



**Breakaway
Research**

May 2016

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Company Information

ASX Code	ATC
Share Price (09/05/2016)	A\$0.105
Ordinary Shares	177.28m
Options - in the money	2.50m
Options – out of the money	3.60m
Performance Rights	17.30m
Market Cap (Diluted for in money options)	A\$18.88m
Cash (estimated)	A\$2.00m
Notional cash on in money option conversion	A\$0.25m
Total Debt	A\$0m
Enterprise Value - Diluted	A\$16.63m

Directors and Management

Non-Exec Chairman	Luke Atkins
Managing Director	Iggy Tan
Non-Exec Director	Dan Tenardi
Non-Exec Director	Peter Bailey
Non-Exec Director	Tunku Dato' Ya'acob bin Tunku Tan Sri Abdullah
Alternate Director	Uwe Ahrens
Company Secretary	Shane Volk

Company Details

Address	Suite 8, 295 Rokeby Rd Subiaco, WA 6008
Phone	+61 8 6168 1555
Web	Altechchemicals.com

Top Shareholders

Lake McLeod Gypsum Pty Ltd	14.04%
Melewar IIC Limited	9.56%
Mr. Dan Tenardi	4.90%
Judith Melissa Tan	3.03%
NSW Mineral (Aust)	2.92%
Top 20	52.47%
Board and Management	23.49%

1 Year Price Chart



Altech Chemicals (ATC)

Excellent Progress on the Finance and Offtake Front

*Recommendation: Maintain Speculative BUY
Midpoint Price Target of \$0.50/share*

Company Update

Key Points

- **Financing well advanced with signing of key agreements with banks and the German Export Credit Agency**
- **Offtake agreement signed with Mitsubishi Australia Ltd for 100% of first 10 years HPA production**
- **High quality aluminous clay feedstock source at Meckering in WA owned 100% by Altech**
- **Proposed plant operations in southern Malaysia – low operating and capital cost environment**
- **Expected simple permitting by virtue of the project size and relatively benign nature of the processing**
- **Recent \$1.94 million placement to sophisticated investors and SPP to be used for final engineering design**
- **Board and Management with broad technical experience in the alumina and chemicals industry, and significant holdings in the Company**

Altech Chemicals (ASX: ATC, "Altech") has recently updated its Bankable Feasibility Study ("BFS") as a result of ongoing optimisation activities on its proposed High Purity Alumina ("HPA") specialty chemicals operation, and is now concentrating on permitting and sourcing funding for the estimated A\$100 million capital required to develop the project.

Financing activities have been considerably advanced with the signing of agreements with the KfW IPEX-Bank ("KfW") and Euler Hermes (German Export Credit Agency "ECA"); and the signing of a 10 year offtake agreement with Mitsubishi Australia Limited ("Mitsubishi").

We continue to rate Altech as a SPECULATIVE BUY, with a revised midpoint indicative price target of \$0.50/share, equating to a company valuation of \$89 million. Our view is that the key share price catalyst will be securing funding for the development of the project.

Company Overview

Altech is an ASX-listed mineral and chemical processing company focused on the development of an HPA production operation, to enter into what is forecast as a rapidly growing market driven largely by the increased demand for HPA products from LED lighting and computer chip manufacturers and sapphire glass from electronics industries.

Altech owns significant aluminous clay resources in Western Australia, which it has demonstrated represents a suitable high quality, low impurity feedstock for the proposed HPA production process. Plans are to mine the clay at Altech's 100% owned Meckering deposit, some 130km east of Perth, and then ship the material for beneficiation and processing at the proposed HPA production plant at the Tanjung Langsat Industrial Complex ("TLIC") in Johor, southern Malaysia.



Company Update

Substantial Progress

Significant progress made on the proposed HPA operation

Altech has made significant progress on the development of its proposed HPA operation since our August 2015 update note.

Key events include (in chronological order):

This includes excellent progress on offtake and debt financing

- Appointment of GM – Operations (September 14, 2015)
- HPA sales agreement with Mitsubishi for Japanese market (September 24, 2015)
- Securing of Johor land for HPA plant (September 30, 2015)
- \$1.0 m share placement completed (October 20, 2016)
- Board appointments – Tunku Dato' Ya'acob bin Tunku Tan Sri Abdullah, Uwe Ahrens (October 23, 2015)
- Bulk kaolin mining agreement finalised with Dana (October 30, 2015)
- Kaolin beneficiation plant to be located at Johor (November 16, 2015)
- Exclusive project financing mandate with KfW (December 2, 2015)
- LOI from Euler Hermes for ECA credit cover to US\$40 million (December 10, 2015)
- Grant of Kerrigan exploration licence (December 8, 2015)
- Appointment of HPA sales and marketing agent, China (January 6, 2016)
- Termination of Dana kaolin mining agreement (March 9, 2016)
- Finalisation of HPA plant site lease, Johor (March 15, 2016)
- BFS update (March 16, 2016)
- M+W Group formalised as EPC contractor (March 16, 2016)
- \$1.2m placement and SPP (March 24, 2016)
- Legal challenge to kaolin termination (March 29, 2016)
- Commencement of grade control drilling at Meckering (April 1, 2016)
- \$0.744 raised in SPP (April 12, 2016)
- Global offtake agreement for 100% of HPA production for first 10 years with Mitsubishi (April 27, 2016)
- Sale of tenement to Dana for \$2 million, settling legal dispute.

Considerable advances have been made in financing, including the signing of the offtake agreement with Mitsubishi, and agreements with KfW and Euler Hermes. Key technical activities have included updating of the DFS, commencement of grade estimation drilling at Meckering and the decision to site the kaolin beneficiation plant in Malaysia.

On the fund raising side, the Company has raised \$2.2 million via placements and an additional \$744,000 from a SPP since our last update.

Financing and Offtake

Finalising financing is now one of the key hurdles to development of the HPA Project, with the Company making considerable progress in this regard.

Offtake agreement with Mitsubishi for 100% of the first 10 years production

The key advances have been on the debt funding side, and comprise agreements with KfW IPEX-Bank, Euler Hermes (ECA cover) and an offtake agreement with Mitsubishi for all of the first 10 years of production from the proposed Malaysian HPA plant. The offtake agreement mirrors the estimated ramp up of production, commencing at 2,700t in year 1, ramping up to 4,000tpa from years 5 to 10 inclusive.



This global agreement follows on from a sales and distribution agreement for the Japanese market only, as announced on September 24, 2015, and will underpin debt financing arrangements.

The Project falls under the purview of German ECA debt insurance cover

Given that the majority of the plant and equipment (and the appointment of M+W Group as EPC providers) is planned to be sourced from German and European Union manufacturers, debt financing for the HPA Project falls under the purview of German ECA debt insurance cover, with it being estimated that ~US\$40 million of debt will be covered under these provisions, out of the estimated US\$60 million debt that the US\$79 million project will support.

To that end Altech has signed an exclusive mandate with KfW to provide structuring and advice in relation to provision of senior debt, and the German ECA agent, Euler Hermes, as announced to the market on December 10, 2015, has provided an LOI confirming in principal support for providing ECA cover.

KfW has extensive experience in providing debt finance to mining and chemical projects globally, with such debt generally being provided at attractive interest rates and for long terms.

The next stage is the preparation of a formal application for the ECA cover, which is to be followed by detailed project due diligence by Euler Hermes.

Update to Bankable Feasibility Study

Original robust BFS released in June 2015

The Company released its BFS to the market on June 29, 2015, which was completed ahead of the anticipated timing of Q3, 2015. The financial outcomes indicate a robust project that, at 4,000tpa of 4N HPA, would make Altech, at 2016 global production rates, the largest single HPA producer – the results are presented in our August 2015 research report.

Meckering and TLIC locations



Source: Adapted from Altech



As announced to the market on March 16, 2016, the Company has completed an update to the BFS, with this incorporating the relocation of the proposed kaolin beneficiation plant from Meckering to the plant site in Johor, Malaysia.

Inputs and financial outputs from the update are presented in the tables below.

Updated BFS Financial Outcomes

A recent update to the BFS has increased both the IRR and NPV

4,000tpa HPA Project	US\$ (Millions)	
	Updated BFS	Original BFS
Project Capital Costs	78.7	76.9
Revenue p.a.	92.0	92.0
Operating Costs p.a.	36.3	32.6
EBITDA p.a.	55.7	59.4
Net Present Value	357.5 (9%)	326.1 (10%)
Payback	3.7 years	3.8 years
IRR	33.3%	30.3%
NPV/Capex Ratio	4.54	4.24
Gross Margin on Sales	61%	65%

Source: Altech

Updated BFS Inputs

	Updated BFS	Original BFS
Project Life	30 years	30 years
Annual HPA Production (at full rate)	4,000tpa	4,000tpa
USD:AUD (capex & construction)	0.70	0.78
USD:AUD (operations)	0.80	0.90
HPA Sales Price (per kg)	US\$23.00	US\$23.00
Discount Rate	9%	10%

Source: Altech

Kaolin Beneficiation Plant Optimisation

Kaolin beneficiation plant to be located in Malaysia

As part of the ongoing project optimisation, the Company has made the decision to locate the beneficiation plant in Johor. This will result in lower operating and capital costs, which will more than offset the higher transport costs. Operating and capital cost savings will come about through having a simpler plant, with beneficiated product being able to be fed directly into the HPA plant, obviating the requirement to dry and bag samples for transport. Mined material will be able to be loaded directly into shipping containers for transport to Malaysia.

Operating costs in Malaysia are lower due to significantly lower energy and labour charges. In addition, the plant will be smaller due to being able to be run 24 hours/day, as opposed to the proposed 12 hours at Meckering.

Johor Land Secured

The HPA plant site in Johor has been secured

As announced to the market on September 30, 2015, Altech has reserved a 4 hectare site in the Tanjung Langsat Industrial Site in Johor for its HPA plant. The finalisation of the 30+30 year lease was announced on March 15, 2016, with an initial deposit and interim payments due throughout 2016.

As mentioned in our previous notes, the site is in an area reserved for chemical industries, with Tanjung Langsat being marked by the ready availability of services, infrastructure, reagents and a skilled work force. The Company estimates that operating costs in Malaysia are some 40% below those in Australia.

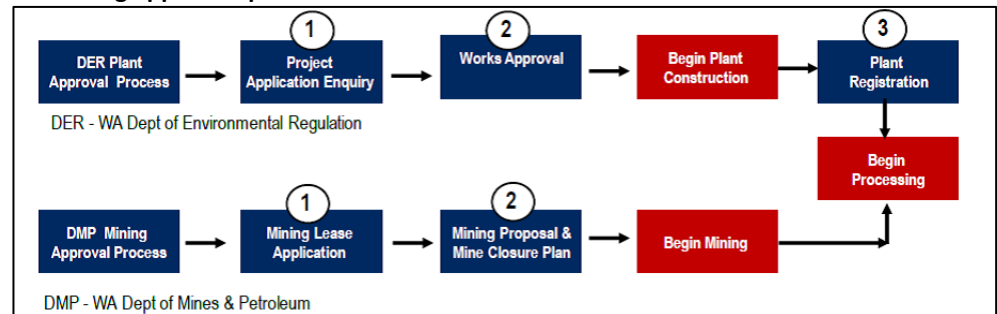


Permitting

Permitting is ongoing at both the Australian and Malaysian sites, with this expected to be completed by the end of 2016. Although originally targeted for the end of 2015, the decision was made to hold off on this until the design for the plant was finalised – this was due to the decision to move the beneficiation plant from Meckering to Johor. This will not result in any delays to the project given that the timeframe to development is determined by the financing.

An outline of the Meckering approvals process is shown in the figure below.

Meckering approvals process



Source: Altech

The Company has lodged the Mining Lease (“ML”) application with the DMP and the Project application has been accepted by the DER. The next stage of the DER approvals process is a Works Approval application.

The ML application is the first step in the DMP approvals process. Following grant of the ML, a Mining Proposal and Mine Closure Plan then needs to be lodged, which, upon approval, will allow mining to begin. The ML application is currently before the Mining Warden, with submissions from the Company and landholder having been heard.

Also, given the small size of the proposed operation, a full Environmental Impact Assessment (“EIA”) will not be required – the Company is also of the view that there will be no environmental impediments to the proposed operations.

Similarly, permitting at the TLIC in Malaysia is expected to be relatively straight forward. The Company has received approval from the Department of Environment (“DOE”) for its Preliminary Site Assessment (“PAT”), in effect confirming that the proposed site and use are compatible with gazetted land use guidelines.

In addition, the DOE, in its response to the PAT, confirmed that based on the plant’s proposed output of <100tpd an EIA will not be required. The next stage of the environmental approval process will include the approval and registration of air pollution control systems, chimneys and fuel burning equipment.

Board, Management and Partner Appointments

Altech has continued to engage personnel since our last update, building on the experienced team already in place.

These appointments include (listed in chronological order of announcement to the market):

- **GM - Operations** – As announced on September 14, 2015, Dr Jingyuan Liu has been appointed as GM Operations for the Malaysian HPA plant. Dr Liu has over 20 years’ experience in project management, process and equipment design in the minerals and chemicals industry in Australia and internationally with leading

Given the nature of both the Meckering and TLIC operations, permitting should be relatively straight forward

The Company continues to build an experienced team



companies. He holds a PhD in Chemical Engineering from the University of Newcastle.

- **Board Appointments** – Two representatives of major shareholder Melewar International Investment Company Limited (“Melewar”) were appointed to the Board as non-executive directors in October 2015 following completion of Tranche 2 of the placement in which Melewar participated. These include Tunku Dato’ Ya’acob bin Tunku Tan Sri Abdullah and Mr Uwe Ahrens.
- **Sales and Marketing Manager (China)** – In early January the Company appointed Mr Martin Ma as Sales and Marketing Manager (China). Mr Ma has extensive experience in the sales and marketing of high purity feedstocks to Chinese industries such as the lithium battery and electric vehicle sectors.
- **Malaysian EPC** – The appointment of M+W Group, a Stuttgart based global engineering and construction business with extensive Asian experience was formalised in March 2016, which also marks the formal commencement of the final detailed engineering phase of the HPA Project.

Miscellaneous

Miscellaneous events related to the HPA Project include grade control, drilling (21 aircore holes have been completed) at Meckering, and the grant of the Kerrigan exploration licence.

Kerrigan is another potential HPA feedstock supply source

The Kerrigan exploration licence E70/4718, covers some 480km² of freehold land 20km south of the wheat belt town of Hyden, and some 335km south-west of Perth. The licence includes the Kerrigan JORC-2004 compliant Inferred Resource of 85 million tonnes at 85.1% brightness kaolinite. The Company plans to follow up previous work completed by CRA Exploration, and depending upon results, Kerrigan may be suitable as complementary feedstock for the HPA plant in Malaysia.

Kerrigan location



Source: Altech



Other Projects

No work has been carried out on the Company's other projects.

Capital raisings
totalling ~\$3 million

Capital Raising & Funding

The Company completed two capital raisings totalling ~\$3 million during the period. This included the second tranche of the share placement to significant shareholder, Melewar, in October 2015, with Melewar subscribing for a total of 16.95 million shares at \$0.059/share over the two tranches.

A second placement was made to sophisticated and professional investors in March 2016, which raised \$1.2 million through the issue of 14.26 million shares at a price of \$0.086/share. This was followed up by an SPP, which raised a further \$0.744 million, through the issue of 8.6 million shares at \$0.086/share.

Supplementing its capital raising activities, Altech recently disposed of a non-core exploration tenement at Meckering for a \$2.0 million cash payment. The sale, to Athens based Dana Shipping and Trading S.A. (Dana), also resolves the dispute between Dana and the Company about the termination of the Kaolin Mining Rights Agreement in March 2016.

Key activities now
include permitting and
securing project
funding

Upcoming Activities

Critical activities now include finalising funding and completing permitting (as outlined above) of the HPA Project to allow it to progress to development, with the planned timeline shown below. The recent placement has also allowed detailed design work to commence.

HPA Project Timeline

Altech Chemicals Limited	2016				2017				2018			
OVERALL PROJECT SCHEDULE	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Debt Project Funding												
Funding Due Diligence												
Finalise BFS Design												
Detailed Design												
Equity Project Funding												
Order Long Lead Items												
Site Piling												
Meckering Approvals												
Meckering Campaign Mining												
Meckering Construction												
Meckering First Shipment												
Malaysia Approvals												
Malaysia Construction												
Malaysia Commissioning												
First HPA Product												

Source: Altech

We have updated our
indicative valuation –
our midpoint is now
\$0.50/share

Valuation

We have updated our indicative valuation of Altech, with a risked Company value of between \$40.5m and \$137.8m, and a midpoint of \$89.1m. This is an increase of some 100% on our August 2015 valuation.

This equates to an undiluted price range of \$0.23 to \$0.78 per share, with a midpoint of \$0.50/share, a 400% premium to the current share price. The valuation for the HPA Project, as in our initiation note and last update, is a composite of pre-tax DCF and EBITDA multiples, with a 7.5x EBITDA multiple being used.

Changes to our valuation have come from updating inputs in our indicative DCF model to



reflect those as published in the BFS update (except that we have used an 8% discount rate instead of the Company's 9%). In addition we have increased the risk weighting for the HPA Project from 10% to 20% to reflect the ongoing de-risking of the project.

Indicative Valuation

Item	Risk Multiple	Total Value (m)			Per Share Undiluted			
		Low	Mid	High	Shares	Low	Mid	High
HPA	20.0%	\$37.0	\$85.6	\$134.3	177.28	\$0.209	\$0.483	\$0.757
SW Titanium	100%	\$1.00	\$1.00	\$1.00	177.28	\$0.006	\$0.006	\$0.006
Constance Range	100%	\$0.00	\$0.00	\$0.00	177.28	\$0.000	\$0.000	\$0.000
Cash (est)	100%	\$2.50	\$2.50	\$2.50	177.28	\$0.014	\$0.014	\$0.014
Total	N/A	\$40.51	\$89.14	\$137.8	177.28	\$0.228	\$0.503	\$0.777

Source: Breakaway Analysis

Breakaway's View

Altech is headed by Mr. Iggy Tan, who has extensive experience in the chemicals industry (including in specialty chemicals) and has a track record of building projects. Altech has taken a measured approach to the Project, and continues to deliver results as promised.

Altech has continued to make steady progress, including on financing

The Company has made considerable progress in financing since our August 2015 note, with the agreements signed with KfW, Euler Hermes and Mitsubishi. The Mitsubishi offtake agreement is particularly vital, in that it underpins the Project economics for the first ten years, and thus should significantly aid attracting financing.

In addition the LOI from Euler Hermes is a strong vote of confidence in the HPA Project, with a rigorous process being applied before an LOI is issued – the bulk of applications that get to this stage will gain final ECA cover approval.

Although the updated BFS improved the project economics, we consider these not to be overly significant – the original BFS was robust (including an NPV to capex ratio of 4:1, and the ability to absorb 20% negative movements in key inputs), and part of the improvement in the NPV in the update came about through decreasing the discount rate from 10% to 9%.

A summary of key project risks are given below – these are largely the same as those presented in our update report.

- **Funding Risk** – This still remains the key risk, however the signing of the recent finance and offtake agreements has partly mitigated this.
- **Resource Risk** - We see only minor resource risk – the previously defined aluminous clay resources are more than adequate to meet the Company's requirements for the foreseeable future.
- **Technology Risk** - We still see this as being the main technical risk in the project; however ongoing work, including the optimisation studies and the successful pilot scale production of 4N HPA has continued to de-risk this facet of the Project. Although most components of the proposed flow sheet are well understood and proven processes, there is a significant jump to take this to a full blown commercial operation.
- **Market Risk** – This risk has now largely been discounted by the signing of the 10 year, 100% of product offtake agreement with Mitsubishi. Available forecasts suggest a strong market for HPA, albeit with slightly decreasing prices due to



technological improvements in the production process.

- **Permitting Risk** - Permitting is a perennial consideration in any resources and industrial development. This is mitigated at both potential sites – Western Australia is a mining friendly jurisdiction, and the small scale of the proposed Meckering aluminous clay mine should be a positive in the approvals process. The Company also has a number of other suitable aluminous clay resources. In Malaysia, the proposed location of the HPA plant in an established industrial park which is host to a number of chemical industries and the relatively small scale of the operation has also been shown to be a positive for the Malaysian permitting process. This is also mitigated by the generally benign nature of reagents, products and waste.

We continue to rate Altech as a SPECULATIVE BUY, with a mid-point price target of \$0.50/share

Given the above, we continue to rate Altech as a medium term **Speculative Buy** with a midpoint valuation risked for the project stage of \$0.50/share – we note that this valuation is at a significant premium to the current price – this largely reflects the current market conditions and the need for the Company to secure project financing.

Our view is that securing project financing will be the catalyst for share price moves.



Analyst Verification

We, Grant Craighead and Mark Gordon, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

Disclosure

Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of Altech and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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