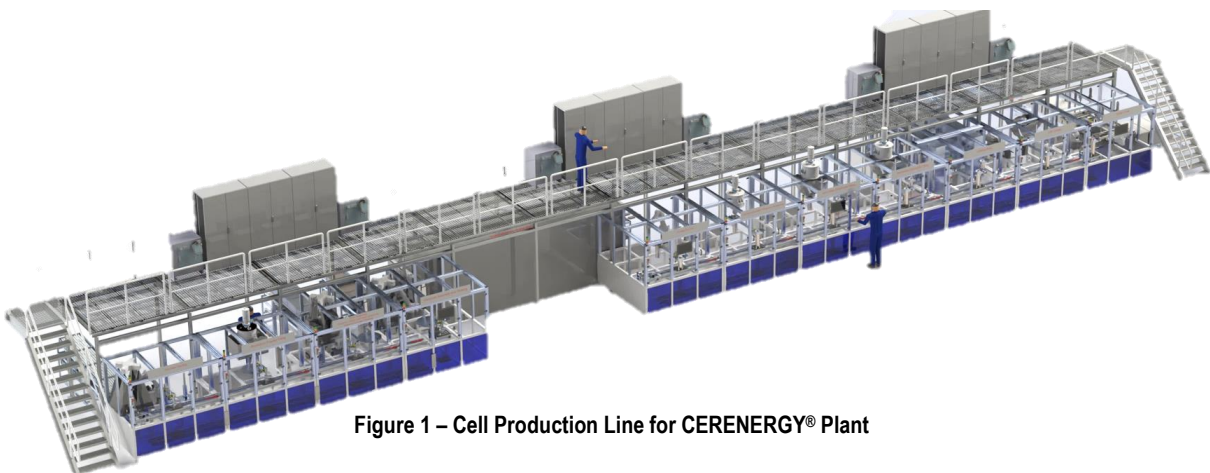


Figure 1 – Cell Production Line for CERENERGY® Plant

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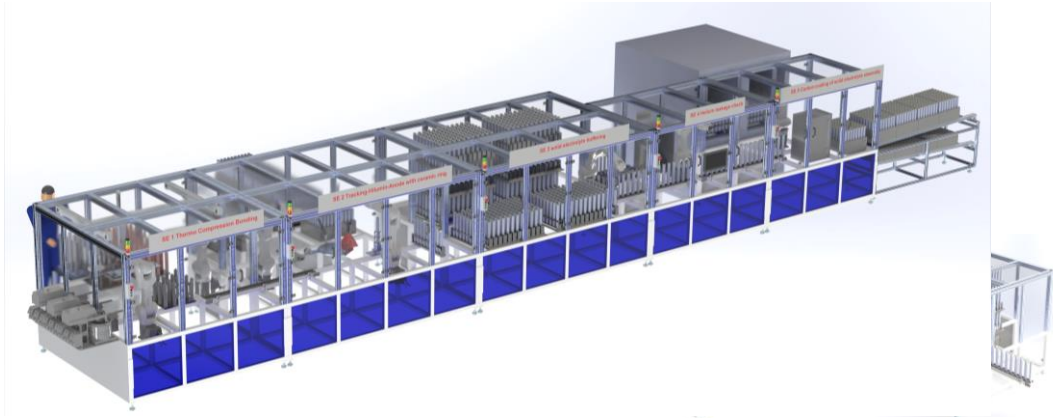


Figure 2 – Typical Module Assembly Units

In a recent announcement, Altech revealed the updated design of the 60 KWh battery pack, now featuring a sleek stainless-steel exterior instead of the previous blue paint. This modification has instilled a greater sense of confidence, as the stainless-steel finish is expected to withstand extreme temperature variations better, whether in snowy or desert conditions, whilst maintaining its pristine appearance.

A significant design update involves the stacking method of the 1MWh GridPacks. The enhanced design now permits triple stacking and facilitates seamless interconnection between each GridPack. These GridPacks can be conveniently stacked atop one another, using a simple electrical connection. The connection leads will be incorporated within the GridPack frames, enabling an effortless "plug and play" setup. This configuration allows for the parallel or series connection of GridPacks to augment the operational voltage. This ingenious design substantially minimises the space occupied by grid storage battery packs and eliminates the necessity for separate cooling airflow around the GridPacks, conserving valuable land area. These advantages position the CERENERGY® GridPacks as a more advanced alternative to lithium-ion battery solutions.



Figure 3 – Triple Stacking Design of 1 MWh GridPack

Group Managing Director Iggy Tan commented on the DFS upgrade to 120 MWh annually. *“From the beginning, we recognised a considerable margin built into the different equipment designs. Initially, our approach to facility design was quite conservative. However, as we’ve progressed in finalising the overall equipment operations, it has become evident that we possess the capability to increase our production rate. We are currently in the final stages of the DFS, where we are meticulously reviewing all cost factors, including operating consumables and purchased items”* he said.

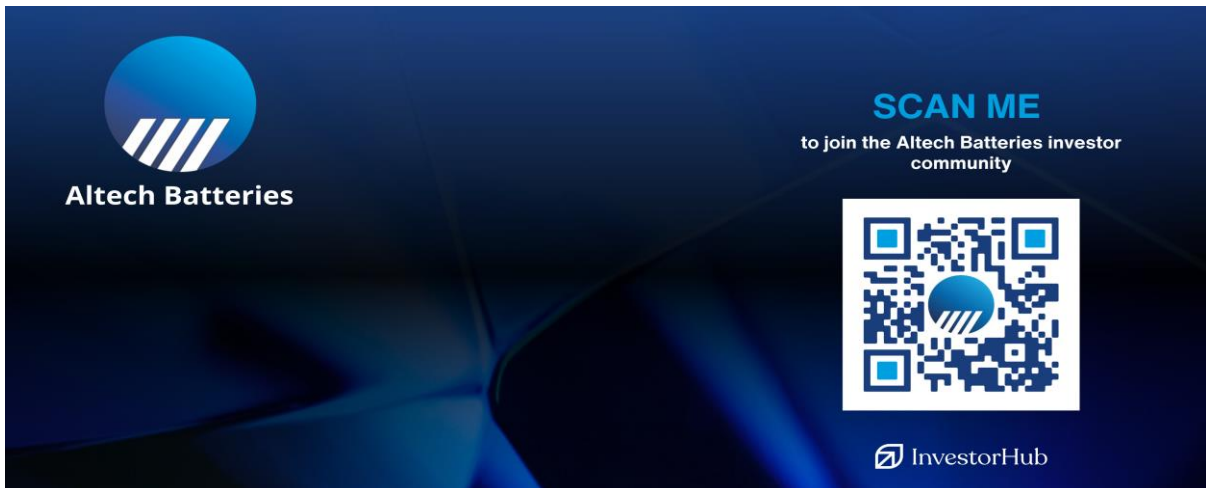
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Watch Interview

Authorised by: Iggy Tan (Managing Director)

Altech’s interactive Investor Hub is a dedicated channel where we interact 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.



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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 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 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.



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 Anodes™ 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.