



**Altech Chemicals**  
Limited

# QUARTERLY REPORT

December 2018

## Global equity market headwinds

- Enquiries received re: deterioration of ATC share price
- Adversely impacted by a recent general sell-down on global equity markets
- Particularly small-cap battery materials related companies
- Declines averaging 50% of battery materials sample group
- No change to project, HPA market, or debt funding strategy
- Management continue to make solid progress with project development

## Equity work stream progress

- Based on the debt-equity ratio target, further equity will be required
- Several funds, private equity and industrial groups have commenced due diligence
- Potential joint venture, partial project sell down
- Equity investment at listed level

## HPA plant Development Order approved and site establishment commenced

- Development Order for Malaysian HPA plant approved
- Site establishment and mobilisation has commenced in Johor
- Stage 1 construction works to follow site establishment

## HPA plant site layout and building design finalised

- HPA plant site layout and buildings design finalised
- Incorporates results from geotechnical ground survey
- Construction development order application approved

## Execution of Johor and Meckering EPC contracts

- EPC contracts for the Johor HPA plant and Meckering container loading facility both formally executed
- No change to the US\$ 280 million fixed price for the Johor HPA plant
- No change to the US\$ 2.5 million fixed price for the Meckering container loading facility

## Schedule of patent applications to protect Altech's HPA process

- Total of seven (7) Patent Applications lodged for Altech HPA Process
- Five (5) Patent Applications lodged in Australia
- Two (2) Patent Applications lodged in Malaysia
- One (1) Innovation Patent granted in Australia – currently in examination

## Annual General Meeting

- AGM held on 13 November 2018
- Sufficient funds to progress Stage 1 construction activities
- All resolutions put to the meeting were passed.

## Green credentials of Altech's kaolin to HPA process confirmed

- Study conducted on energy savings and greenhouse gas reduction from Altech's HPA process
- 46% reduction of greenhouse gases per tonne of HPA
- 41% reduction in energy consumption per tonne of HPA
- Reduction of 77 Mt of CO<sub>2</sub> pa from transition to LED lighting
- HPA supports the lithium-ion battery and renewable energy sectors

## Global equity market headwinds

During the quarter, the Company received numerous enquiries from shareholders about the deterioration of its share price, and whether there have been any significant changes to the Company's high purity alumina (HPA) project; the HPA market; the senior debt facility; or the mezzanine debt due diligence process. The answer is "no" to all of these.

Unfortunately Altech's share price has been caught up in a recent general sell-down on global equity markets, and particularly the sell-down of ASX listed small-cap companies pursuing battery materials projects (lithium, graphite, cobalt, rare earth and HPA). Analysis of the share price performance of a selection of ASX companies in the battery materials sector over the last six months shows segment falls of: 45% (Lithium); 47% (Graphite); 60% (Cobalt); 43% (Rare Earths); and 50% (HPA), as illustrated in Tables 1a-1e below.

Altech has also been made aware that some institutional investors (funds) have recently adjusted minimum market capitalisation investment thresholds, which has resulted in portfolio re-balancing and the selling of small-cap company shareholdings, such as Altech.

**Table 1a - Lithium Project Companies (various)**

Company	Code	Sector	High *	Low *	% Change	
Galaxy	GXY	Lithium	3.290	2.130	-35%	
Oreocobre	ORE	Lithium	5.630	3.330	-41%	
loneer	INR	Lithium	0.445	0.180	-60%	
Pilbara	PLS	Lithium	1.105	0.705	-36%	
Altura	AJM	Lithium	0.360	0.175	-51%	
* 6 Month ending 15 Dec 2018					Average	-45%

**Table 1b - Graphite Project Companies (various)**

Company	Code	Sector	High *	Low *	% Change	
Syrah	SYR	Graphite	3.120	1.410	-55%	
Hexagon	HXG	Graphite	0.215	0.125	-42%	
Bass Metals	BSM	Graphite	0.030	0.014	-53%	
Kibaran	KNL	Graphite	0.220	0.115	-48%	
Sovereign	SVM	Graphite	0.098	0.063	-36%	
* 6 Month ending 15 Dec 2018					Average	-47%

**Table 1c - Cobalt Project Companies (various)**

Company	Code	Sector	High *	Low *	% Change	
Ardea	ARL	Cobalt	0.930	0.530	-43%	
Northern Cobalt	N27	Cobalt	0.225	0.065	-71%	
European Co	EUC	Cobalt	0.067	0.040	-40%	
Cobalt Blue	COB	Cobalt	1.110	0.210	-81%	
Clean Tech	CLQ	Cobalt	1.150	0.380	-67%	
* 6 Month ending 15 Dec 2018					Average	-60%

**Table 1d - Rare Earth Project Companies (various)**

Company	Code	Sector	High *	Low *	% Change	
Arafura	ARU	Rare Earth	0.100	0.052	-48%	
Lynas	LYC	Rare Earth	2.550	1.580	-38%	
Hastings	HAS	Rare Earth	0.260	0.130	-50%	
Artemis	ARV	Rare Earth	0.230	0.120	-48%	
Greenland	GGG	Rare Earth	0.100	0.071	-29%	
* 6 Month ending 15 Dec 2018					Average	-43%

**Table 1e - High Purity Alumina Project Companies (various)**

Company	Code	Sector	High *	Low *	% Change	
Altech	ATC	HPA	0.205	0.082	-60%	
FYI Resources	FYI	HPA	0.135	0.055	-59%	
Pure Alumina	PUA	HPA	0.080	0.040	-50%	
Alpha HPA	A4N	HPA	0.150	0.105	-30%	
* 6 Month ending 15 Dec 2018					Average	-50%



The Board shares the frustration of shareholders about the Company's share price performance, especially considering the significant progress made with our HPA project during the months following the successful July 2018 capital raising. However, as is illustrated by our share price compared to other battery material companies, Altech is not immune to general market conditions and sentiment.

Achievements of the Company during the quarter include:

#### **Johor Development**

- The site in Johor for our HPA plant was cleared and establishment works have now commenced;
- A ground-breaking ceremony was conducted on 8 August 2018;
- A geotechnical drilling survey was completed;
- The Stage 1 early works construction agreement was executed with SMS group;
- The HPA plant site layout and buildings design is now completed;
- A development order building application was submitted and has now been issued; and
- Stage 1 construction at Johor remains on track.

#### **Mezzanine debt**

- The technical review processes was progressed and is now completed following the incorporation of additional information from SMS group and others in the report;
- Two draft technical review reports were received by the potential mezzanine debt facility provider from the technical consultant (Advisian) in October 2018 and November 2018;
- Potential mezzanine lender has commissioned an independent HPA market analysis report; and
- Updated financial modelling is underway in preparation for inter-creditor discussions between the potential mezzanine debt provider and the senior lender – KfW IPEX-Bank.

#### **Intellectual Property Protection**

- Progressed the protection of Altech's Kaolin to HPA intellectual property;
- Seven (7) patent applications are in progress (Australia and Malaysia); and
- One (1) innovative patent was granted to Altech on 16 October 2018, which has commenced the formal examination process.

#### **HPA Market**

- The HPA remains strong and buoyant, particularly HPA for lithium-ion battery separator sheets; and
- Recent attendance by the Company at the 2018 Battery OSAKA conference reported:
  - strong interest for HPA powder from South Korea and Japan;
  - demand for HPA from the lithium-ion battery separator sheet sector appears to be growing faster than expected;
  - the price of HPA at the premium end of the market (Japan and South Korea) is holding at US\$40,000/t; and
  - there is no negative change reported for the HPA market, if anything, the outlook is more positive than earlier in the year.

#### **Equity / project level investment**

- Discussions continue with various funds, private equity and industrial groups for a possible strategic investment and/or partial project sell-down, at project level;
- A number of the groups are in various stages of due diligence and project analysis; and
- Any decision on equity participation will come after mezzanine debt is finalised.

In summary, a tremendous amount has been achieved by the Company in the past quarter. The Company remains focussed on the project and continues to move forward ticking each and every development box. We cannot control equity markets and sentiment, just our process to develop the lowest cost HPA plant in the world.

Discussions with senior lender (KfW IPEX-Bank) and the proposed mezzanine debt provider, about the inclusion of the proposed stream finance facility (royalty stream) as part of a final project financing solution have determined that repayment priority and inter-creditor terms acceptable to all parties would not be likely. The proposed stream finance facility provider has since advised the Company that it has withdrawn its offer and consequently the stream finance facility proposed by this provider cannot be considered as part of the final targeted financing solution.

## Mezzanine Debt technical review completed

The Company recently announced that the technical review of its Malaysian high purity alumina (HPA) project that was initiated by the proposed mezzanine debt provider has now concluded. Advisian, the mezzanine lender's technical advisor, conducted an extensive and thorough review of the HPA project when responding to specific questions from the proposed mezzanine debt provider, which has taken six months. After extensive analysis, test work/data review and discussions with Altech and SMS group representatives, Advisian has concluded with a positive report on the project's technical aspects and project flowsheet. The report concludes that the Company has suitable proposed mitigation steps to manage the identified technical risk areas of the project. The report is currently being reviewed by the proposed mezzanine debt provider.

### Background

In May 2018, Altech announced that it had received an indicative non-binding mezzanine debt term sheet for US\$90 million from a global investment bank. The term sheet is indicative, non-binding and remains subject to amongst other things; technical review; investment committee approval; agreement on binding terms; and various approvals (including from the senior lender, boards and regulatory authorities). The potential mezzanine debt provider appointed Advisian, the independent consulting arm of WorleyParsons group, as its independent technical adviser in July 2018. Work started in August 2018 and a draft technical advisor report was issued in October 2018. The draft was updated in mid-November 2018 following the provision of additional technical information and the clarification of various matters raised in the draft report. In early December 2018 the remaining outstanding technical matters from the updated draft report were addressed during a meeting in Dusseldorf, Germany attended by representatives from SMS group (the appointed EPC contractor for construction of the HPA plant); m.Plan International (technical advisor for the senior lender KfW IPEX-Bank); and Altech.

The final mezzanine lender's technical advisor report is positive and concludes that the Company has suitable proposed mitigation steps to manage the identified technical risk areas of the project. Altech's HPA project has now been the subject of two detailed independent technical reviews, both of which have culminated in positive and satisfactory conclusions. The proposed mezzanine lender is reviewing the technical advisor's report thoroughly and will advise the Company of its next steps and timeline.



## Equity work stream update

As previously announced, the Company envisages that further equity to support the project financing will be required. The equity amount has yet to be determined, as it will depend on the amount of mezzanine debt secured, the outcome of the joint venture and project sell down option, plus final financing costs, reserve accounts, working capital and any lender mandated contingency. The equity component of the project finance is being pursued in two distinct work streams, joint venture or partial project sell down and/or a placement of shares by the Company.

On the joint venture work stream, several funds, private equity and industrial groups have commenced due diligence and investment modelling. These groups have accessed the Company's data room and some have spent substantial time and resources to gain a detailed understanding of the Company's HPA project. Depending on their individual investment mandate, the groups are assessing the possibility of a joint venture partnership or direct investment at either the project level (Malaysia), or at the Australian level. Altech is targeting potential partners that can add value to the Company's HPA project. In conjunction with the proposed mezzanine debt, introducing a strategic partner is an attractive option as it will potentially reduce shareholder dilution.

On the equity work stream, at the listed public company level we continue to present and provide updates to various investment funds, private equity and industrial groups that are mandated to invest at the public company level. Sydney based Petra Capital has been assisting the Company with a possible equity raise that may be required to finalise the total balance of funds to enable the draw-down of senior debt.

## Development Order approved and site establishment commenced

The Company received approval of the Development Order for the Company's high purity alumina (HPA) plant in Johor, Malaysia in late January 2019.

Site establishment activities have commenced. The activities that are underway or will commence shortly, include: hoarding of the entire site; the establishment of a site office, guard house and security; construction of access ways into and within the site; mobilisation of construction plant and equipment; and project signage. Safety inductions have been completed for all sub-contractors involved in site establishment activities. The commencement of works follows the initial approval of a site establishment works permit from local authorities in Johor that was valid from 1 January 2019.

Stage 1 construction work activities will follow the completion of site establishment work. These proposed works include bulk earthworks; maintenance workshop foundation piling; the construction of retaining walls; on-site water detention tanks (OSD tanks); construction of the site sub-station structure and a maintenance workshop. The maintenance workshop will be used as covered storage during stage 2 of the HPA plant construction. The majority of stage 1 works have been funded and pre-paid to the EPC contractor and will be credited against the US\$280 million lump-sum fixed-price HPA plant EPC contract price.



## HPA plant site layout and building design finalised

The Company finalised and “locked” the site layout and building design for its proposed Malaysian high purity alumina (HPA) plant during the quarter. The final layout and design incorporates results from the recently completed site geotechnical survey and feedback from pre-construction consultation meetings between SMS group (the appointed EPC contractor), local authorities, and Malaysian permitting consultant WKL & Associates. The final design is the basis for the submission of a development order application and the commencement of stage 1 construction.

The final site layout (see Figure 1) comprises three (3) production buildings:

- Building 1: Kaolin Beneficiation
- Building 2: Leach & Neutralisation
- Building 3: HPA Production & HCL Recycle Plant

There are four (4) ancillary buildings:

- Administration and Process
- Workshop and Stores
- Guardhouse and First Aid
- Electrical Substation

## Detailed HPA Plant Layout Information

All processing equipment will be installed in one of the three production buildings. The HPA production buildings have been laid out on the 4Ha site in Johor, Malaysia to closely reflect the order of the kaolin to HPA chemical process illustrated in the Company’s process flow sheet. The HPA manufacturing process will commence with kaolin beneficiation; then filtration and meta-kaolin conversion in Building 1; kaolin leach, leach residue and waste water neutralisation circuits in Building 2; followed by crystallisation, roasting, calcination and HPA finishing in Building 3. Building 3 includes a segregated structure within which the hydrochloric acid (HCl) recovery and recycling plant will be located.



Figure 1 - HPA Plant Final Buildings Layout

Figure 2 - Administration and Process Building



The Administration and Process building will be the central location for plant operational management and administration. The building is separated into halves, an administration wing and a process wing. The administration wing will accommodate HPA site general management, process engineering, finance and administrative staff. Included in the administration wing is a conference room, training rooms, meeting rooms and lunchroom facilities.

The process wing will be the location for the site's central control room, from where the operation of the entire HPA plant will be monitored and managed. In addition, the process wing will accommodate the site's laboratory; process control and programming engineers; operator change rooms; and will also have separate lunchroom facilities.

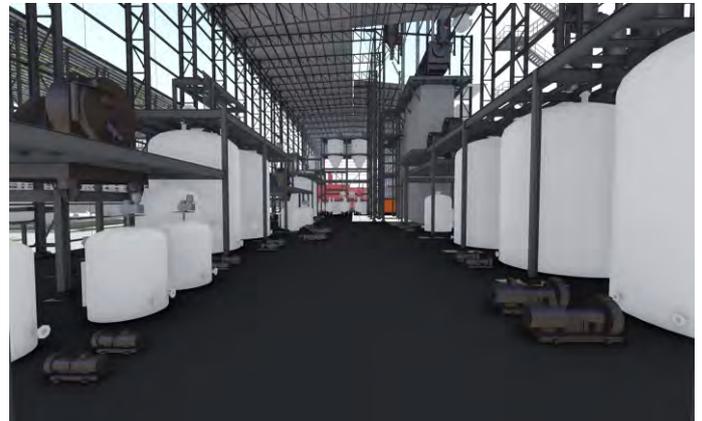
The Workshop and Stores building will be the location for the storage of all minor equipment and spare parts; the conduct of valving and instrument maintenance and for all fabrication activities. A dedicated stores area has been allowed for to accommodate the delivery, receipt and storage of spare parts, consumables and reagents. The building also includes office space for site maintenance and purchasing teams.

**Figure 3 - Gatehouse and Site Entry**



A Gatehouse and First Aid building will be the single point of entry to the HPA site. The building will include a guardhouse that will be manned 24 hours a day and site access beyond the gatehouse will be only via a card-entry turnstile. A visitor waiting room, meeting room and lunchroom are included in the building, as is a dedicated first aid room and ambulance parking bay.

The HPA plant site layout and building designs are of the highest calibre. Naturally, the designs are to international standard and of a quality expected from our appointed German EPC contractor SMS group.



## Execution of Johor and Meckering EPC Contracts

### Johor EPC Contract

During the quarter, the US\$280 million lump-sum, fixed-price, turnkey contract for construction of the Company's proposed Malaysian high purity alumina (HPA) plant was formally executed in Dusseldorf, Germany. The US\$ 280 million EPC price is unchanged from the original contract value provided by appointed engineering, procurement and construction (EPC) contractor SMS group GmbH (SMS) in October 2017.

The EPC contract requires SMS to construct the Malaysian HPA plant on a fixed price turnkey basis and includes clear and concise guarantees to Altech for plant throughput and completion. In addition, having prior experience with the kaolin to HPA HCl processing that Altech will use, SMS has agreed process and final product guarantees for the 99.99% (4N) HPA quality specification. The guarantees provided by SMS are extremely positive and significantly mitigate project risk. SMS is a large privately owned German engineering firm with annual turnover of approximately 3.3 billion Euros. SMS has recent EPC contract experience in Malaysia, having successfully completed the Sakura smelting project, in Sarawak.

L to R: S Volk (ATC), I Tan (ATC), T Heising (CFO SMS), H Behrens (SMS), W Moolman (Metix)

### Meckering EPC Contract

During the quarter, Altech also executed the fixed-price, lump-sum, turnkey EPC contract for the construction of a container loading and storage facility at its proposed Meckering kaolin mining operation, in Western Australia. Simulus Engineering Pty Ltd of Perth, is the appointed EPC contractor for this part of the Company's HPA project, a formal contract signing ceremony was held in Perth, Western Australia on 20 December 2018. The Meckering EPC contract value is US\$ 2.5 million and has also remained unchanged from the original quotation in October 2017. Under the EPC contract, Simulus will construct the container loading and storage facility on a lump-sum, fixed-price turnkey basis that includes clear and concise guarantees to Altech for the loading plant, which is designed for a loading capacity of ~840 tonnes of kaolin per week (5 days) into standard sea containers, which once loaded will be shipped to Johor, Malaysia.



## **Schedule of Patent Applications**

The Company provided an update during the quarter on the numerous patent applications (pending) that it has lodged for its kaolin to high purity alumina (HPA) production process (Altech HPA Process), and the status of its recently granted Innovation Patent 2018101228.

The Company is committed to placing itself in a strong position to protect its intellectual property rights. Accordingly, Altech has so far lodged seven (7) Patent Applications for the Altech HPA Process. Five (5) Patent Applications have been lodged in Australia, with one (1) application granted – Innovation Patent 2018101228. Two (2) Patent Applications have been lodged in Malaysia. The Patent Applications have been lodged in the name of Altech's wholly owned subsidiary, Altech Chemicals Australia Pty Ltd. Details of each Patent Application are summarised on page 10.

## **Granted Innovation Patent 2018101228**

On 16 October 2018 the Company announced that it had received the Certificate of Grant for its Innovation Patent 2018101228 from the Australian Patent Office (IP Australia), for the Company's method of producing high purity alumina (HPA) from kaolin (aluminous clay). The prescribed process for an Innovation Patent following grant, is that the patent is examined by IP Australia and once the examination is passed, the Innovation Patent is certified then published. IP Australia recently issued its initial examination report for this Innovation Patent (Examination report No. 1).



## Schedule of Patent Applications (cont.)

In the section of the examination report titled “Novelty and Innovative steps”, the innovation and novelty of the Altech HPA Process were queried; the Company has a 6-month period to respond to IP Australia and remove grounds for revocation of the patent, else the Innovation Patent will cease. Interestingly, one of the queries raised in the examination report was the breach of an innovation step previously filed by the Company under the former name of its wholly owned subsidiary, Kaolin2alumina Pty Ltd.

The initial examination determination by IP Australia of the Company's Innovation Patent is not final nor binding, and the Company via its Patent Attorney WRAYS has now respond to IP Australia with further clarification and justification as to the innovation and novelty of the Altech HPA Process. It is the view of the Company and WRAYS that a significant and innovative step of the Altech HPA Process described in the Innovation Patent is the recycling and re-use of HCl gas, which previous patents did not deploy. WRAYS has advised Altech that a response to clarify patent innovation and novelty following an initial Innovation Patent examination is not unusual, and WRAYS has now submitted a response justifying the innovation. The award of a patent to Altech (and its wholly owned subsidiary) for the Altech HPA process is not a condition precedent to draw-down of the KfW IPEX-Bank senior debt (US\$190m).

Number	Country	Type	Title	Priority Date	Status
2014253487	Australia	Standard Patent Application	A Method for the Preparation of Alumina	26/02/2014	Pending Application
2018233001	Australia	Standard Patent Application	A Method for the Preparation of Smelter Grade Alumina	22/09/2017	Pending Application
PI2018704039	Malaysia	Standard Patent Application	A Method for the Preparation of Smelter Grade Alumina	20/09/2018	Pending Application
2018900572	Australia	Provisional Patent Application	A Method for the Preparation of Alumina	22/02/2018	Pending Application
PI2018700927	Malaysia	Standard Patent Application	A Method for the Preparation of Alumina	22/02/2018	Pending Application
2018903911	Australia	Provisional Patent Application	A Method for the Preparation of Alumina	16/10/2018	Pending Application
2018101228	Australia	Innovation Patent Application	A Method for the Preparation of Alumina	22/09/2017	Cert of Grand, 24 Aug'18

## Greenhouse credentials of Altech's HPA process

The Company was recently requested by a “green” investment fund that is mandated to invest in low emissions / energy efficient businesses to identify the energy savings and greenhouse gas reduction of the Altech kaolin-alumina process, compared to the conventional “alkoxide” HPA production process.

The Company conducted a “mine to gate” study and is pleased to report that the project will realise a 46% reduction of greenhouse gases per tonne of HPA using Altech's low energy kaolin-alumina process. Altech's process will have a comparative carbon footprint of 6.6 tonne CO<sub>2</sub> per tonne HPA versus 12.3 tonne CO<sub>2</sub> per tonne HPA for the current standard “alkoxide” process. Altech's project will also realise a 41% reduction of energy consumption per tonne of HPA. Altech's process has a comparative energy consumption of 45 GJ per tonne HPA versus 77 GJ per tonne HPA for the bauxite-aluminium-alkoxide process.

The current industry standard of producing HPA is utilising high grade aluminium metal as a feedstock, dissolving it in alcohol, hydrolysing and calcining back to alumina. This process is called the alkoxide process and is energy intensive. Aluminium metal is a product of the Bayer process, where bauxite is mined and processed to smelter grade alumina. The smelter grade alumina is then fed to energy intensive aluminium refineries to produce aluminium ingots or powder. Current HPA producers cannot use smelter grade alumina to produce HPA due to the sodium impurities, consequently high grade aluminium metal is typically used as feedstock, which is actually then converted back to the alumina state (oxide form) that it started out as.

The Altech kaolin to HPA process uses an ore feedstock that is processed directly to the HPA product in a single step, bypassing the aluminium metal stage. Instead of starting with bauxite, Altech starts with kaolin, an alumina silicate feedstock with very low levels of iron. For this reason, the Altech kaolin to HPA process will be considered highly disruptive to the HPA industry, and estimated at between one third and half the cost of the conventional HPA manufacturing process. The processes are illustrated below.

Figure 4 - Current industry standard to produce HPA (Alkoxide Process)

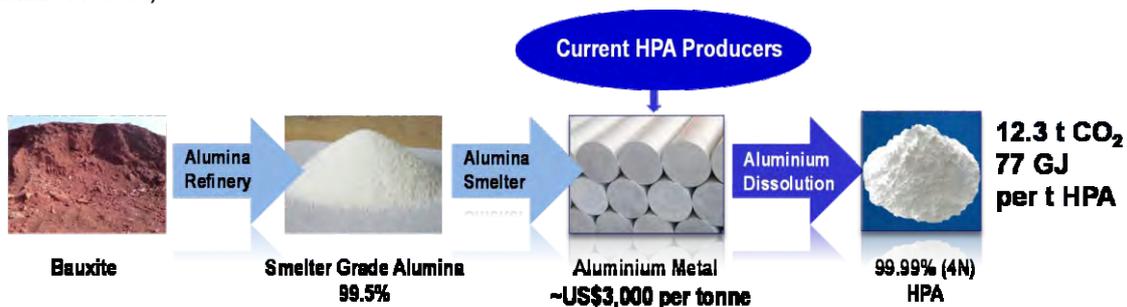


Figure 5 - Altech's Kaolin-HPA Process





**Altech Chemicals**  
Limited

# QUARTERLY REPORT

December 2018

## Company Snapshot

Altech Chemicals Limited (ASX:ATC) (FRA:A3Y)  
ABN 45 125 301 206

### FINANCIAL INFORMATION

(as at 31 December 2018)

Share Price:	\$0.09
Shares:	572.5m
Options:	Nil
Performance Rights:*	28.7m
Market Cap:	\$52m
Cash:	\$4.1m

### DIRECTORS

Luke Atkins	Non-executive Chairman
Iggy Tan	Managing Director
Peter Bailey	Non-executive Director
Dan Tenardi	Non-executive Director
Tunku Yaacob Khya	Non-executive Director
Uwe Ahrens	Alternate Director

### COMPANY SECRETARY/CO

Shane Volk

### HEAD OFFICE

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\*subject to vesting conditions



## Schedule of Tenements

As per ASX Listing Rule 5.3.3, the Company held the following tenements (exploration and mining leases) as at 31 December 2018:

Tenement ID	Registered Holder	Location	Project	Grant Date	Interest end of quarter
E70/4718-I	Canning Coal Pty Ltd	WA Australia	Kerrigan	01/12/2015	100%
M70/1334	Altech Meckering Pty Ltd	WA Australia	Meckering	19/05/2016	100%

### ABOUT ALTECH CHEMICALS LTD (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). 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 Final Investment Decision Study (FIDS) for the construction and operation of a 4,500tpa 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.

### Forward-looking Statements

This report 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 report 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 report 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.

The mezzanine debt term sheet and the stream finance facility term sheet referred to in this report and previous ASX announcements; are indicative in nature; are non-binding; and in both cases contain the general terms of a proposed transaction. Any future binding commitment will be subject to and is contingent upon all internal approvals of the financial institution / facility provider, as well as the completion of due diligence (including but not limited to legal and technical due diligence) and the completion of legally binding documentation. There is no certainty that the mezzanine project debt or that the stream finance facility will be approved or that any transaction/s will be concluded based on what was presented in the term sheets. The Company makes no representations or warranties whatsoever as to the outcome of the mezzanine debt process or the stream finance facility process and/or the success of any future equity raising that may be undertaken to secure the balance of project funds required for the draw-down of senior project debt.

## Appendix 5B

# Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

**Name of entity**

ALTECH CHEMICALS LTD

**ABN**

45 125 301 206

**Quarter ended ("current quarter")**

DECEMBER 2018

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(36)	(37)
(b) development	(537)	(2,769)
(c) production	-	-
(d) staff costs	(309)	(755)
(e) administration and corporate costs	(440)	(919)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	27	65
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Research and development refunds	-	-
1.8 Deposits Paid	(1)	(1)
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(1,296)</b>	<b>(4,416)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(10)	(442)
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) HPA Plant (Stage 1 Construction pre-paid)	(153)	(9,101)

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
2.2 Proceeds from the disposal of:		
(a) property, plant and equipment	-	-
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(163)</b>	<b>(9,543)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	-	21,214
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	-	-
3.4 Transaction costs related to issues of shares, convertible notes or options	-	(1,353)
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings (KfW IPEX-Bank Facility Fees)	(2,109)	(2,109)
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>(2,109)</b>	<b>17,752</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	7,622	261
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(1,296)	(4,416)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(163)	(9,543)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	(2,109)	17,752
4.5 Effect of movement in exchange rates on cash held		
<b>4.6 Cash and cash equivalents at end of period</b>	<b>4,054</b>	<b>4,054</b>

5. <b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1 Bank balances	4,054	7,622
5.2 Call deposits		
5.3 Bank overdrafts		
5.4 Other (provide details)		
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>4,054</b>	<b>7,622</b>

**6. Payments to directors of the entity and their associates**

- 6.1 Aggregate amount of payments to these parties included in item 1.2
- 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

**Current quarter  
\$A'000**

214

Director remuneration (including superannuation contributions) and rent of office premises

**7. Payments to related entities of the entity and their associates**

- 7.1 Aggregate amount of payments to these parties included in item 1.2
- 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3
- 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

**Current quarter  
\$A'000**

## Mining exploration entity and oil and gas exploration entity quarterly report

<b>8. Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
8.1 Loan facilities		
8.2 Credit standby arrangements		
8.3 Other (please specify)		
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

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<b>9. Estimated cash outflows for next quarter</b>	<b>\$A'000</b>
9.1 Exploration and evaluation	-
9.2 Development	(400)
9.3 Production	-
9.4 Staff costs	(320)
9.5 Administration and corporate costs	(420)
9.6 Other (Facility Fee – KfW IPEX-Bank)	(600)
<b>9.7 Total estimated cash outflows</b>	<b>(1,740)</b>

<b>10. Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	<b>Tenement reference and location</b>	<b>Nature of interest</b>	<b>Interest at beginning of quarter</b>	<b>Interest at end of quarter</b>
10.1 Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced				
10.2 Interests in mining tenements and petroleum tenements acquired or increased				

**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.



Sign here: .....  
(Director/Company secretary)

31 January 2019  
Date: .....

SHANE VOLK  
Print name: .....

**Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.