Altech Chemicals Limited (ASX:ATC)

Company Presentation
Gold Coast Investment Showcase

Iggy Tan
Managing Director

Altech Chemicals
Limited

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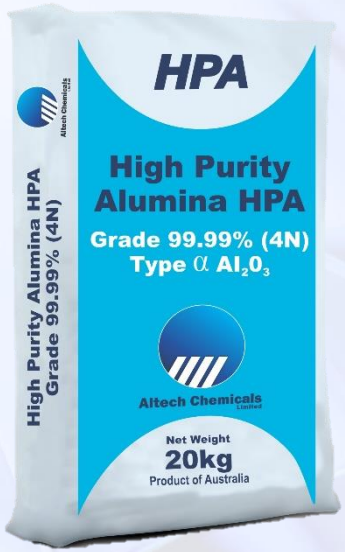
Our Vision

To be a world leading producer of high purity alumina (HPA)



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- Sapphire & Ruby - natural form of high purity alumina (HPA)
- Formed by mother nature like diamonds
- Colour from impurities
- Extremely hard – no. 9 on Mohs scale
- Third hardest mineral behind diamond
- Scratch-resistant artificial sapphire glass made from HPA

Sapphire Gemstone

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What is HPA?

- Purified alumina (Al_2O_3)
- Greater than 99.99% (4N) purity
- Maximum allowable impurities of 100ppm
- Smelter Grade Alumina (SGA) ~ 99.5% (5,000 ppm impurities mainly sodium)
- Bayer Process uses sodium hydroxide (NaOH)
- Sodium impurity is problem for electronics industry
- Alumina has been used for decades
- Corrosion, abrasion, heat, electrical resistance

SGA – Smelter Grade Alumina

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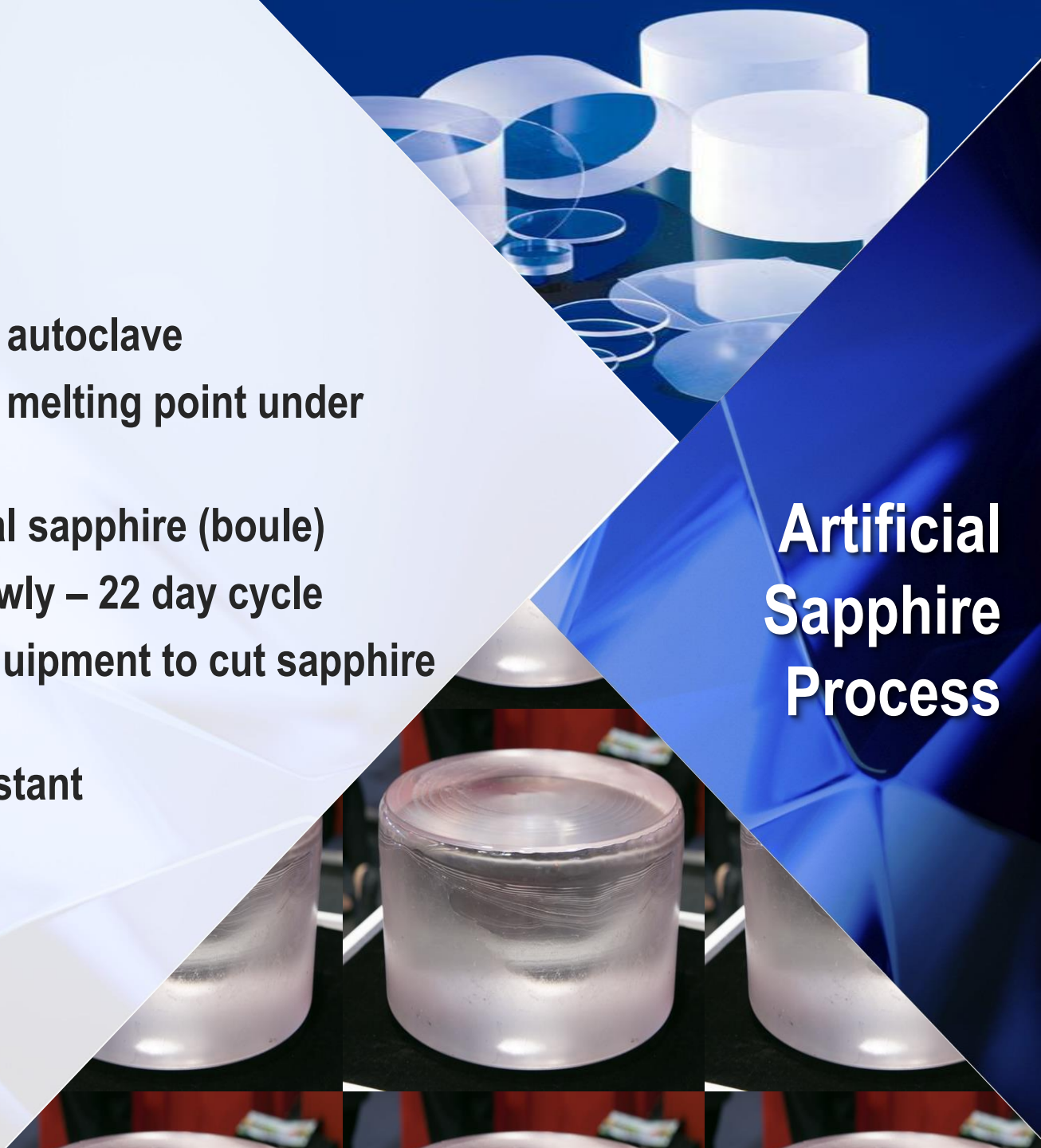
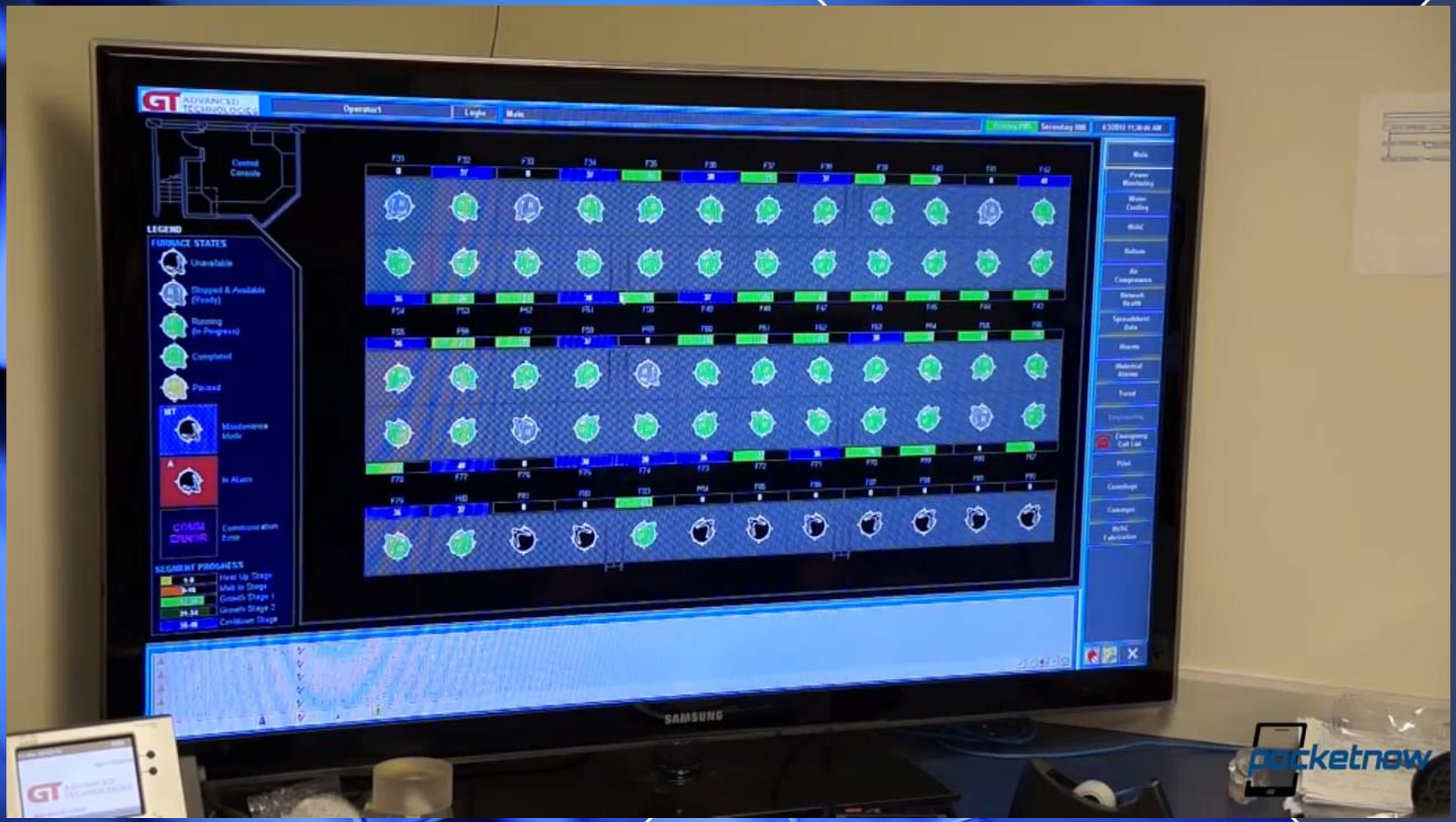
Artificial Sapphire Process

- HPA is placed in an autoclave
- Heated to >2,000^{o}C melting point under intense pressure
- Forms single crystal sapphire (boule)
- Allowed to cool slowly – 22 day cycle
- Diamond cutting equipment to cut sapphire shapes
- Heat & scratch resistant




GT ADVANCED TECHNOLOGIES
Operator1
Logout
Main
Control Console
LEGEND
FURNACE STATES
Unavailable
Stopped & Available (Ready)
Running (In Progress)
Completed
Paused
Maintenance Mode
In Alarm
COMM ERROR
SEGMENT PROGRESS
Heat Up Stage
Melt In Stage
Growth Stage 1
Growth Stage 2
Cooldown Stage
SAMSUNG
pocketnow

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Smelter Grade Alumina	High Purity Alumina	High Purity Alumina	High Purity Alumina
SGA 99.5%	HPA 99.9% (3N)	HPA 99.99% (4N)	HPA 99.999% (5N)
$0.4 per Kg	$1 -10 per Kg	$10-50 per Kg	$50-150 per Kg

Our Target Business

HPA substrate for LEDs

HPA in Sapphire Crystal Glass

High Price for Purity

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Welcome to the World of HPA

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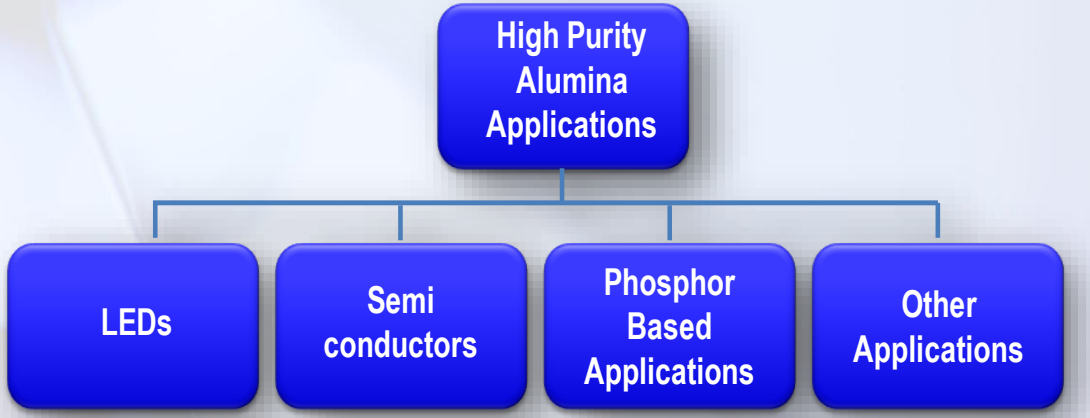
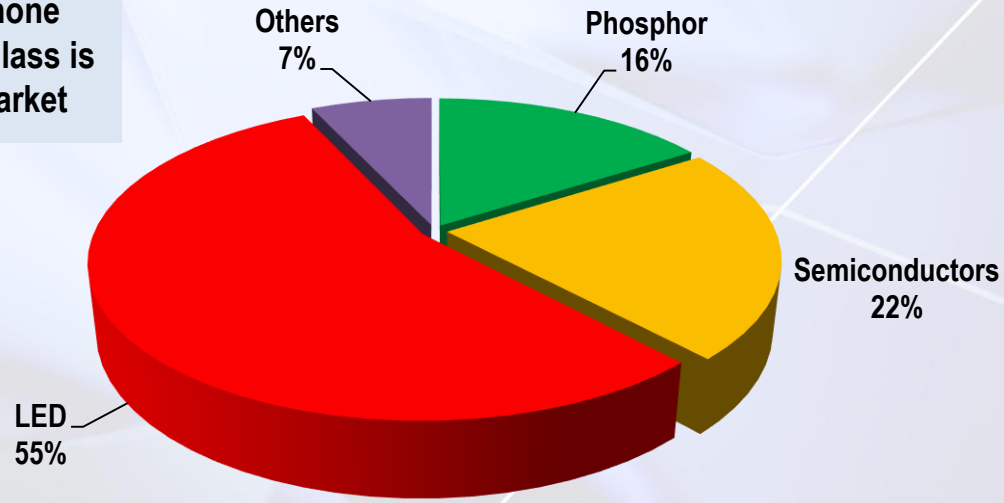
Uses of HPA 99.99% 4N



Smartphone sapphire glass is a new market



Source: Technavio Research "2014-2018 Global High-purity Alumina Market"

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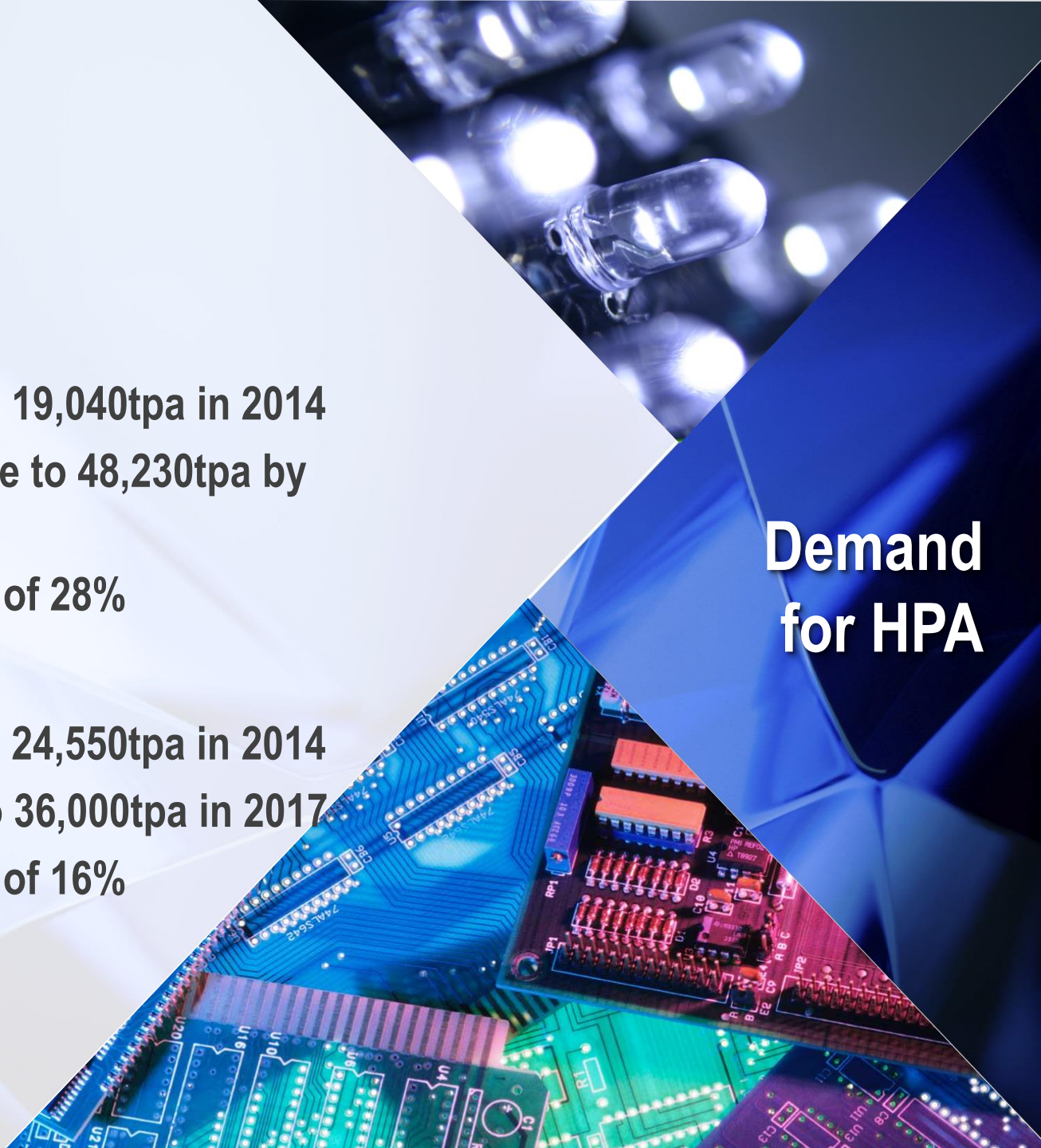
Demand for HPA

Technavio Research

- Global HPA demand 19,040tpa in 2014
- Expected to increase to 48,230tpa by 2018
- Growing at a CAGR of 28%

QY Research

- Global HPA demand 24,550tpa in 2014
- Expected to grow to 36,000tpa in 2017
- Growing at a CAGR of 16%



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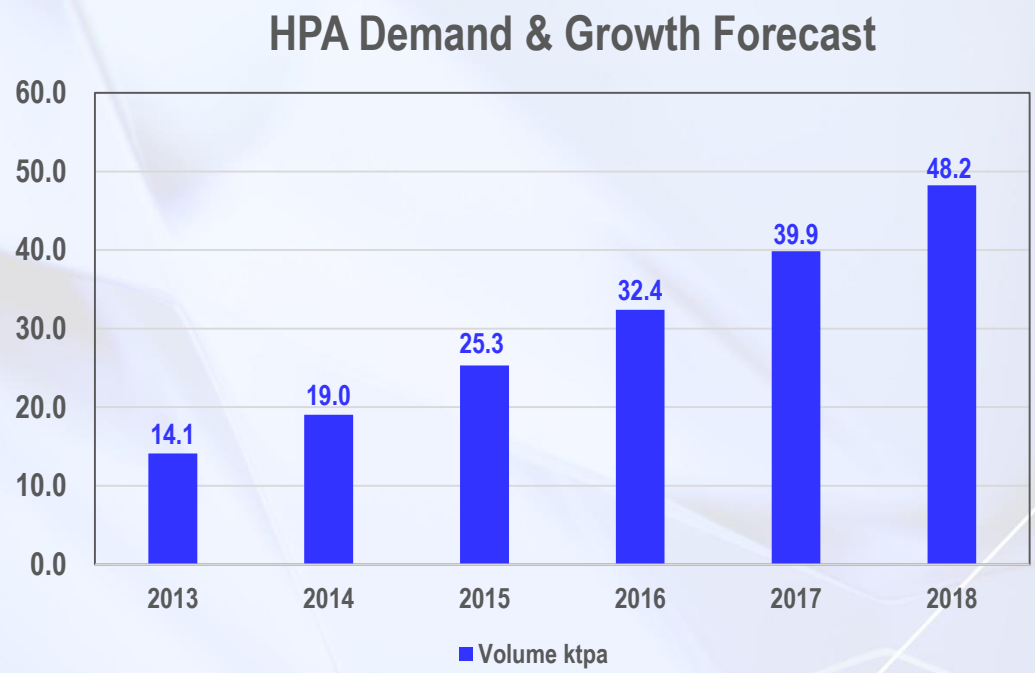
Demand for HPA



Source: Technavio Research "2014-2018 Global High-purity Alumina Market"

Global shipments of LED lamps forecast to increase from 864 m in 2015 to 4.1 billion by 2024 - Navigant Research

Source: 'LED Lighting: Global Outlook'

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Apple Watch

- Apple moving to chic wearable vs geeky tech
- Glass is all Sapphire
- Wearable tech items 45.7m, up 133%
- By 2019, 126m units (ave growth 45%)
- Apple Watch will raise the profile of wearables
- Profile of sapphire glass will be raised globally
- Long term benefit and exposure for Altech

Stone wall

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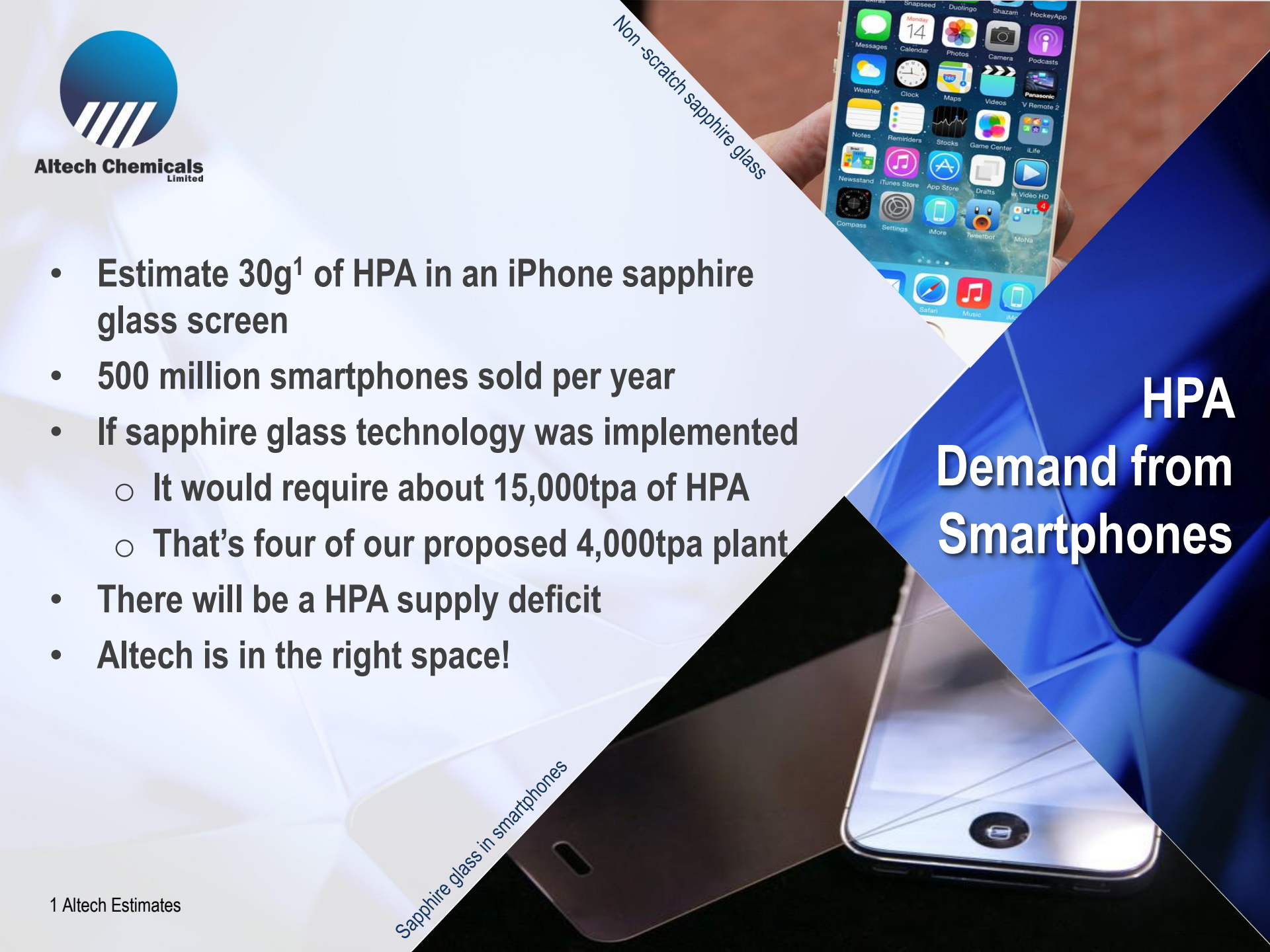
HPA Demand from Smartphones

- Estimate 30g[1] of HPA in an iPhone sapphire glass screen
- 500 million smartphones sold per year
- If sapphire glass technology was implemented
  - It would require about 15,000tpa of HPA
  - That's four of our proposed 4,000tpa plant
- There will be a HPA supply deficit
- Altech is in the right space!



1 Altech Estimates

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- High end Vertu TI with sapphire crystal screen
- Rest will follow

Huawei beats Apple to sapphire glass smartphone

By Reuters Staff on Sep 7, 2014 10:11 PM
Filed under Mobility

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High-spec features for limited-edition Aspire.

Huawei Technologies has unveiled a slate of new devices meant to showcase the Chinese company's hardware technology, just days before Apple releases its highly anticipated iPhone 6 on 9 September.

Huawei, which began as a telecom equipment company in 1987, has rapidly

Smartphones
Sapphire Crystal
Screen

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New Foxconn plant reported to make sapphire displays for iPhones

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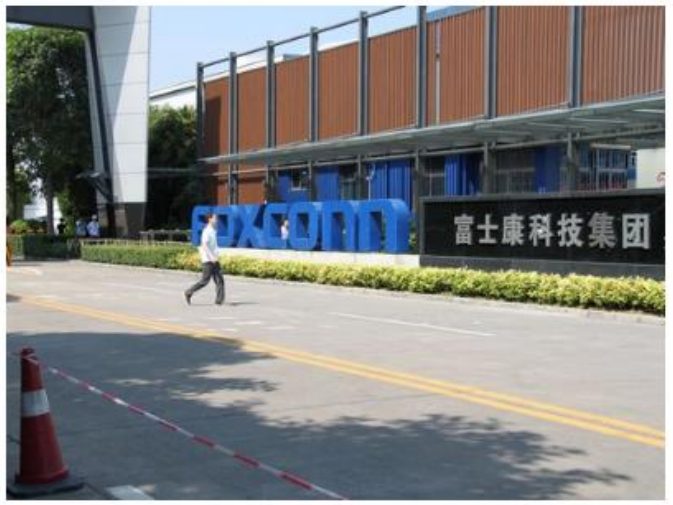

Taipei, Nov. 25 (CNA) Taiwan's Foxconn Technology Group, a major supplier of Apple Inc.'s iPhones and iPads, has decided to build a new factory in China to produce sapphire displays for next-generation iPhones, according to a Chinese media report.

More Sapphire Display Factories

"company (Apple) continues to cautiously evaluate the adoption of the scratch-resistant screens to ensure that there are sufficient supplies"

Focus Taiwan News Channel

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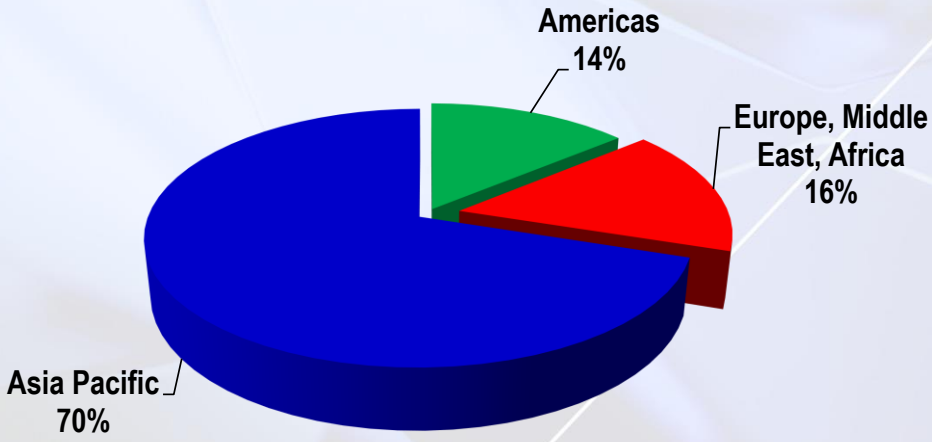
HPA Geographic Demand

- 70% of HPA demand - Asia Pacific region (APEC)
- Region for the world's manufacturing
- Altech's HPA plant (Malaysia) well-positioned to service APEC region
- Transport, customer service, technical credibility



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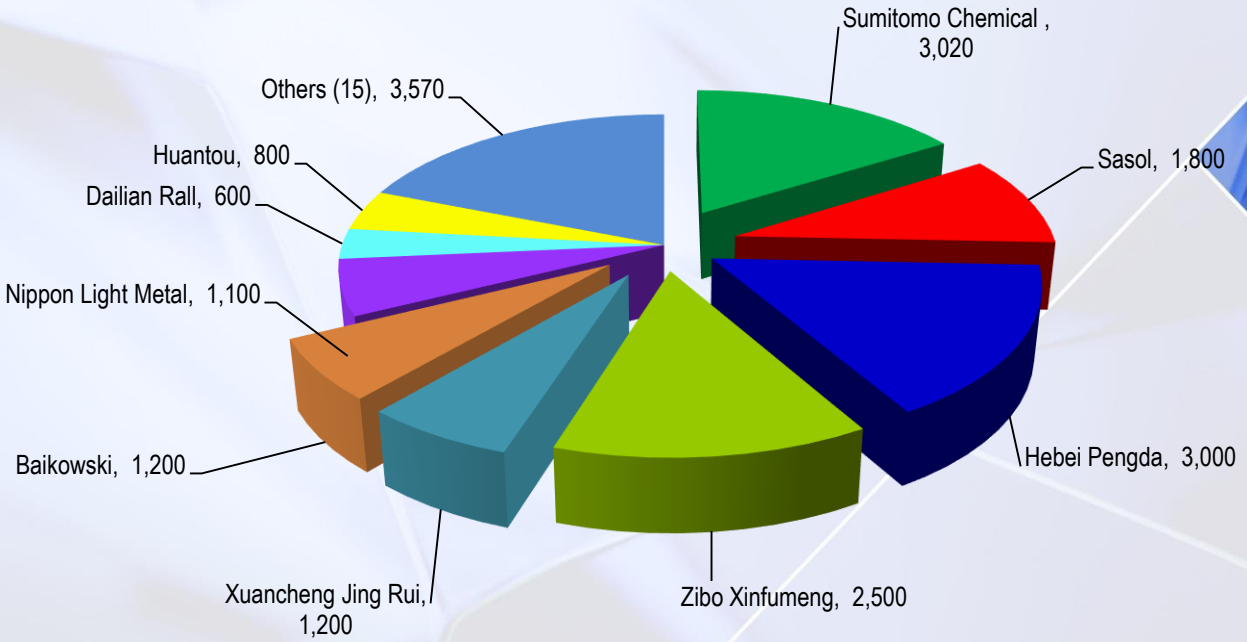
Current HPA Producers

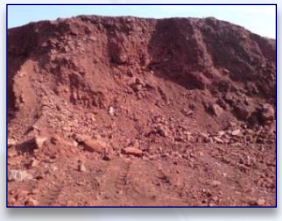
- Six largest HPA producers
- 3 Chinese, 1 Japanese, 1 Sth African, 1 French



Technavio Research

Altech's Differentiation

Current HPA Producers



Bauxite

Alumina Refinery

Smelter Grade Alumina 99.8%

Alumina Smelter

Aluminium Metal

Aluminium Dissolution

99.99% HPA

Or other high purity Al compounds

Aluminous Clay

ALTECH HPA PLANT

One Single Process Step

99.99% HPA

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Low-impurity Aluminous Clay Feedstock

- Processed by mother nature
- Very low Iron (Fe) due to weathering
- Silica is non reactive – easily removed

	Bauxite Darling Range *	Canadian HPA Project	Altech HPA Project
Al_2O_3 (%)	34.5	22.77	30.5
SiO_2 (%)	21.5	53.29	56.3
Fe_2O_3 (%)	21.2	8.36	0.7
TiO_2 (%)	2.00	0.98	0.7
K_2O (%)	0.24	3.41	0.1
NaO (%)	0.005	1.42	0.1

Typical Mean Analysis

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Meckering Aluminous Clay Deposit

- Altech owns 100% of deposit in W Aust
- Landowner agreement in place
- No native title
- Low environmental impact
- Previously mined for kaolin – trial pit
- Low stripping ratio
- 65Mt JORC Resource
- 130kms from Fremantle Port

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Current HPA Feedstock Costs

- Majors like Sumitomo, Sasol:
  - Aluminum alkoxide from Al metal
- Chinese producers:
  - Choline – Dissolving Al foil in choline
- All use relatively expensive feedstock
- Altech aluminous clay 5 times cheaper than Al metal feedstock

Feedstock	USD per 100% Al_2O_3
Aluminium Metal	$1,052 /t
Aluminous Clay	$220 /t

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Altech's HPA Process

- Use a standard HCl leach process
- Standard metal extraction
- Developed in 1980's by alumina industry
- Couldn't compete with Bayer SGA costs
- But great at producing HPA (no sodium ions)
- However little demand of HPA in 1980s

- Demand of HPA is here today

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Altech Business Strategy

New HPA Demand + Established Process + Great Deposit + Experienced People
→ Shareholder Value

"the last piece of the puzzle is in place"

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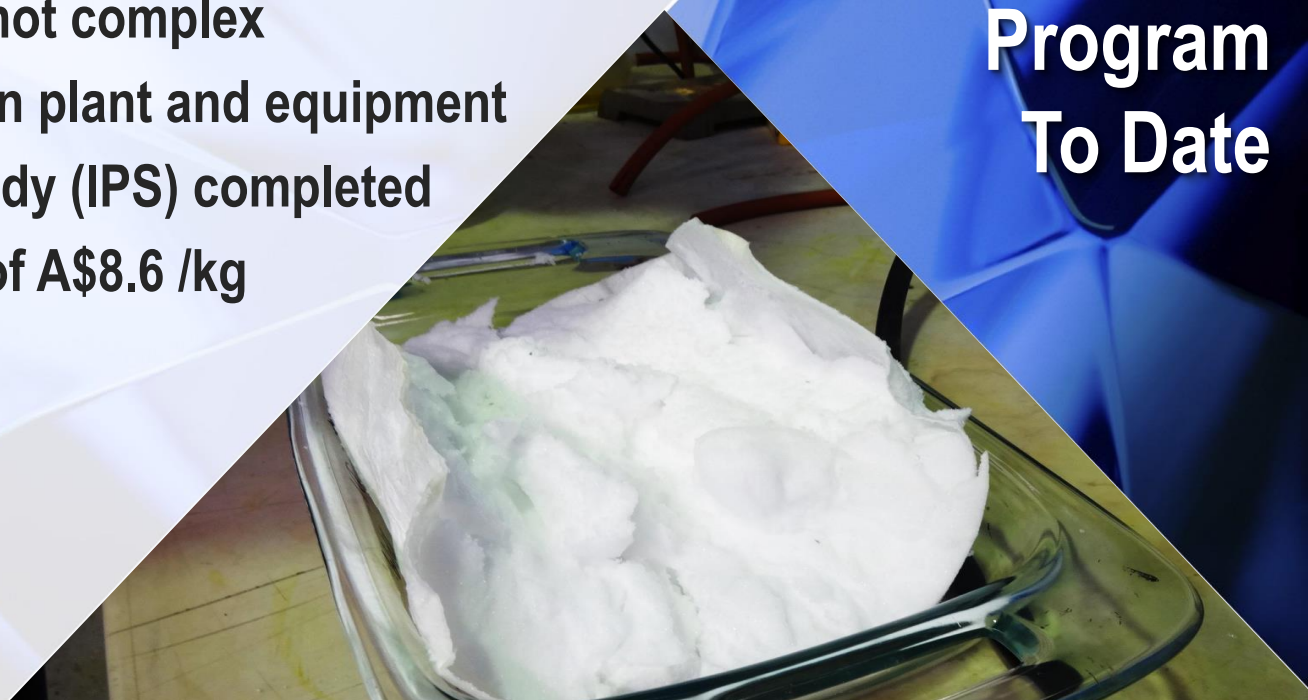
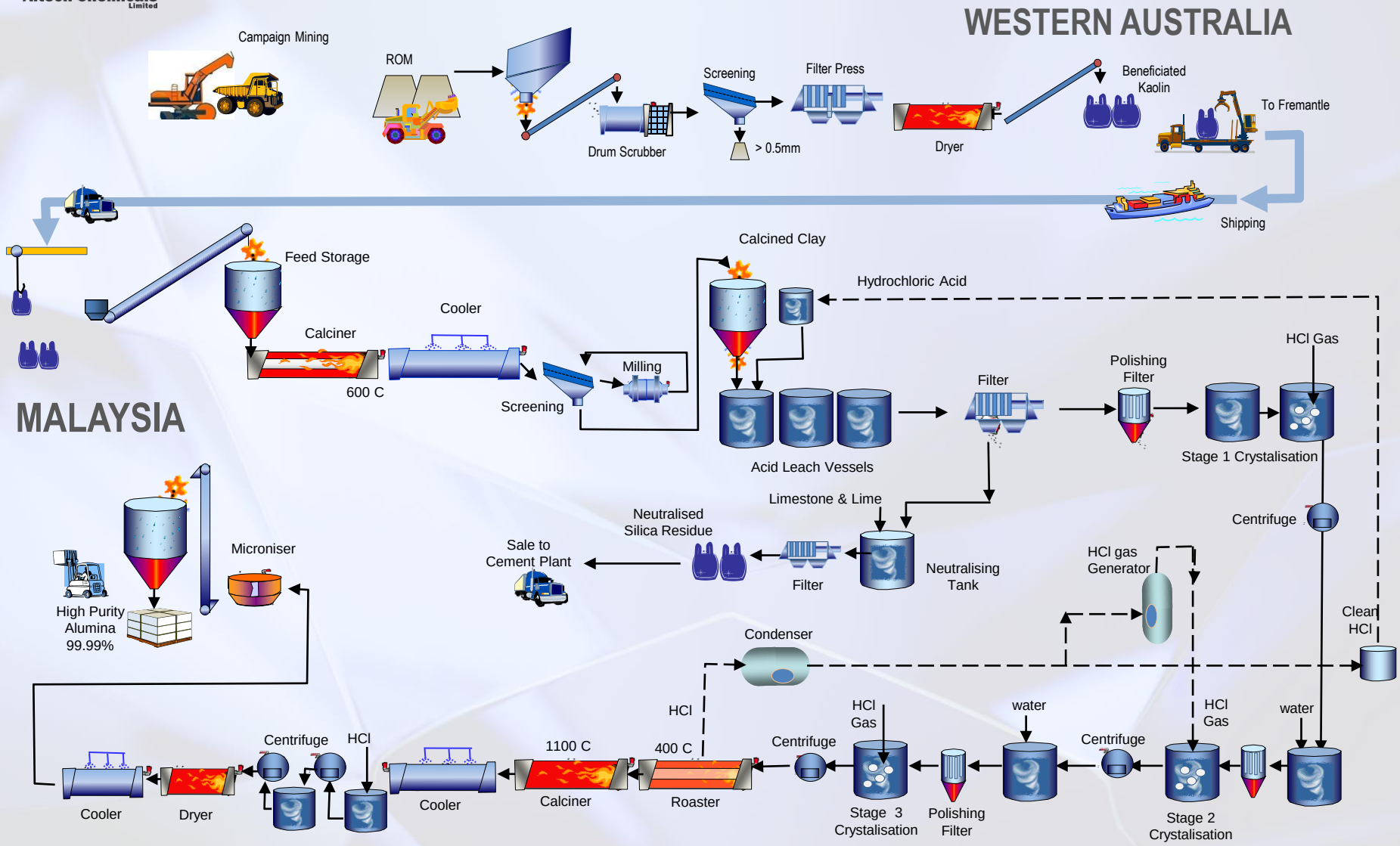
Development Program To Date

- Started development work in early 2011
- Many studies and testwork programs
- No issues about producing 99.99% HPA
- Supporting lab pilot plant test work
- Hydromet process not complex
- Conventional proven plant and equipment
- Integrated Plant Study (IPS) completed
- IPS Opex estimate of A$8.6 /kg



Altech HPA Process



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Bankable Feasibility Study (BFS)

- To be a top HPA producer in the world
- Launched BFS for 4,000tpa HPA
- BFS completion: end Q3 2015
- In parallel, progress permitting, approvals, funding, off- take agreements etc.
- Subject to funding:
  - In position to order long lead capital items
  - Then detailed design, site works, construction
- Continuous laboratory pilot plant work

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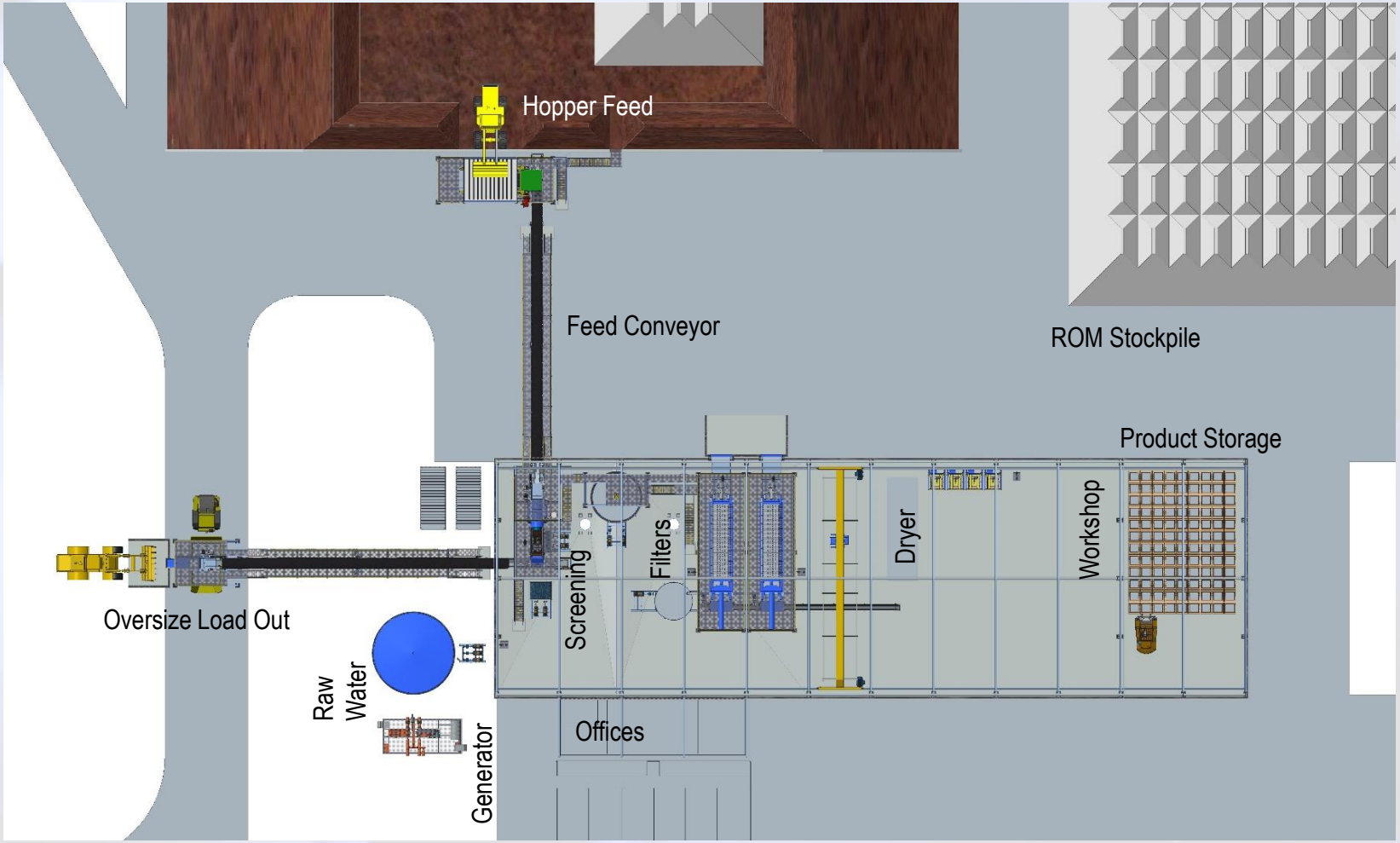
Meckering Operation



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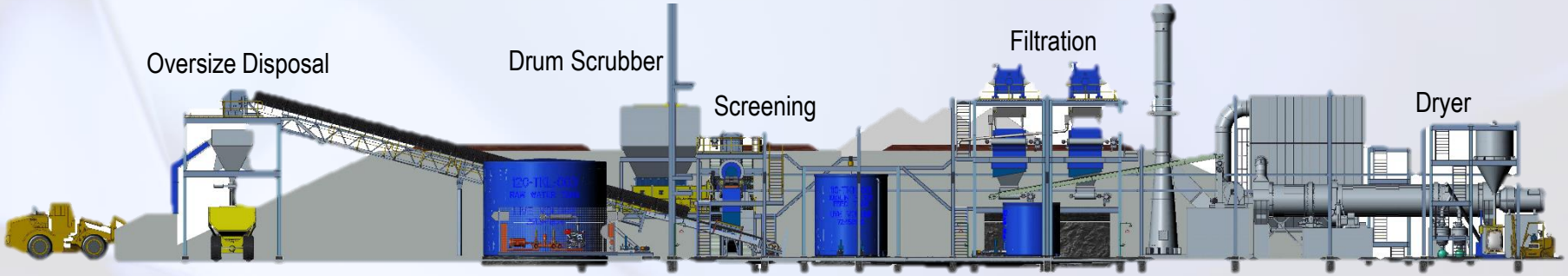
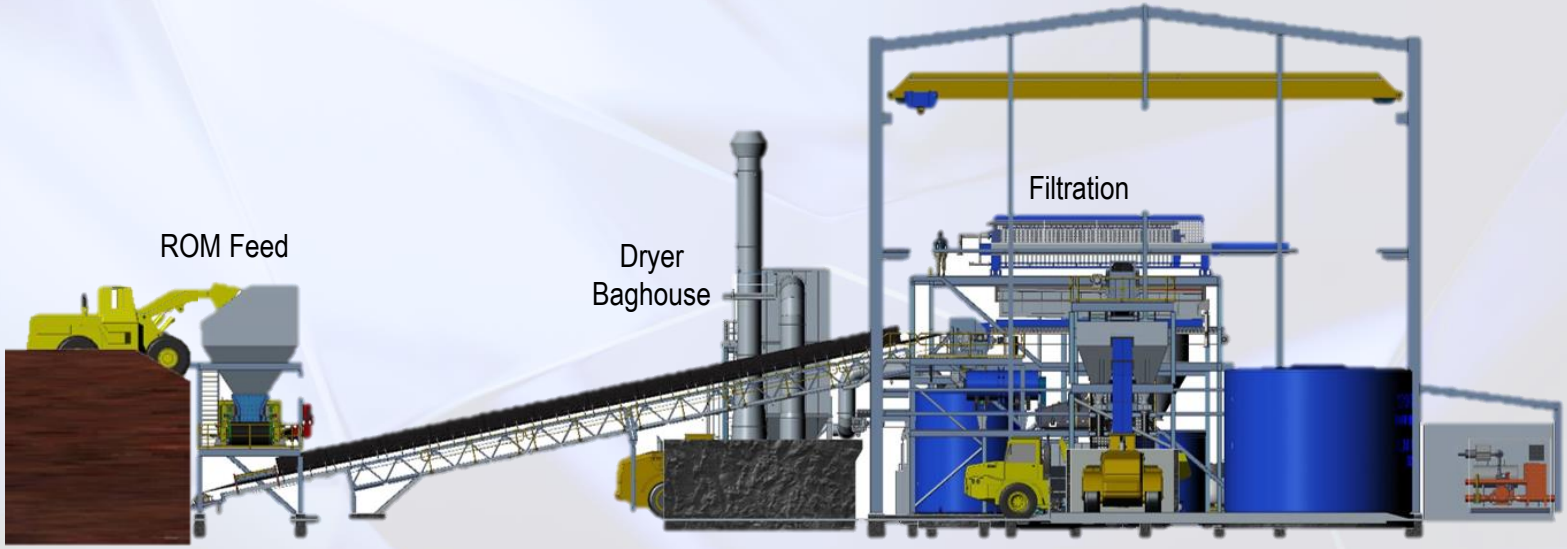
Meckering Plant





Meckering Plant

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Beneficiated Kaolin Shipping

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HPA Preferred Location

- Tanjung Langsat Industrial Park, Johor Bahru (Malaysia)
- Al clay feedstock shipped from WA
- Operating costs ~40% lower than Australia
- Capital costs expected to be 50-60% lower
- Anticipates opex in the bottom quartile of global HPA producers
- Letter of Intent (LOI) submitted for land

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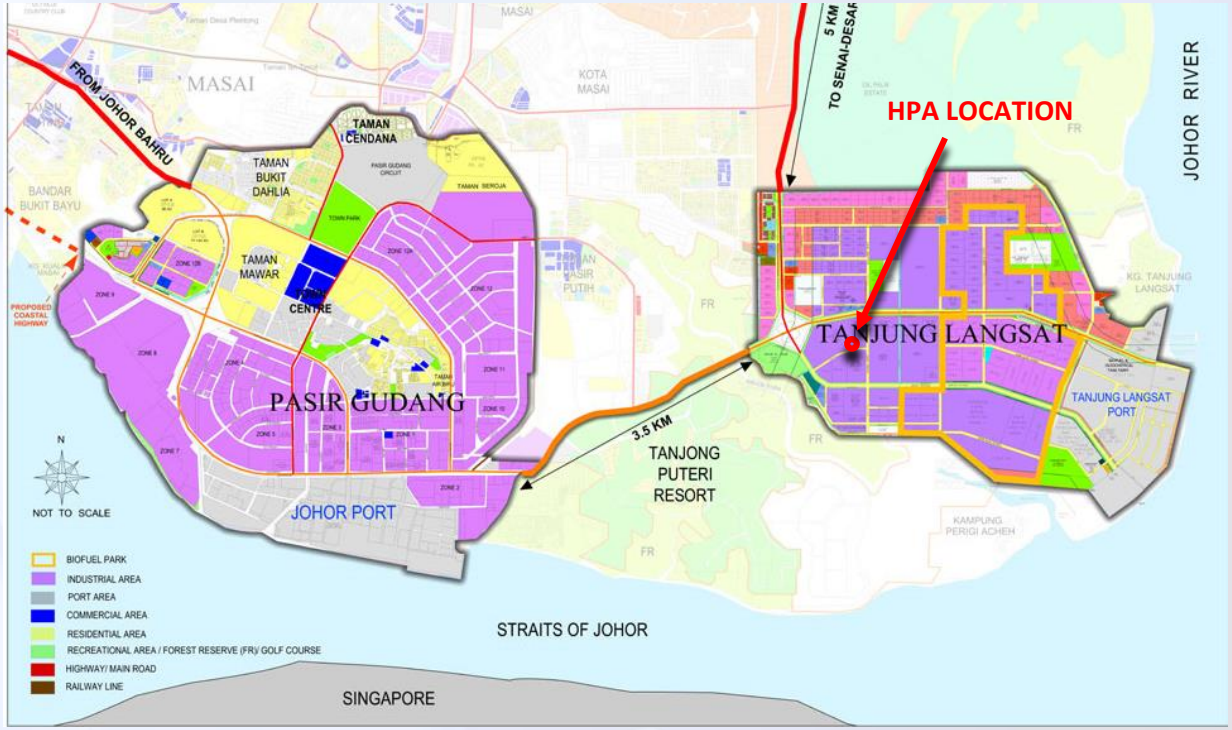
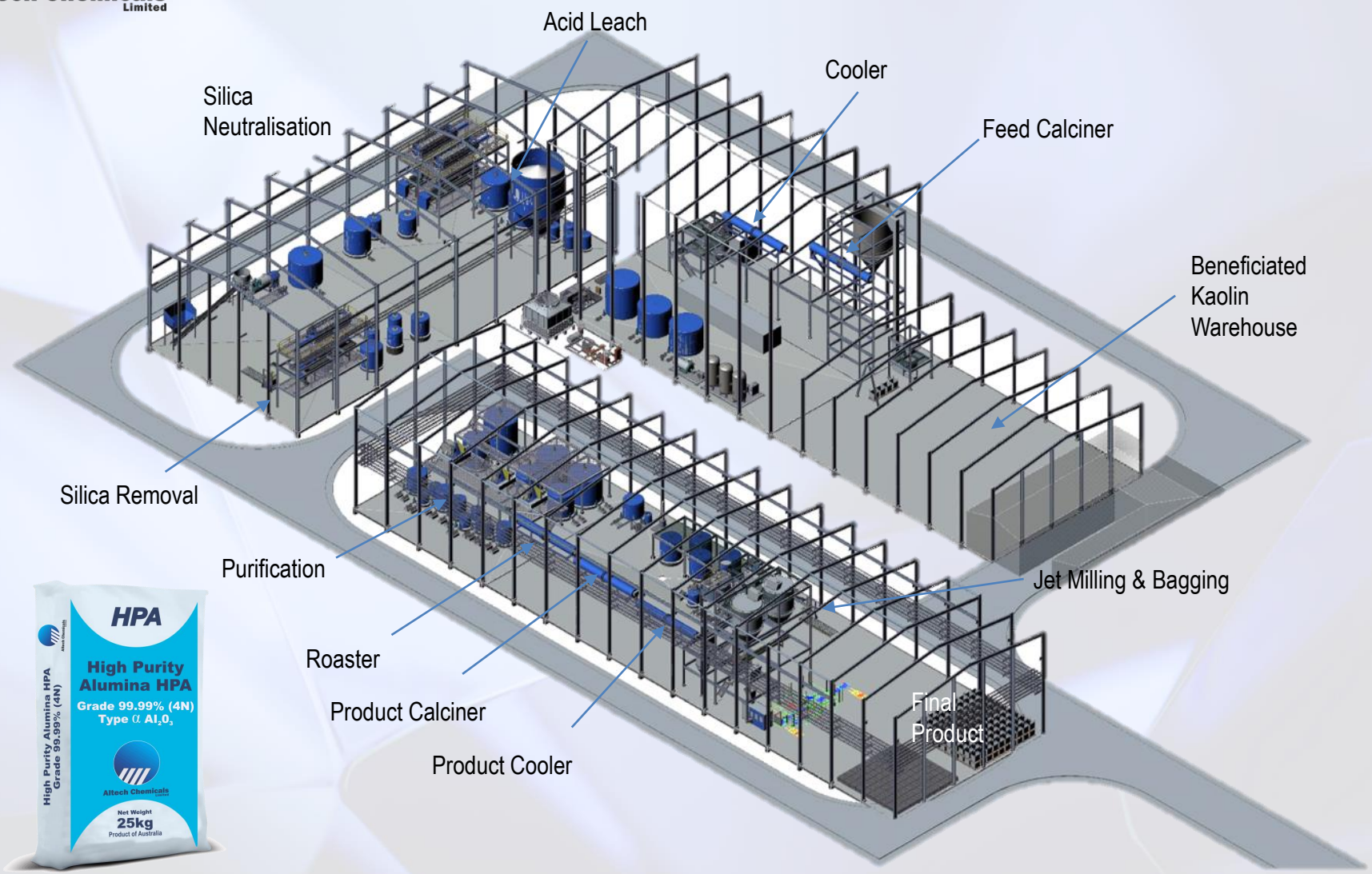
Malaysian HPA Operation

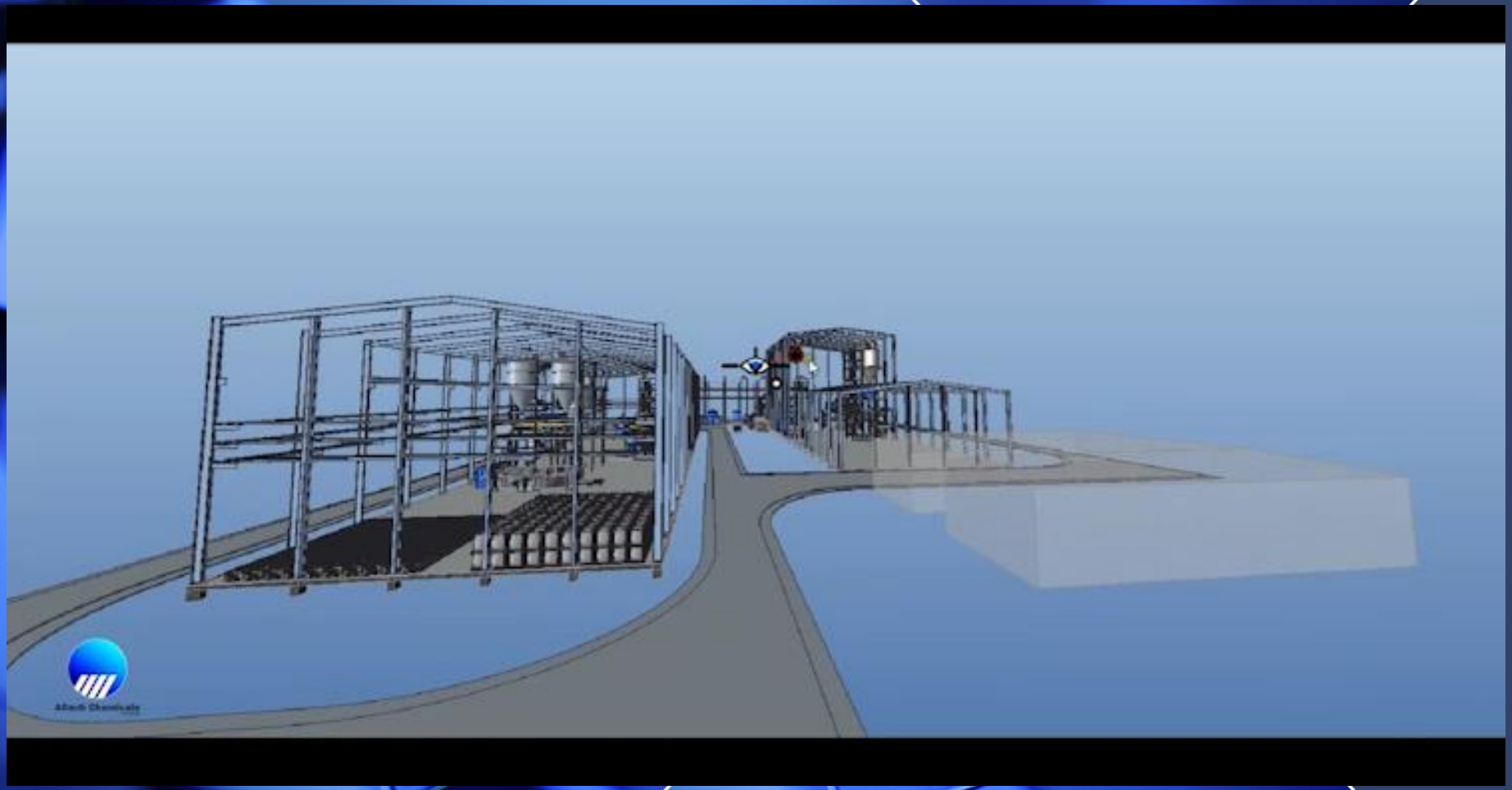


- Hydrochloric acid, sulphuric acid, power & natural gas
- Cement plants to purchase silica residue
- International container sea-port & Singapore
- Investment incentives

Malaysian HPA Operation



Malaysia HPA Plant



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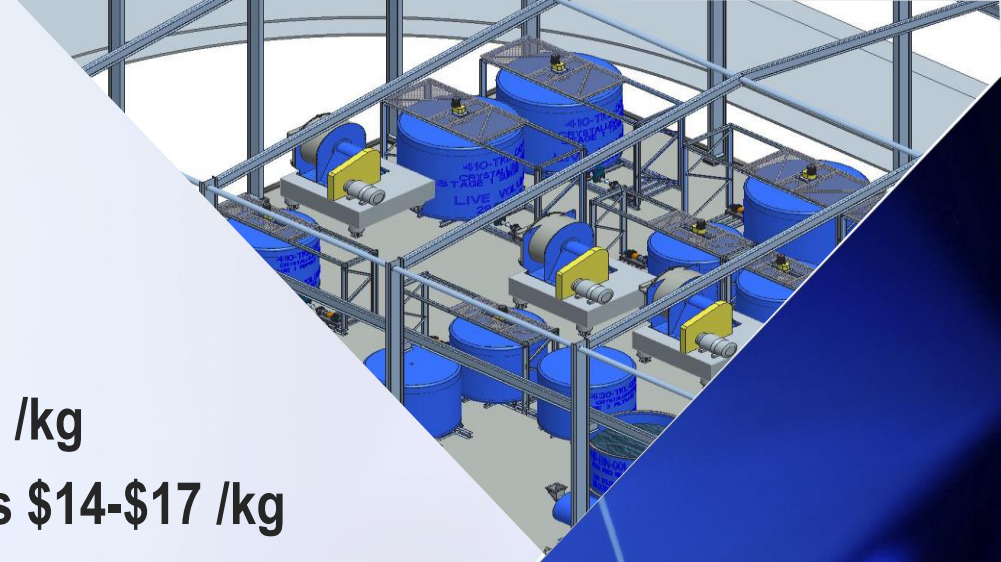

- IPS pilot plant opex around A$8.6 /kg
- Breakaway estimates competitors $14-$17 /kg
- HPA sells for around A$23 /kg
- Bottom quartile for operating costs – Why?

1. We own our feedstock
2. Large scale economy 4,000 tpa – one train
3. Main reactant HCl re-used
4. Minimal impurity removal costs
5. Plant in low cost country (Malaysia)

Bottom Quartile for Op Costs

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Breakaway Research Evaluation

EV/EBITDA Multiple Valuation

- 7.5 x EV / EBITDA multiple, Price $20/kg, Opex $8/kg = $360m evaluation

DCF Valuation

- Disc @10%, Price $20kg, Opex $8/kg = $260m Evaluation

Indicative EV/EBITDA Valuation – 4,000tpa 4N HPA Operation

4N HPA Price	Total Operating Cost (A$/tonne)				
	$7,000	$8,000	$9,000	$10,000	$11,000
$17,500	$315m	$285m	$255m	$225m	$195m
$20,000	$390m	$360m	$330m	$300m	$270m
$22,500	$465m	$435m	$405m	$375m	$345m
$25,000	$540m	$510m	$480m	$450m	$420m
$27,500	$615m	$585m	$555m	$525m	$495m

Source: Breakaway analysis

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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.

Competent Person Statement

Technical information in this report is based on information compiled by Mr Michael O'Mara, B.Sc. Geology, Altech Chief Geologist and a member of the Australasian Institute of Geoscientists. Mr O'Mara has sufficient exploration experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC 2004"). Mr O'Mara consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.