



**Altech Chemicals**  
Limited

## ASX ANNOUNCEMENT AND MEDIA RELEASE

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# ALTECH HPA PROJECT DUE DILIGENCE UPDATE

### Highlights

- Project finance due diligence activities nearing completion
- Independent due diligence has been extensive and detailed
- No fatal flaws identified

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) is pleased to provide a further update on due diligence activities associated with the financing of its proposed high purity alumina (HPA) project (the Project).

The Company is working to complete the remaining items from the definitive technical, market, and legal due diligence reviews of the Project. These reviews will form the basis of an independent “expert opinion” report to be presented to the German government inter-ministerial committee (IMC) for determination on the availability of project finance export credit cover for the Project.

Test work due diligence is mostly complete however some confirmatory test work requested by the appointed technical consultants remains. The outstanding work primarily concerns impurity management relating to HPA plant materials of construction and ensuring finished-product HPA achieves the required 99.99% (4N) purity. The work is expected to be ongoing until early next quarter, and after satisfactory completion the results will be incorporated into the expert opinion report.

Project due diligence has been extensive, detailed, and as previously announced by the Company no fatal flaws in the Project have been identified. Work completed by the Company at the request of the various due diligence consultants during the last six months has included:

### Roaster Kiln

In December 2016 roaster kiln pilot plant trials were conducted in South Africa, which successfully demonstrated the operational effectiveness of the selected kiln, including its mechanical performance and the thermal performance of the internal proprietary kiln lining.

In addition to the operability test of the kiln, the technical consultants requested controlled laboratory test work of the roaster materials of construction (kiln lining and kiln casing) to confirm resistance to corrosion during aluminium chloride (ACH) to alumina roasting. A test program by Curtin University, Western Australia is now completed.

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### **Alumina Calciner Refractory**

Laboratory test work was requested to confirm that alkali volatilisation and impurity ingress would not be apparent for the alumina refractory lining proposed for the alpha alumina calciner; test work with the refractory supplier was completed in March 2017. The technical consultants requested further laboratory test work to specifically expose Altech manufactured alumina to the refractory lining. These exposure tests are currently underway at Curtin University in Western Australia.

### **Mineral Resource Variability Testing – Meckering Kaolin Deposit**

Whilst drilling data supporting the Mineral Resource estimate for the Company's Meckering kaolin deposit has demonstrated the homogeneous nature of the deposit, the technical consultants require additional variability testing on the kaolin ore. Variability test work on Meckering drill samples is now completed.

### **HPA Jet Milling**

Jet milling test work was requested to confirm the HPA product's target particle size was achievable by the selected mills. Test work trials were conducted in Germany and China, with additional studies around the materials of construction (alumina linings) now nearing completion.

### **HPA Pelletising**

The majority of Altech's finished-product HPA is intended to be in the form of HPA pellets, which have a higher bulk density compared to HPA in its initial product form. HPA pellets are preferred by the synthetic sapphire industry as they afford superior filling of the high temperature furnaces used in synthetic sapphire manufacture. The technical consultants requested confirmatory test work for Altech's pelletising equipment selection; specifically, confirmation and test work of the final HPA product quality in relation to the pelletiser's materials of construction. Altech is currently in the process of co-ordinating these test work trials.

### **Equator Principles – Environmental and Social Impacts Study**

The Equator Principles is a global risk management framework adopted by financial institutions for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for project finance due diligence to support responsible risk decision-making. In addition the Common Approaches, a set of recommendations for addressing environmental and social aspects of officially supported ECAs based in OECD countries are applicable.

KfW IPEX-Bank requested a study of the Project in accordance with the Equator Principles and Euler Hermes as German ECA requested a study of the Project in accordance with the OECD Common Approaches, regardless of the Project not requiring an environmental and social impact assessment (ESIA) in Malaysia or Australia. Altech commissioned the environmental and social impact requirements for Project review, which is now complete.



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## **Intellectual Property Protection**

Altech filed Australian Patent Application 2014253487 titled 'A Method for the Preparation of Alumina' on October 2014, which provides protection for this process in Australia. The legal due diligence consultants have requested confirmation that Altech's method for the preparation of HPA does not breach any existing patents, so-called freedom-to-operate analysis. Altech, through internal patent research work over several years, is certain of its intellectual property position. Specialist patent and trademark attorneys have been engaged to provide independent confirmation; this work is now entering the final stages of completion.

## **Export Credit Cover Submission and Decision**

Project due diligence activities are now in their final stages with the extensive confirmatory test work and necessary adjustments in the design work of the plant finalised. Test work has principally focused on impurity management and equipment materials of construction to substantially reduce the risk that finished-product HPA will not achieve the requisite 99.99% (4N) quality specification. The program has provided robust independent verification of the Company's plant design, equipment selection and HPA manufacturing process.

Commenting on the status of Project due diligence activities, Altech managing director Iggy Tan said "*Whilst due diligence work has taken longer than initially anticipated, it is reassuring that all of the requested test work has been completed to the satisfaction of the various independent consultants.*

*"The conclusion of the due diligence process is now in sight, and while there is no certainty that the cover or the project debt finance will be approved, the Company remains confident that its application for project finance export credit will be successful"*, he concluded.

- Ends -



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*Wir sprechen Deutsch.*

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

**Altech Chemicals Limited** (Altech/the Company) is aiming to become one of the **world's leading suppliers of 99.99% (4N) high purity alumina (HPA)** ( $Al_2O_3$ ).

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. There is no substitute for HPA in the manufacture of synthetic sapphire.

Global HPA demand is approximately 25,315tpa (2016) and demand is growing at a compound annual growth rate (CAGR) of 16.7% (2016-2024), primarily driven by the growth in worldwide adoption of LEDs. As an energy efficient, longer lasting and lower operating cost form of lighting, LED lighting is replacing the traditional incandescent bulbs.

Current HPA producers use expensive and highly processed feedstock materials such as aluminium metal to produce HPA. Altech has completed a Bankable Feasibility Study (BFS) for the construction and operation of a 4,000tpa HPA plant at the Tanjung Langsat Industrial Complex, Johor, Malaysia. The plant will produce HPA directly from kaolin clay, which will be sourced from the Company's 100%-owned kaolin deposit at Meckering, Western Australia. Altech's production process will employ conventional "off-the-shelf" plant and equipment to extract HPA using a hydrochloric (HCl) acid-based process. Production costs are anticipated to be considerably lower than established HPA producers.

The Company is currently in the process of securing project financing with the aim of commencing project development in Q4, 2017.



**Forward-looking Statements**

The Company reports that the ECA application process is currently targeted for Q-3 2017, however there is no certainty that German government project finance export credit cover (ECA) and/or project debt finance will be approved. The Company makes no representations or warranties whatsoever as to the outcome of the ECA application process. In addition, the Company to date has not been provided with any estimates of the capital costs of the project from its appointed proposed EPC contractor, which is still finalising the detailed design of the proposed Malaysian high purity alumina (HPA) plant and has not been provided with sufficient firm quotations of costs to provide the estimate.

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.