Altech Chemicals Limited ASX: ATC FRA:A3Y

Company Presentation

Iggy Tan
Managing Director

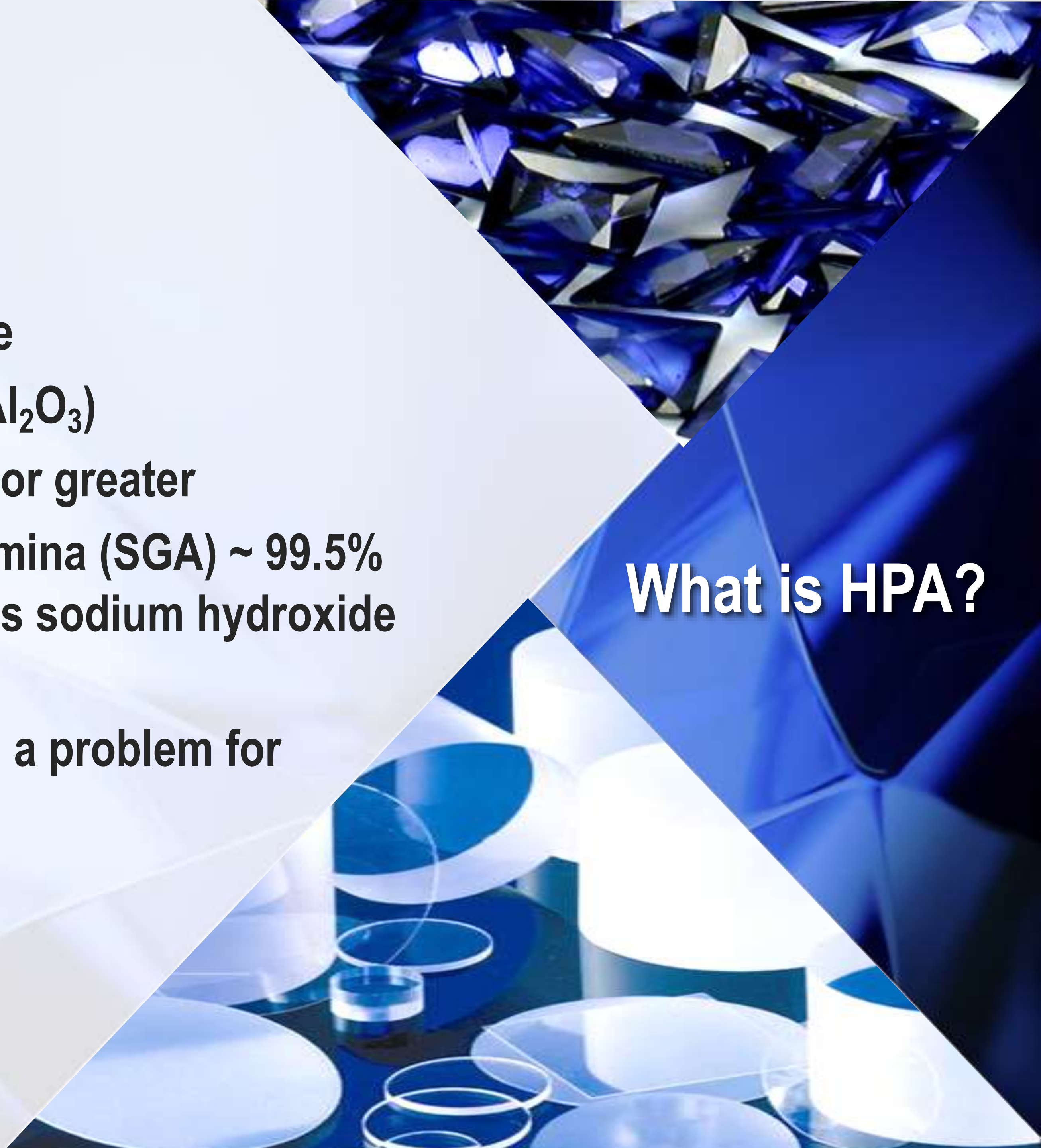
Altech Chemicals Limited

4,500 tpa High Purity Alumina Plant

Altech Chemicals Limited

What is HPA?

- Sapphire gemstone
- Purified alumina (Al_2O_3)
- 99.99% (4N) purity or greater
- Smelter Grade Alumina (SGA) ~ 99.5% Bayer Process uses sodium hydroxide (NaOH)
- Sodium impurity is a problem for downstream users



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HPA substrate for LEDs

High price for purity

Smelter Grade Alumina
SGA 99.5%
US$400 per t

High Purity Alumina
HPA 99.9% (3N)
US$6,000 per t
US$9,000 per t

High Purity Alumina
HPA 99.99% (4N)
US$15,000 per t
US$40,000 per t

High Purity Alumina
HPA 99.999% (5N)
>US$50,000 per t

Our Target Business

4N HPA produces synthetic sapphire glass

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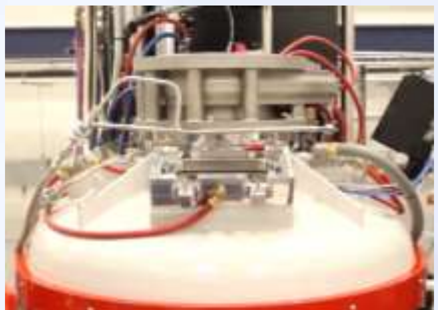
LEDs & LITHIUM-ION BATTERIES

Sapphire Furnace (2,000° C)



Sapphire Crystal Boule

Sapphire Wafer

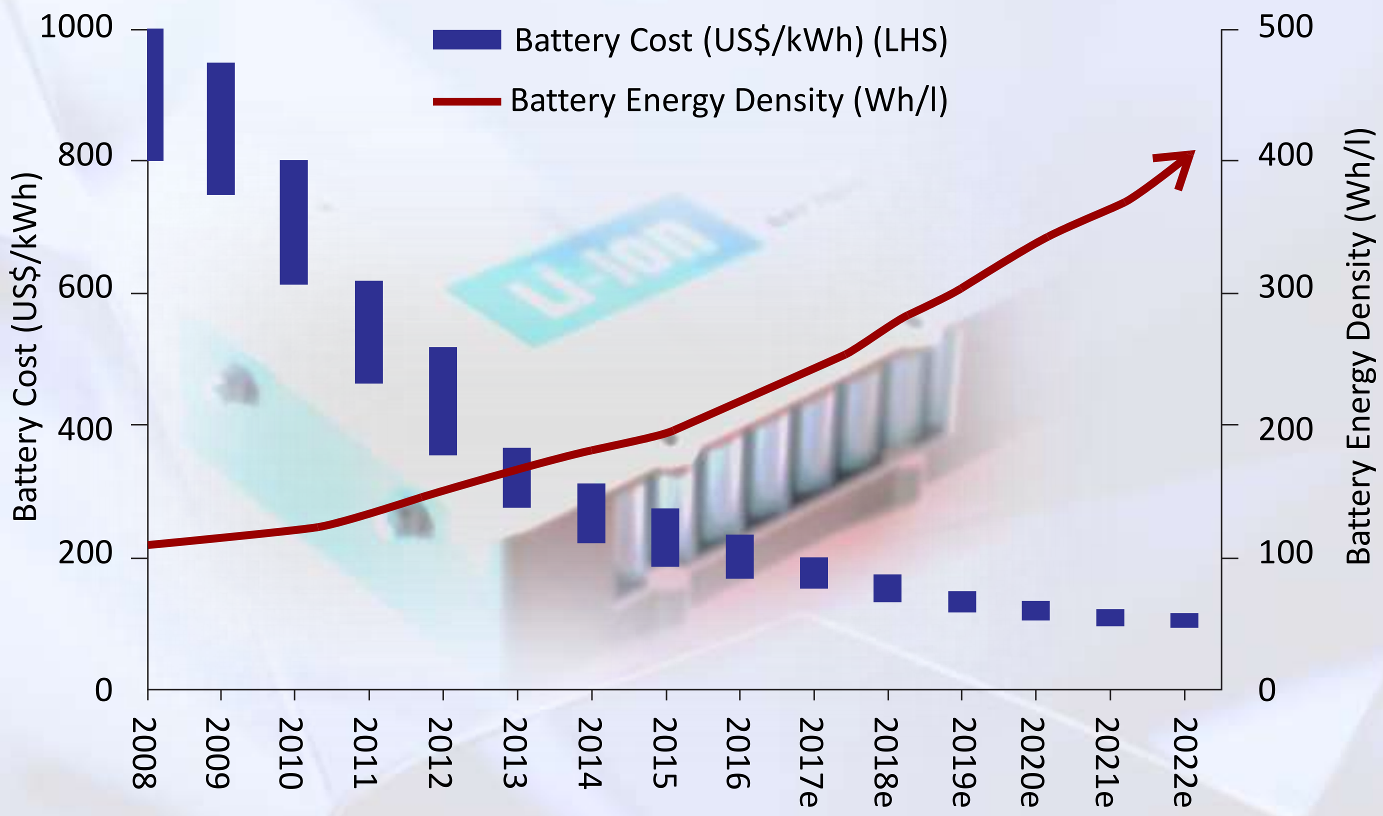
LEDs

Nano Powder

Separator Coatings

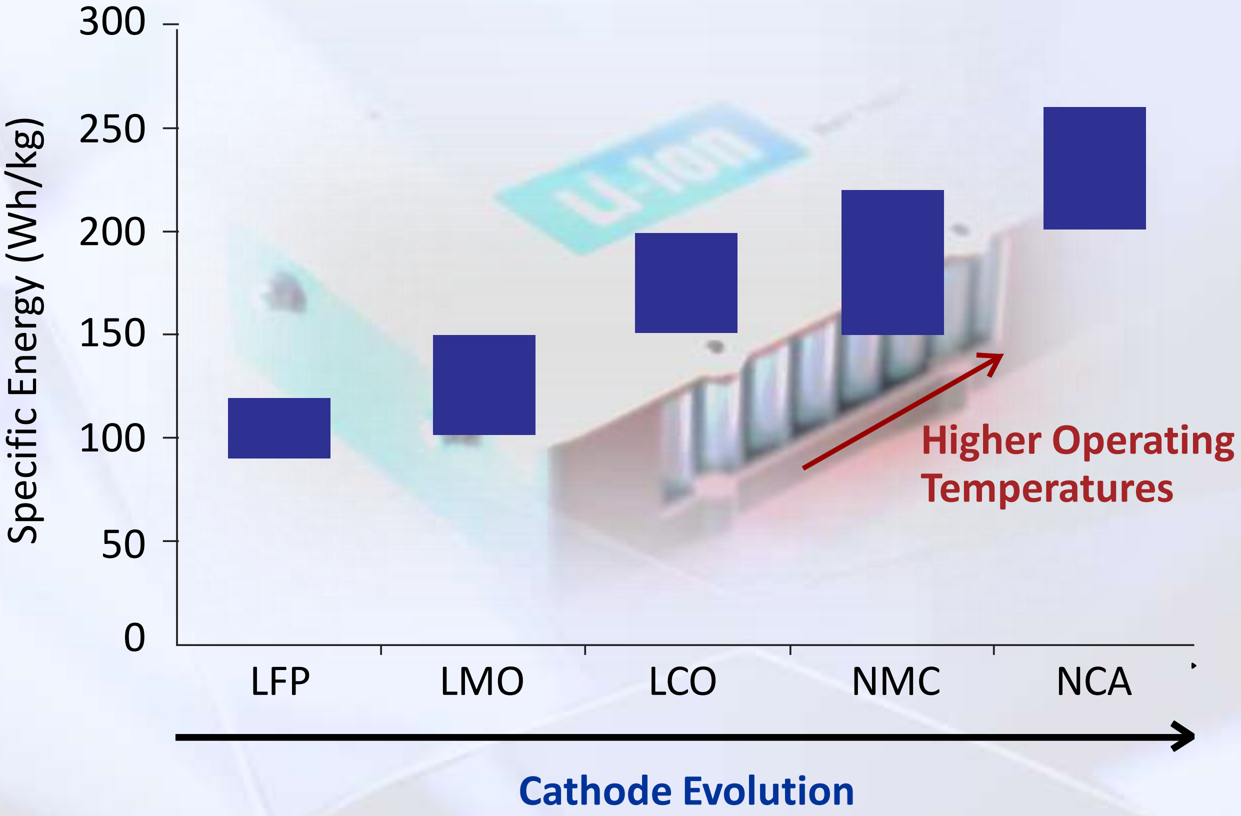
LITHIUM ION BATTERIES

Battery Energy Density



Battery costs are reducing due to increased energy density

Battery Energy Density vs Temp



Cathode changes – higher operating temperatures

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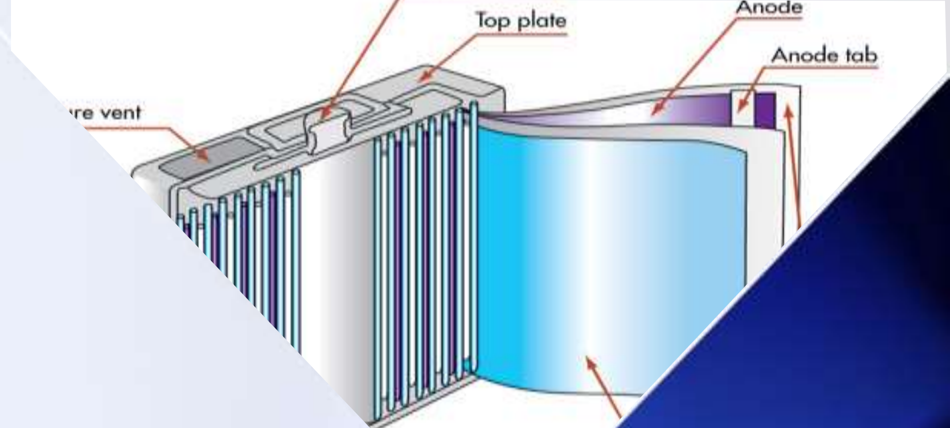
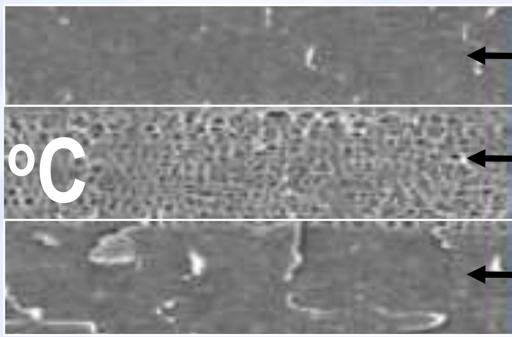


HPA required for higher temps

Normal Polymer Separators

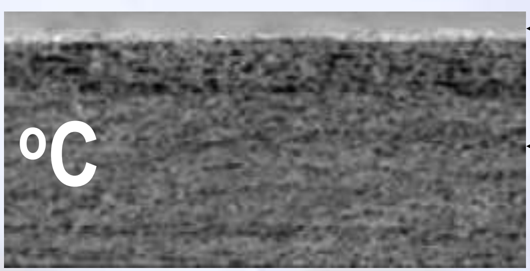


<135 °C

Polypropylene (PP) 155 °C

Polyethylene (PE) 135 °C

Polypropylene (PP) 155 °C



>200 °C

HPA layer

Polymer membrane

HPA Coated Separators (HPACS)

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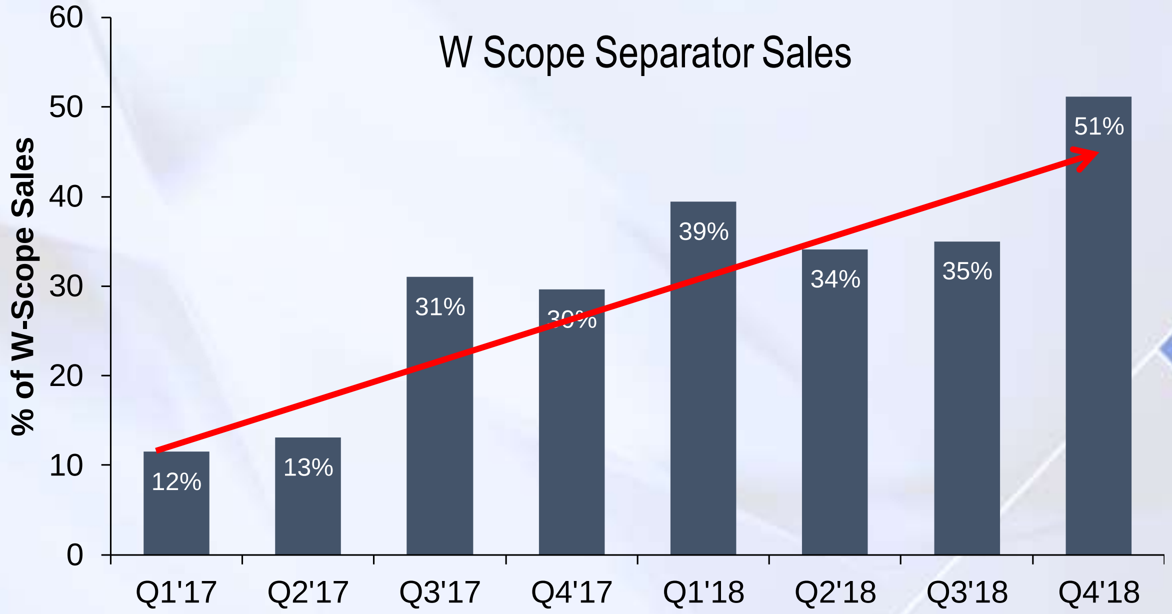
HPA Coated Separators



SCOPE

Japanese separator manufacturer reports
40% HPA coated separators
12% only 24 months ago

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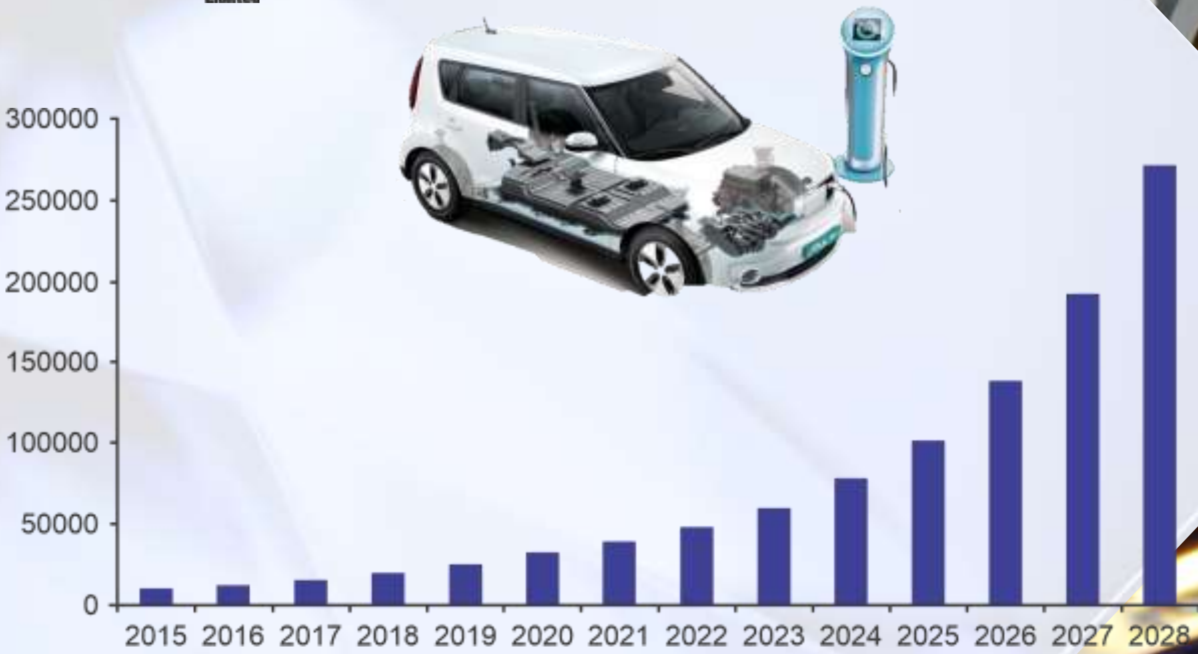
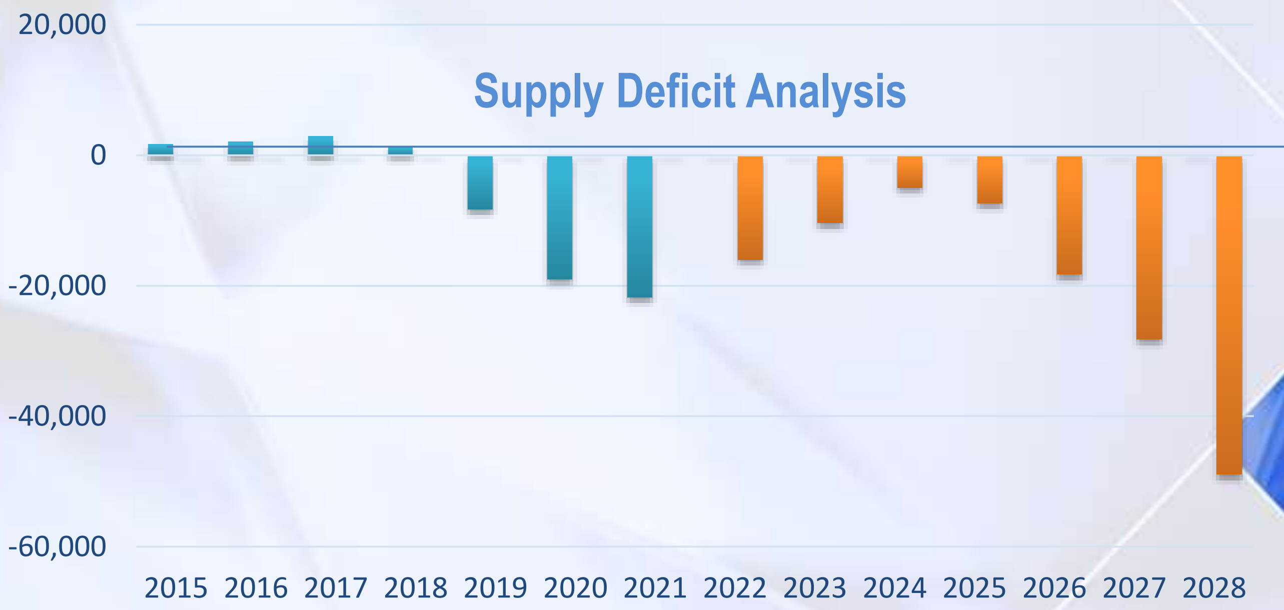
HPA Demand CRU



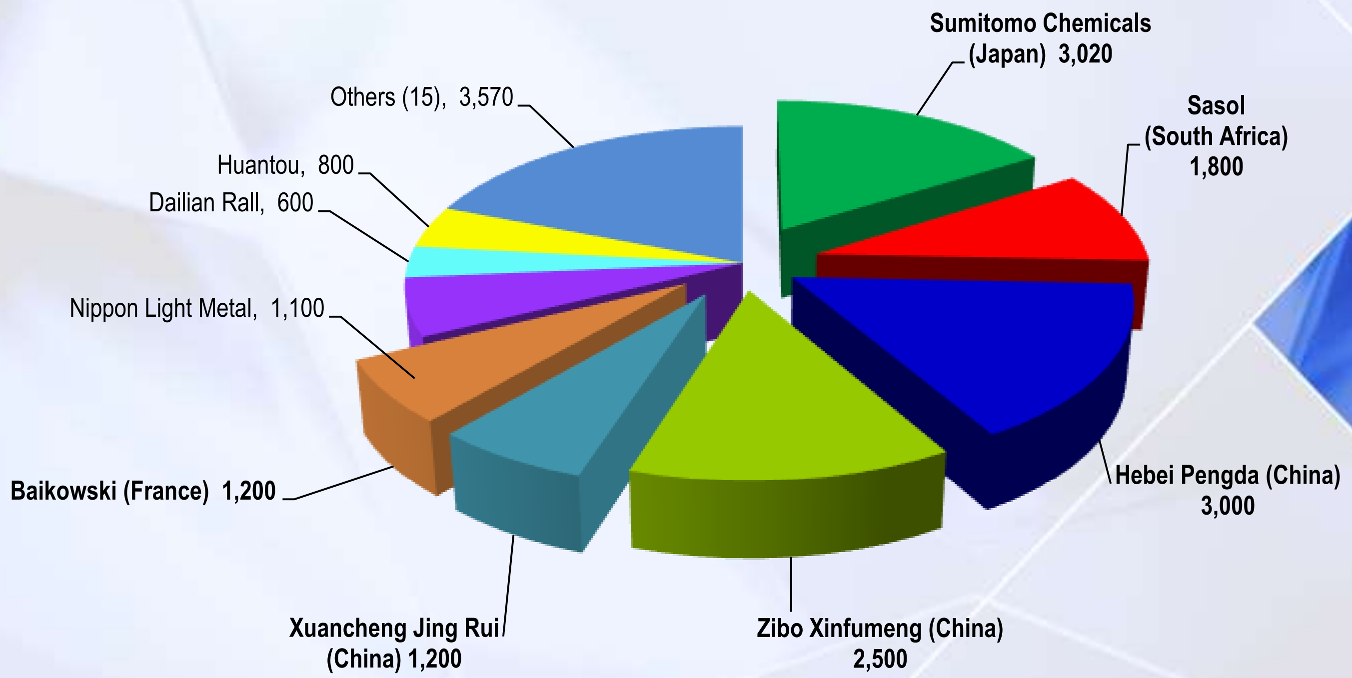
- **272,000 tpa by 2028**
- **LIB separators 68%**
- **LEDs demand 32%**



CRU warns of significant supply deficit

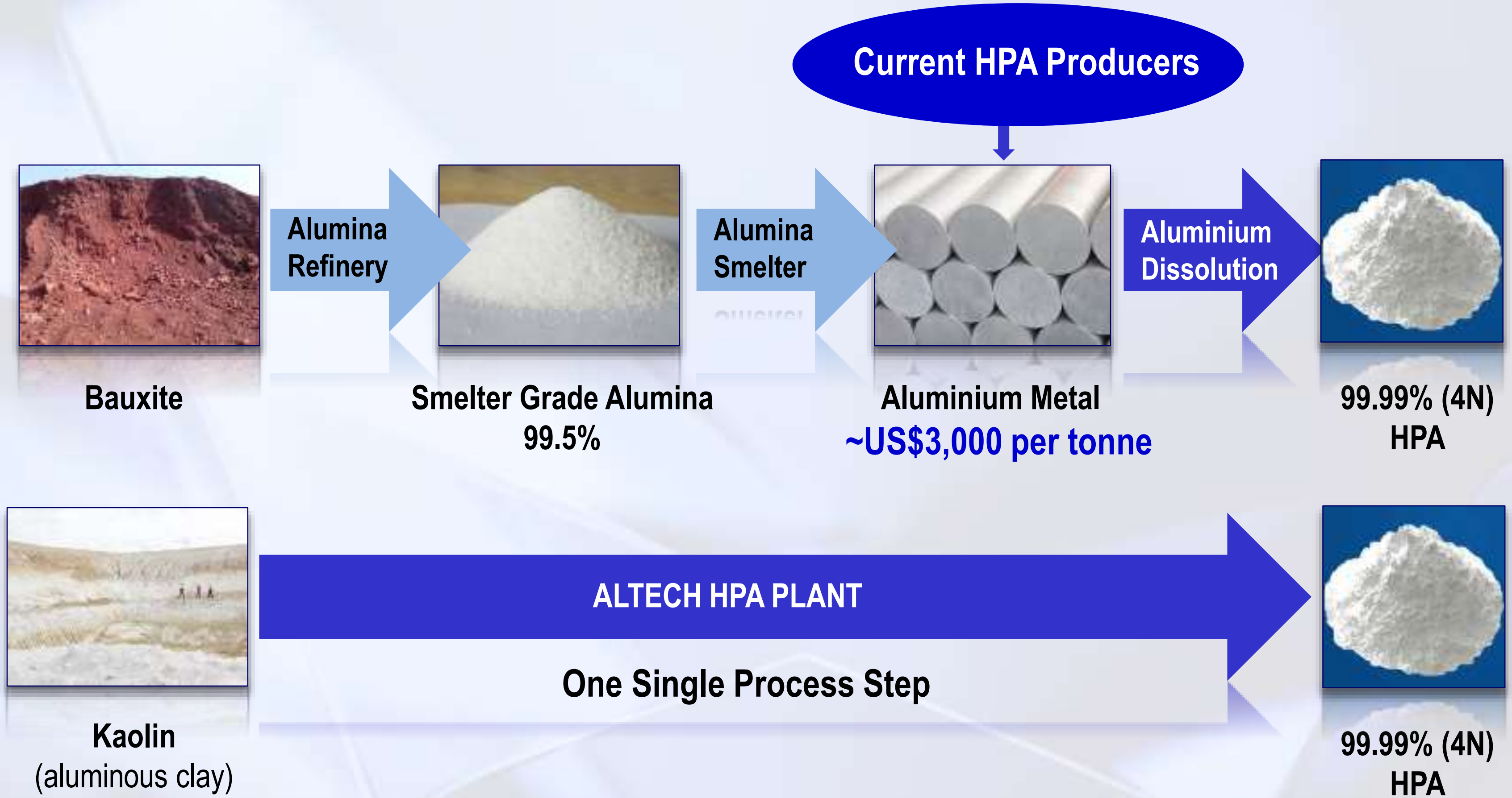
- Supply deficit of 20,000 tpa by 2021
- Peaking in 2028 at 50,000 tpa
- New entrants 3-4 years behind

Current HPA Producers



Source: Technavio Research

Altech's Differentiation



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- Very low iron (Fe) due to weathering
- 12.7Mt JORC Mineral Resources^ (250 yrs)
- Meckering, Western Australia

%	Bauxite Darling Range*	Altech Kaolin *
Al_2O_3	34.5	30.0
SiO_2	21.5	57.9
Fe_2O_3	21.2	0.4
TiO_2	2.00	0.7
K_2O	0.24	0.2
NaO	0.005	0.01

Typical bauxite deposit

Altech's kaolin deposit

Low-Impurity Kaolin Feedstock

^ Measured Resources 1.5Mt @ 30% Al2O3, Indicated Resources 3.3Mt @ 30% Al2O3, Inferred Resources 7.9Mt @ 29.1% Al2O3

Typical Mean Analysis

^ JORC (2012) Mineral Resources (refer ASX Announcement 11 October 2016); the Company is not aware of any new information or data that materially affects the information included in this announcement and confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

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- Mining approval granted
- Works approval granted
- Simple free dig mining
- Campaign mining, 2 months - 3 years feed
- Then just sea container loading operation

Meckering Kaolin Deposit West Aust

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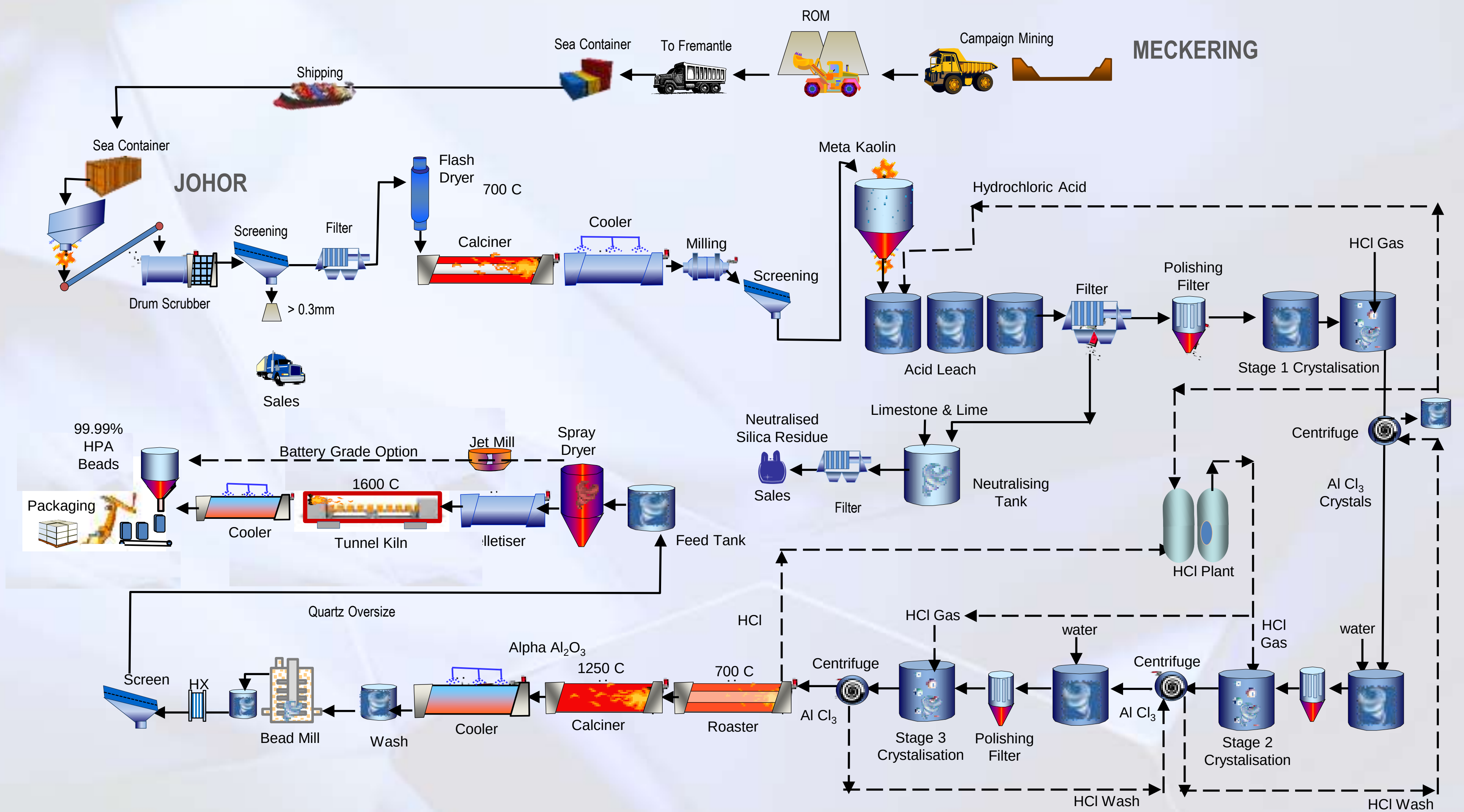
Limited

- Chemical-zoned industrial park
- 60% lower operating costs
- HCl plant nearby
- All services available
- 5-10 year corporate tax free
- No radioactive waste

HPA Plant Johor, Malaysia


HCl Plant
Crystallisation
Leach & Neutralisation
Fine Sand
Kaolin Calcination
Roasting & Calcination
Kaolin Beneficiation
Kaolin Receival
Maintenance
HPA Finishing Plant
Final Product
Administration
Control Room
Lab
TNB Substation
Main Station
Gatehouse
Car Park
Gat
e

Altech's Patented HPA Process



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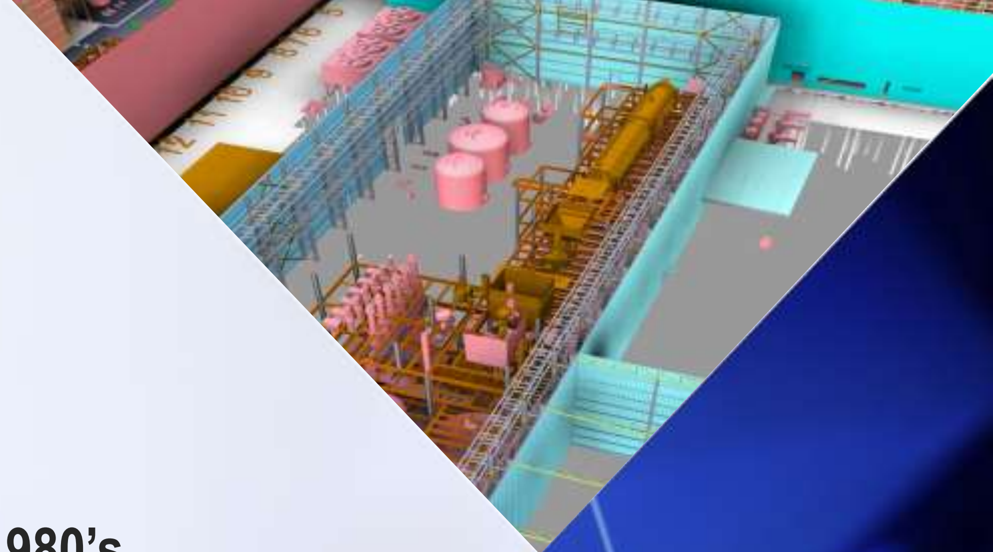
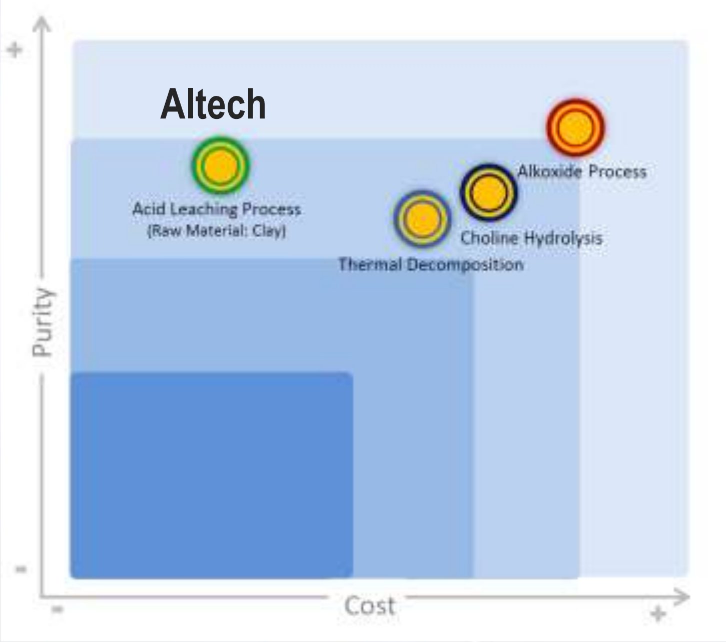


Established Proven Chemistry

- Chemistry by Swiss in 1900s
- USA & Alcoa developed further 1980's
- No demand for HPA in 1980's
- New HPA growth demand (LEDs LIBs)
- Altech applied chemistry to Meckering
- Very successful, disruptive, lowest cost
- One patent granted, 8 pending

Altech Chemicals Limited

- Our advantages
  1. We own our feedstock
  2. Main reactant HCl re-used
  3. Plant in low cost country (Malaysia)



Source: Persistence Market Research "High Purity Alumina Market – Global Industry Analysis and Forecast 2016-2024"

Bottom Quartile for Op Costs

Altech's Green HPA process

- Doesn't use Al metal
- 46% reduction of greenhouse gases
- Uses 41% less energy than conventional
- Use of LEDs worldwide
- Reduction of 77 mil t CO_2 pa

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Mitsubishi 10 year off-take

- 10 year exclusive off-take agreement
- Mitsubishi has downstream customers
- Altech gets paid ex gate
- Price is at prevailing market price
- Strategic focus for Mitsubishi


MS group

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- SMS group – German EPC contractor
- Lump sum turn key contract
- Completion and cost risk
- Throughput guarantee
- Process & quality guarantee
- Committed US$ 15 mil equity

Lump Sum Turn Key Contract

SMS group

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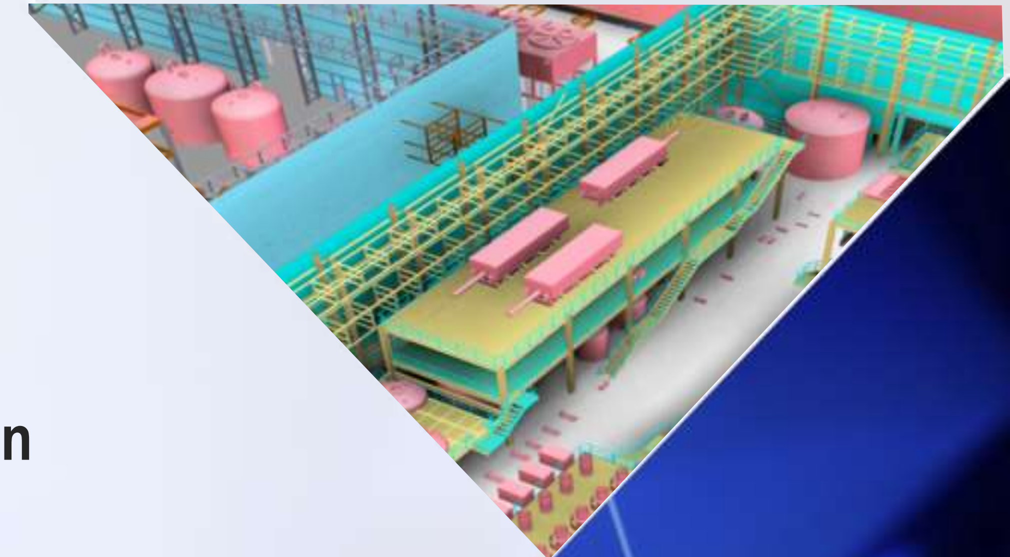
- Lots of “fat” in design assumptions
- Using 79% instead 90% Utilisation
- Using 60% instead 90% Recovery
- Using 30% instead 34% head grade
- 3 Yr ramp up instead of 2 Yr
- Possibility of 6,000 tpa

Aiming to Under-promise Over-deliver

Economics FIDS Equity Model

- Pre-tax $NPV_{7.5}$ US$ 505 million
- Payback (full rate) 3.9 years
- EBITDA US$ 76 million p.a.
- Capital cost US$ 298 million*
- Production Costs - US$ 8.55 /kg
- LT Sale Price - US$ 26.9/kg
- Gross Margin – 68%



* Pre Financing Costs

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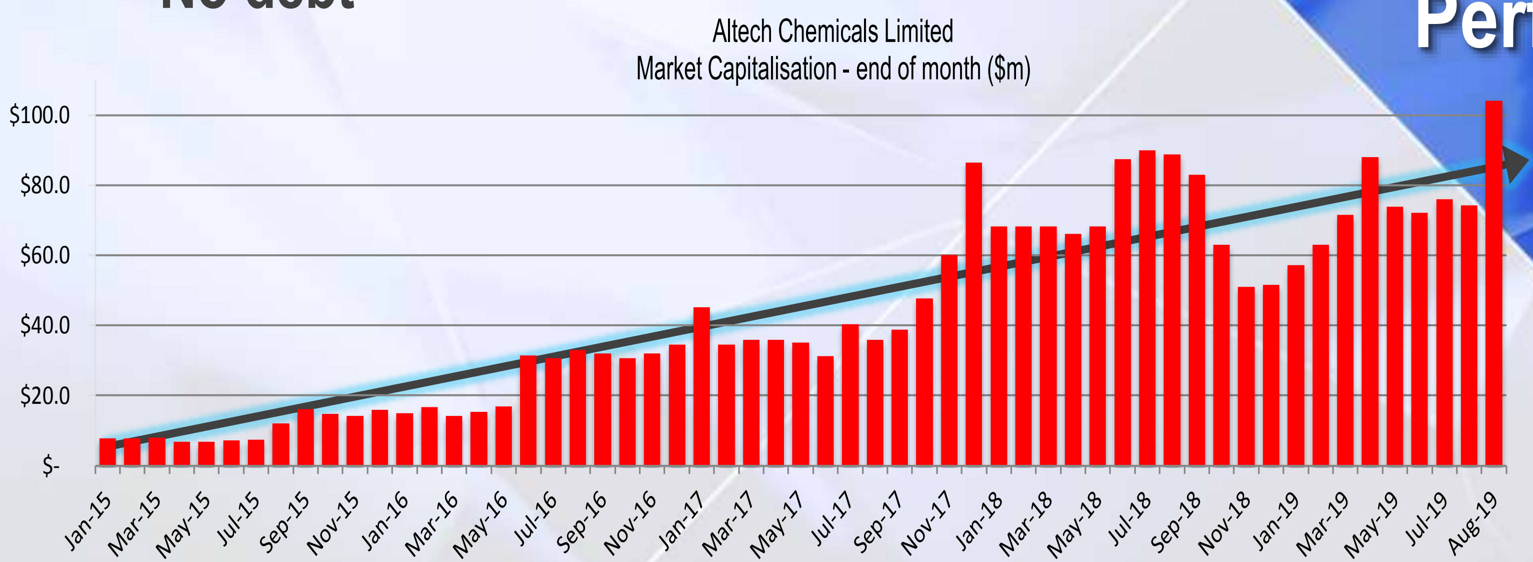
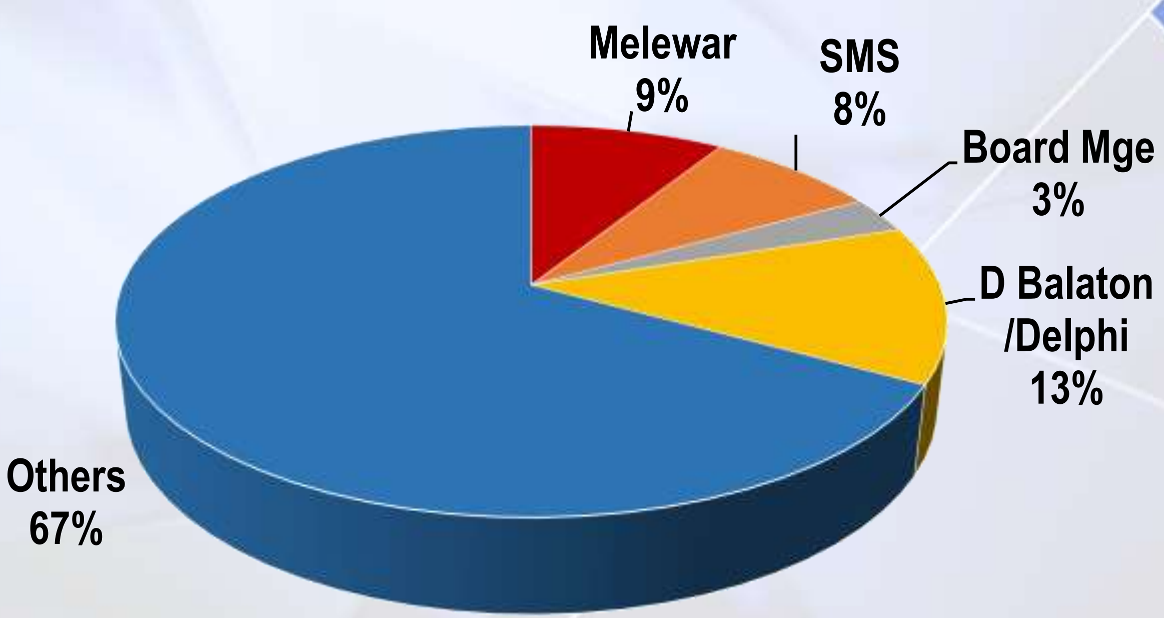
- 14 x market cap growth (5 years)
- Ave trade value $2k/day to $350k/day
- Mar Cap of $104m - 743 m shares
- Cash $8.2 m end June
- No debt

Altech Steady Growth Performance



Quality Shareholders

- Melewar Group – Malaysia
- Deutsche Balaton – Germany
- SMS Group – Germany




KfW

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- Senior debt funding - KfW IPEX-Bank
- Germany's state bank
- Total debt of US$ 190 million
- US$ 170 million export credit finance
- 50% of plant – German suppliers
- Low interest, long tenure
- 18 months of due diligence

Senior Debt Completed

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Macquarie Mezzanine Debt In Progress

- Indicative non binding US$90m
- Technical DD by Worley Parson completed
- Market DD by CRU completed
- Internal financial modelling done
- Legal due diligence to commence
- 14 months of DD so far

Stage 1 & 2 Construction underway

Site Retaining Walls

Underground Process Water Tanks

Maintenance Workshop Building

German Project Equity Strategy
Altech Advanced Materials AG

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Europe Battery Industry

- Europe major battery industry
- Capacity of 147 GWh by 2024
- Stringent 2020 EU CO_2 emission (95g/km)
- Push to EVs by European car manufacturers
- Less reliant on Asia
- VW retooling 16 factories

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- EV's models set to triple, next 3 years
- 214 electric and plug-in hybrid models
- Investment of €145 billion in electrification, and "battery making

Europe Launches Multibillion-Euro Initiative For Electric Car Batteries

Dave Keating Contributor

Energy

EVs sales are exploding in Europe

Altech Chemicals Limited

- Invitation Saxony State Gov, Germany
- Consider building 2nd plant there
- Schwarze Pumpe Industrial Area
- Various government grants available
- Focussed on first HPA plant, however
- HPA supply deficient – need to start planning

Saxony Invitation 2nd Plant

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Two Options

1) Sell 49% to strategic joint venture partner for US$100m
(various work streams in progress)
2) Raise US$100 m and sell 49% German listed company
(AAM strategy in progress)

Project Equity Financing

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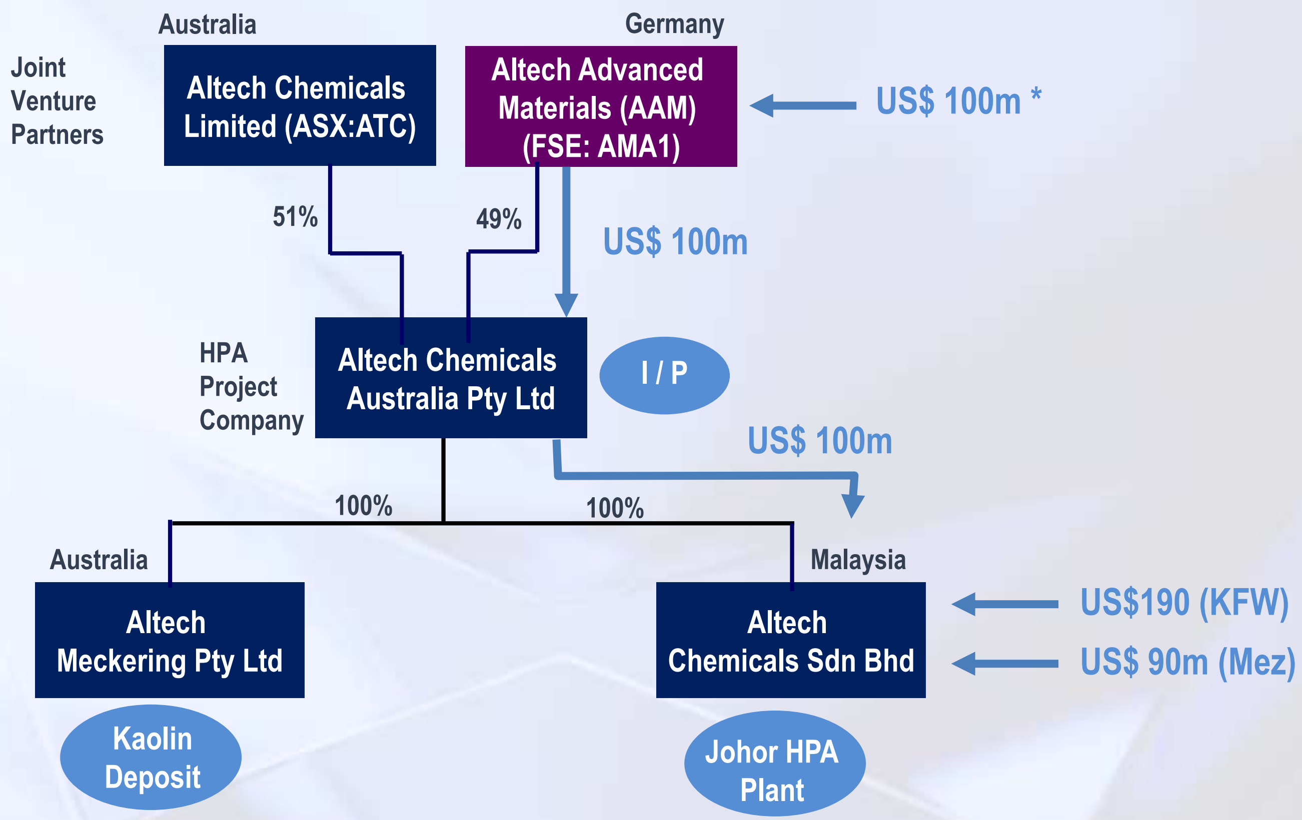
- Altech Advanced Materials AG (AAM)
- Access European investor market
- AAM will be 49% JV partner of project
- Guarantees 15% pa return after year 6
- ATC will buy-back 49% of project for US$230m
- AAM right to cancel buy-back (upside)

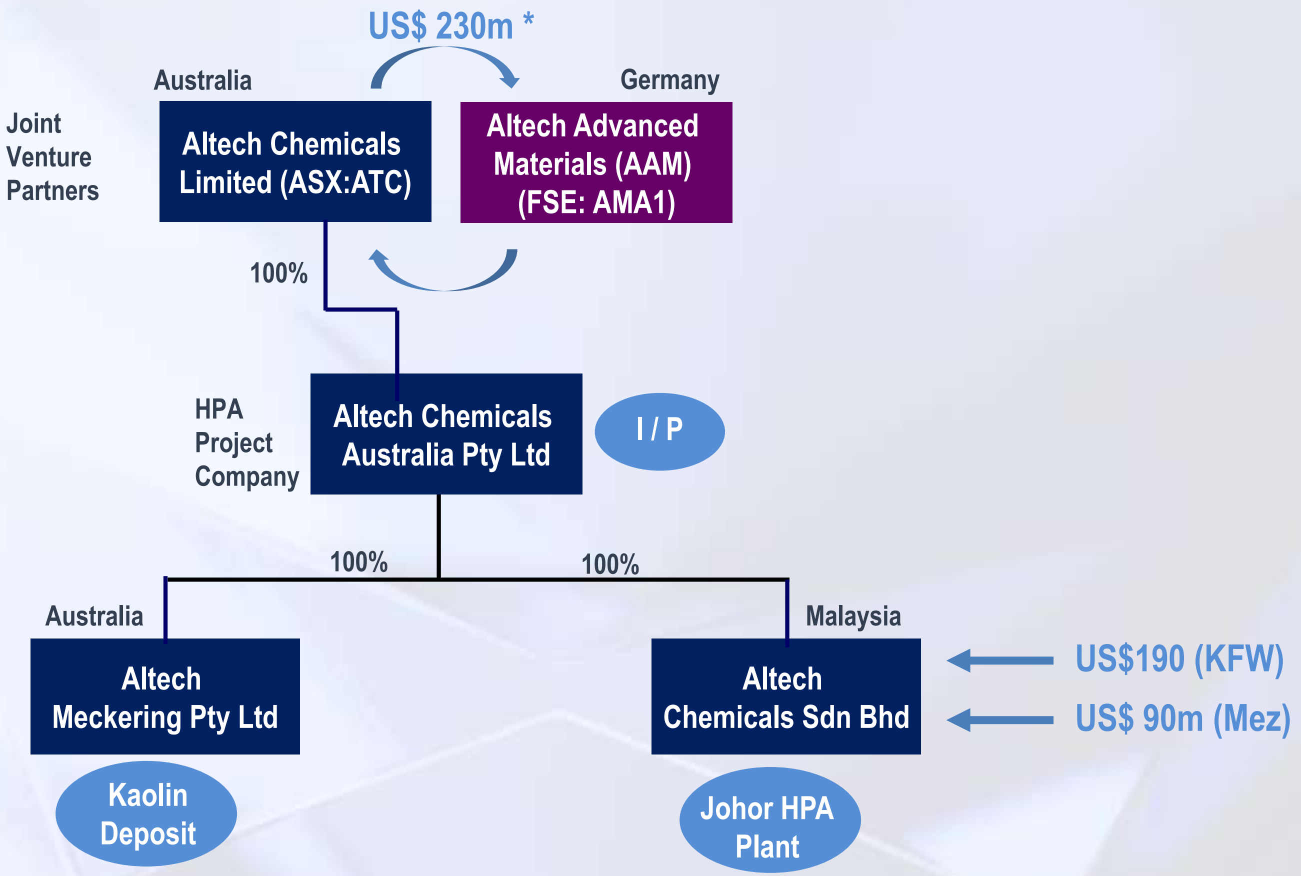
US$100 m European Capital Raising

AAM Capital Raising & JV Structure



* Min 10% direct HPA project interest threshold (US$20.4 million) up to a maximum of 49% direct HPA project interest for US$100 million.
* If less than US$20.4 million, AAM may elect to subscribe to Altech Chemicals Ltd shares (at a 15% discount) rather than direct interest in the project.

Buy back after Year 6

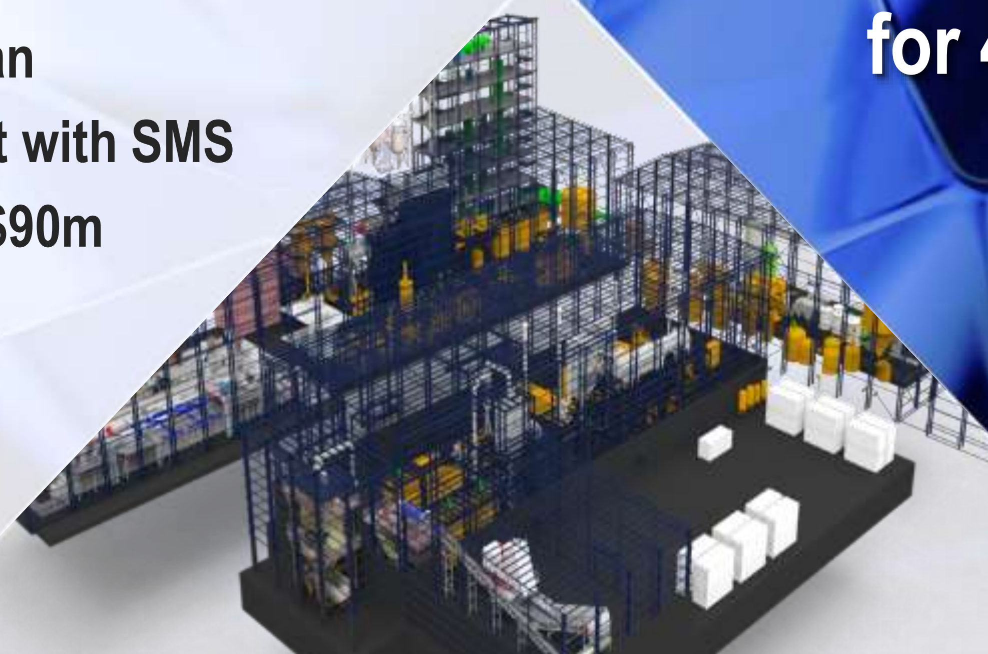


* AAM may cancel its sell-back obligation at any time by paying a nominal cancellation fee of $10k to Altech Chemicals Limited thereby retaining its HPA project interest
* Altech Chemicals has the option to buy back the 49% stake earlier at a price that delivers an annual return to AAM of 15% pa.
* AAM has equal right to cancel the early buy back by paying a nominal cancellation fee of $10k to Altech Chemicals Limited

Altech Chemicals Limited

- Altech (51%) has invested A$60m to date
- 5 year development effort
- 250 year mine life deposit
- I / P & process technology
- Mitsubishi 10-year off take
- KfW US$190m senior loan
- Fixed price EPC contract with SMS
- Mez debt term sheet US$90m
- Buy back guarantee

US$100m Valuation for 49%



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Right Place

Right Time

Right Feedstock

Right Technology

Thank you

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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 our 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.

The mezzanine debt facility terms referred to in this ASX announcement are indicative in nature; are non-binding; and contain the general terms of proposed a transaction. Any future commitment for the facility will be subject to and is contingent upon all internal approvals of the financial institution as well as the completion of detailed due diligence (including but not limited to HPA market, legal and technical due diligence) and legally binding documentation and senior lender agreement. There is no certainty that the mezzanine project debt finance will be approved or that a transaction will be concluded based on what is contemplated in the term sheet. The Company makes no representations or warranties whatsoever as to the outcome of the mezzanine debt finance process.

Competent Persons Statements – Meckering Kaolin Deposit

The information in this announcement that relates to Mineral Resources and Ore Reserves is extracted from the report entitled “Maiden Ore Reserve at Altech’s Meckering Kaolin Deposit” released on 11 October 2016; the report is available to view on the Company’s website www.altechchemicals.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.