



Altech Chemicals
Limited

ASX ANNOUNCEMENT AND MEDIA RELEASE

20 December 2021

ALTECH – BATTERY MATERIALS COATING PLANT PROJECT RECEIVES GREEN STATUS

Highlights

- Altech's battery materials coating plant project awarded "Medium Green" rating
- Centre of International Climate and Environmental Research (CICERO)
- Assessment encompassed both project and governance aspects
- Environmentally sustainable design features acknowledged
- Lower CO₂ emissions of between ~19% and ~52% possible

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to report that as part of the preliminary feasibility study (PFS) being undertaken by its 75% owned German subsidiary Altech Industries Germany GmbH (AIG), the independent Centre of International Climate and Environmental Research (CICERO) in Norway has assessed the proposed German Battery Materials Coating Plant project as "Green".

As announced on 18 November 2021, CICERO were engaged by AIG to conduct an independent evaluation of the Company's proposed battery materials coating plant proposed to be located at the Schwarze Pumpe Industrial Park, Saxony, Germany. The plant is being designed with a specific focus on minimising environmental impact, and in accordance with prevailing German, European and International environmental standards.

CICERO's review has now been completed, and a rating of "Medium Green" has been awarded to the project. This positive project evaluation, formally termed a "*Green Bond Second Opinion*", confirms that the project, which is currently the subject of a PFS, would be suitable for future green bond financing.



In determining the overall project framework rating of "Medium Green", CICERO assessed the proposed governance procedures and transparency as "Good" and confirmed that the project aligns with all green bond principles. In assessing the proposed plant design and coating process, CICERO noted "*The plant has near zero Scope 1 and 2 emissions as the plant's processes, including steam generation, are fully electrified, and it will use renewable electricity sourced from on-site solar panels and renewable energy certificates*". Although CICERO acknowledges the project is still in the development phase, in assessing governance and transparency considerations, it has encouraged Altech "*to implement and enforce a robust*

supply chain sustainability policy, as well as to engage with its suppliers to address their sustainability impacts”, given that >90% of the plant carbon footprint is attributable to plant feedstock such as graphite and silicon.

A CO₂ footprint assessment of the proposed 10,000tpa plant determined that, when compared to the incumbent lithium-ion battery technology that uses a graphite only anode, coated silicon anode material could result in a CO₂ emissions reduction of ~19% where 5% coated silicon is used in a battery anode, and a reduction of up to ~ 52% if 20% coated silicon was used (refer Table 1).

Table 1: Estimated reduction in CO₂ footprint from use of coated silicon in Lithium-ion battery anode

Silicon Content %	Reduction in CO ₂ footprint in LIB (equivalent power)
5%	18.7%
10%	34.9%
15%	44.9%
20%	51.8%

Commenting on the CICERO assessment, Altech managing director Iggy Tan stated “CICERO’s independent assessment of AIG’s proposed battery materials coating plant, and its suitability for possible future green bond financing, is an important inclusion for the current preliminary feasibility study – and it certainly adds credibility to this proposed project. The PFS continues to progress, and Altech anticipates that the results will be available to it during the first quarter of 2022.”

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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

Shane Volk

Company Secretary
Altech Chemicals Limited
Tel: +61 8 6168 1555
Email: info@altechchemicals.com

Martin Stein

Chief Financial Officer
Altech Chemicals Limited
Tel: +61 8 6168 1555
Email: info@altechchemicals.com

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

Altech Chemicals Limited (ASX: ATC, "Altech" or "Company") is a specialty alumina technology and production company that has finalised Stage 1 and Stage 2 construction of its high purity alumina (HPA) plant in Johor, Malaysia, and continues with innovative research and development of its downstream alumina coating technology used to improve the battery life and performance in lithium-ion batteries. Altech's alumina coating technology is successful on both silicon and graphite particles, typical of those used in the anode of lithium-ion batteries, particularly within the burgeoning electric vehicle industry.

The Company has commenced a preliminary feasibility study (PFS) for the construction of a high purity alumina (HPA) battery materials coating plant in Saxony, Germany. The PFS is being undertaken by Altech's 75% owned German subsidiary, Altech Industries Germany GmbH (AIG). Work on the preliminary engineering design for the 10,000 tpa battery materials plant is in the final stages of completion. Altech has also commenced the green accreditation of the environmental credentials of the battery materials process.



Altech is further aiming to become one of the world's leading suppliers 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. 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.

HPA is a high-value, high-margin and highly demanded product as it is the critical ingredient required for the production of synthetic sapphire. Synthetic sapphire is used in the manufacture of substrates for LED lights, semiconductor wafers used in the electronics industry, and scratch-resistant sapphire glass used for wristwatch faces, optical windows and smartphone components. Increasingly, HPA is used by lithium-ion battery manufacturers as the coating on the battery's separator, which improves performance, longevity and safety of the battery. With global HPA demand approximately 19,000t (2018), it is estimated that this demand will grow at a compound annual growth rate (CAGR) of 30% (2018-2028); by 2028 HPA market demand is forecast to be approximately 272,000t, driven by the increasing adoption of LEDs worldwide as well as the demand for HPA by lithium-ion battery manufacturers to serve the surging electric vehicle market.

German engineering firm SMS group GmbH (SMS) is the appointed EPC contractor for construction of Altech's Malaysian HPA plant. SMS has provided a USD280 million fixed price turnkey contract and has proposed clear and concise guarantees to Altech for plant throughput and completion. Altech has executed an off-take sales arrangement with Mitsubishi Corporation's Australian subsidiary, Mitsubishi Australia Ltd (Mitsubishi) covering the first 10-years of HPA production from the plant.

Conservative (bank case) cash flow modelling of the HPA plant shows a pre-tax net present value of USD505.6million at a discount rate of 7.5%. The project generates annual average net free cash of ~USD76million at full production (allowing for sustaining capital and before debt servicing and tax), with an attractive margin on HPA sales of ~63%. (Refer to ASX Announcement "Positive Final Investment Decision Study for 4,500TPA HPA project" dated 23 October 2017 for complete details. The Company confirms that as at the date of this announcement there are no material changes to the key assumptions adopted in the study).

The Company has been successful in securing senior project debt finance of USD190 million from German government owned KfW IPEX-Bank as senior lender. Stage 1 and Stage 2 early works construction has been completed on time and on budget.

Forward-looking Statements

This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward-looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward-looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.