



Altech Chemicals
Limited

ASX ANNOUNCEMENT AND MEDIA RELEASE

25 January 2023

ALTECH – UPDATE OF CERENERGY® BATTERY PROJECT

Highlights

- Outstanding progress and advancement of the project DFS
- Expert Workshops held in Germany in October and December 2022
- Design basis for 100MWh battery plant were finalised
- All major equipment suppliers selected
- Potential early-stage off-take discussions
- Exploring various grant schemes and initial contact with EU banks

Altech Chemicals Limited (Altech/the Company) (ASX: ATC and FRA: A3Y) is pleased to provide an update on its CERENERGY® battery joint venture with Fraunhofer IKTS (“Fraunhofer”).

On 14 September 2022, Altech executed a Joint Venture Shareholders’ Agreement with the world-leading German battery institute Fraunhofer to commercialise Fraunhofer’s revolutionary CERENERGY® Sodium Alumina Solid State (SAS) battery. On 26 October 2022, Altech appointed leading German company Leotec Automation & Engineering GmbH (Leotec) as the lead engineer for the Definitive Feasibility Study in relation to its CERENERGY® 100MWh battery project. On 7 November 2022, Altech announced that it had designed and launched the CERENERGY® SAS 60 KWh battery pack (ABS60) designed for the renewable energy and grid storage market.

Since then, there has been outstanding progress and advancement of the CERENERGY® project.

During this period, two critical expert workshops were held on 13-14 October 2022 and 8 December 2022, at Altech’s site in Schwarze Pumpe, Germany. The workshops were attended by Altech personnel, Leotec’s process and automation engineering team, and the Fraunhofer CERENERGY® expert battery team. The workshops were headed and led by Managing Director Iggy Tan with the objective to bring forward detailed design requirements as well as efficient industrial production plant design. The team was able to finalise the design basis for the 100MWh battery with the production of the 60-kilowatt hour (KWh) ABS60 battery packs amounting to 1,666 packs per annum. The Fraunhofer experts have been involved in technical information transfer so as to ensure an optimal production process and progressing thermal modelling of the 60 KWh ABS60 battery packs to optimise the battery pack casing design and battery management systems. Leotec, the lead engineering company, is currently developing technical specifications for potential suppliers to quote on. A preliminary layout of the battery plant and site layout has been completed. Major milestones have been achieved in a very short period of time.

As part of the workshops, potential equipment suppliers recommended by Fraunhofer were invited to present their proposals in terms of technical capabilities, cost and timelines. The key equipment suppliers have now been finalised and are being integrated to work closely with the various project teams. During the period, Altech also appointed ARIKON Infrastruktur GmbH (Arikon) to manage the approval process, site infrastructure requirements, and balance of plant for the CERENERGY® SAS battery facility. Arikon will be responsible for managing the application process and working with relevant regulatory bodies to obtain all necessary approvals for the project. This includes securing necessary permits and licenses, coordinating with local authorities and arranging utility connections. Additionally, Arikon will be responsible for designing the site infrastructure requirements for the site.

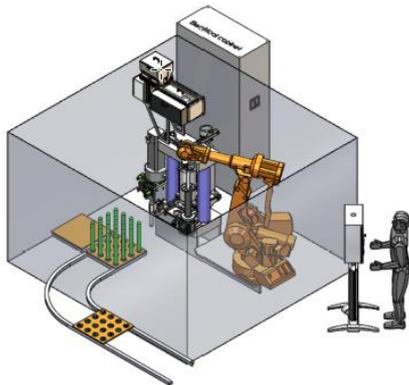


Figure 1 – Typical Automatic Isostatic Press Machine

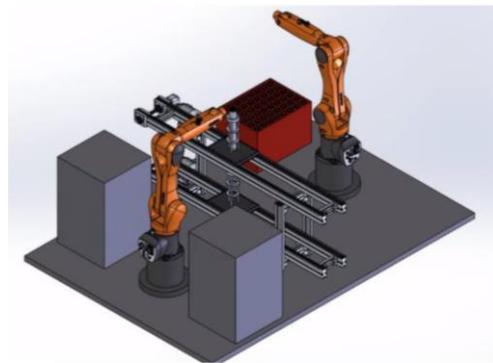


Figure 2 -Typical Robotic Cell Assembly

On the marketing front, Altech's business development team is communicating with potential customers that have expressed interest in the supply of CERENERGY® batteries and the technology. This includes a leading German energy producer that has expressed an imminent requirement to secure energy storage solutions. As the world transitions from a fossil fuel economy to a sustainable energy economy, scale and ramp up of battery storage solutions are required. Altech is aiming to secure off-take interest as part of the DFS as support for funding the project.

On the finance front, Altech is exploring various grant schemes within Germany at state and federal level as well as the EU, to support financing the project. Altech has also held discussions with leading European banks in preparation for the funding stage.

Managing Director Iggy Tan was extremely pleased with the progress of the CERENERGY® Battery Project and stated *"We have moved very quickly on the opportunity and managed to close the joint venture Agreement with Fraunhofer and incorporated two companies in just two months, with one month being the August holidays in Germany. Since that time, we have raced to get the project moving with several commencement workshops. We have also appointed key engineering companies like Leadec and Arikon. We have also launched the design for the 60 KWh battery pack for the renewable energy storage sector. To date, all plant and equipment suppliers have been selected. On the marketing front, the team have been having discussions with potential interested off take parties. I am very pleased with the team we have assembled, and the outstanding progress made thus far"*.

Background

CERENERGY® batteries are the game-changing grid storage 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 Altech-Fraunhofer joint venture is developing a 100 MWh SAS battery plant (Train 1) on Altech's land in Saxony, Germany, specifically focussed on the grid (stationary) energy storage market.

Since the CERENERGY® batteries can operate at a very wide temperature range of minus (-) 40 deg C to plus (+) 60 deg C, the battery pack will be ideal for the cold European climates. In addition, being fire-proof, the ABS60 battery packs will be safe to install indoors where lithium-ion batteries are prohibited.

The battery plant is being designed to produce ABS60 battery packs as a standard product to meet Europe's renewable energy and grid storage market. Fraunhofer have previously estimated that the cost of producing CERENERGY® batteries should be in the region of 40% cheaper than lithium-ion batteries, primarily due to not requiring lithium, graphite, copper or cobalt. This will be confirmed in the Definitive Feasibility Study that Altech is currently preparing.

Altech Chemicals 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.altechchemicals.com>

– end –



Authorised by: Iggy Tan (Managing Director)

For more information, please contact:

Corporate

Iggy Tan

Managing Director

Altech Chemicals Limited

Tel: +61 8 6168 1555

Email: info@altechchemicals.com

Martin Stein

CFO & Company Secretary

Altech Chemicals Limited

Tel: +61 8 6168 1555

Email: info@altechchemicals.com



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

CERENERGY® Batteries Project

Altech Chemicals 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.



Silumina Anodes™ Battery Materials Project

Altech 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.



HPA Production Project

Altech is also further aiming to become a supplier of 99.99% (4N) high purity alumina (Al₂O₃) 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.