



Alpha **HPA**
ABN 79 106 879 690

INVESTOR PRESENTATION HPA FIRST PROJECT

HIGH PURITY ALUMINA FOR THE LOW CARBON
LITHIUM-ION BATTERY (LIB) & LED MARKETS

MAY 2020



Alpha **HPA**

Cautionary Statement

The Definitive Feasibility Study (DFS) referred to in this presentation has been undertaken to assess the technical and financial viability of the HPA First project. The DFS is based on the material assumptions about the availability of funding and the pricing received for HPA. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the outcomes indicated by this DFS will be achieved. To achieve the range of outcomes indicated in the DFS, additional funding will be required. Investors should note that there is no certainty that the Company will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the HPA First project. If it does, this could materially reduce the Company's proportionate ownership of the HPA First project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the DFS.

Forward Looking Statements

The DFS referred to in this presentation contains certain forward-looking statements with respect to the financial condition, results of operations, and business of the Company and certain plans and objectives of the management of the Company. These forward-looking statements involve known and unknown risks, uncertainties and other factors which are subject to change without notice and may involve significant elements of subjective judgement and assumptions as to future events which may or may not occur. Forward-looking statements are provided as a general guide only and there can be no assurance that actual outcomes will not differ materially from these statements. Neither the Company, nor any other person, give any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. In particular, those forward-looking statements are subject to significant uncertainties and contingencies, many of which are outside the control of the Company. A number of important factors could cause actual results or performance to differ materially from the forward looking statements. Investors should consider the forward looking statements contained in this DFS in light of those disclosures.

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Corporate Snapshot



Alpha HPA

TRADING INFORMATION

ASX CODE	A4N
Share Price (22-05-20)	17.0c
52 week trading range	8.6c – 27.5c
Issued Shares	632.1M

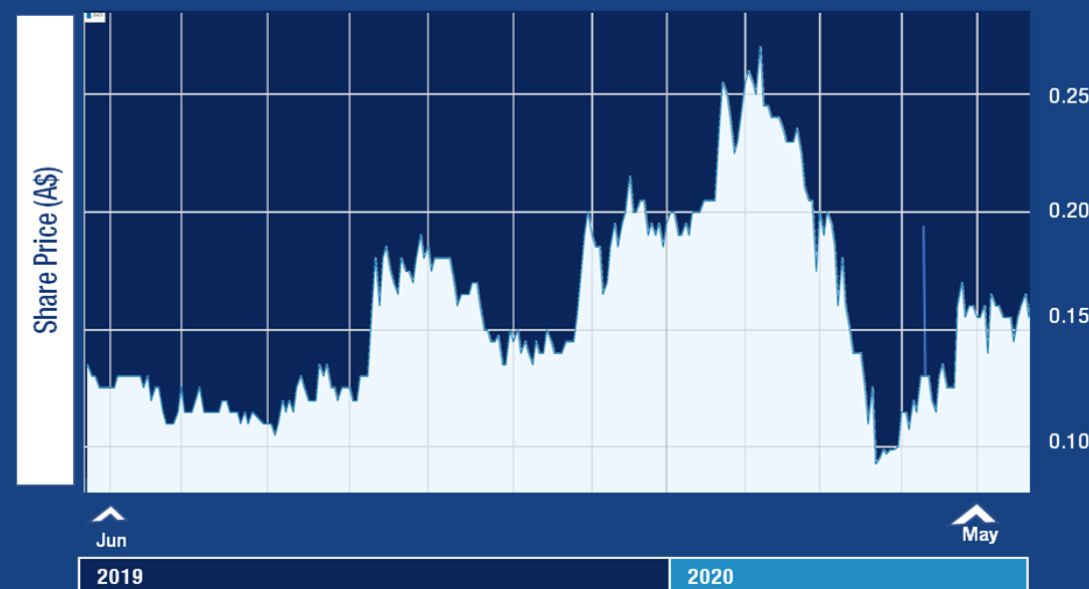
CAPITAL STRUCTURE

Issued Shares	632.1M
Unlisted options (@15c)	12.0M (expire 31 October 2020)
Unlisted options (@20c)	5.0M (expire 30 June 2021)
Unlisted options (@20c)*	10.0M (expire 31 July 2022)
Unlisted options (@30c)	39.0M (expire 31 July 2022)

Market Cap	\$107.4M
Est Cash (22-05-20)	\$2.0M
Enterprise Value	\$105.4M

* Licensor Options

SHARE PRICE PERFORMANCE – 12 MONTHS



SHAREHOLDERS

TOP 20 SHAREHOLDERS

BT Portfolio Services

6.0%

Budworth Capital

6.3%

Permgold Pty Ltd (N. Seckold)

11.1%

Regal Funds Management

14%

65%

Capital Raising – May 2020

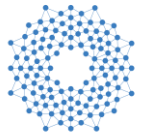


Alpha **HPA**

Issue	Placement of approximately 20.7 million new fully paid ordinary shares (“New Shares”) to raise approximately A\$3 million. The New Shares will be listed on ASX and will rank pari-passu with the existing fully paid ordinary shares.				
Placement Price	\$0.145 per New Share				
Use of Proceeds	The Offer proceeds will be used to fund the Company’s production of HPA for Market Outreach and the Financing and Permitting of the HPA First Project.				
Approvals	The allotment of approximately 20.7 million New Shares (to raise approximately \$3 million) is not subject to shareholder approval and will fall within the Company’s 15% placement capacity under ASX Listing Rule 7.1				
Disclosure Document	A prospectus will not be lodged in relation to the Placement Shares. The Placement is only available in Australia to ‘sophisticated investors’ (as defined in section 708(8) of the Corporations Act, ‘professional’ investors (as defined in section 708(11) of the Corporations Act), or if the offer is made through a financial services licensee and the requirements of section 708(10) of the Corporations Act.				
Current Capital Structure	<table> <tr> <td>Shares currently on Issue</td> <td>632,100,018</td> </tr> <tr> <td>Options (unlisted)</td> <td>66,000,000</td> </tr> </table>	Shares currently on Issue	632,100,018	Options (unlisted)	66,000,000
Shares currently on Issue	632,100,018				
Options (unlisted)	66,000,000				

Indicative Timetable (Australia EST unless otherwise stated)	
Trading Halt	Pre-Open Monday 25 th May 2020
Books Open	10:00am (AEST), Monday 25 th May 2020
Firm Bids Due	5:00pm (AEST), Monday 25 th May 2020
Confirmations Lodged with the Company	2:00pm (AEST), Tuesday 26 th May 2020
Re-quotation of Shares on ASX	Wednesday 27 th May 2020

Board & Management



Alpha HPA



Norman Seckold

Chairman

40+ years in the full time management of natural resource companies. Past Chairman and Director of listed companies including Bolnisi Gold NL, Timberline Minerals Inc., Perseverance Corporation Limited, Valdora Minerals NL, Palmarejo Silver and Gold Corp. Currently Chairman of Santana Minerals Limited and Sky Metals Limited and Deputy Chairman of Nickel Mines Limited.



Rimas Kairaitis

Managing Director

20+ years experience in minerals exploration and resource development in gold, base metals and industrial minerals. Led the geological field teams to the discovery of the Tomingley and McPhillamy's gold deposits in NSW and steered the Hera gold-lead-zinc Project from discovery through to successful commissioning and commercial production. Previously founding Managing Director and CEO of ASX-listed Aurelia Metals. Currently a Director of Sky Metals Ltd.



Peter Nightingale

Director and CFO

30+ years as a Director or Company Secretary for a range of resource companies including Pangea Resources Limited, Timberline Minerals Inc., Perseverance Corporation Limited, Valdora Minerals NL, Mogul Mining NL and Bolnisi Gold NL. Currently a Director of Nickel Mines Limited and unlisted Prospech Limited.



Justin Werner

Non-Executive Director

20+ years' mining and management experience. Previously consulted to a number of blue chip mining companies including BHP, Rio Tinto and Freeport McMoran. Successful track record of mine discovery and development. Currently Managing Director of Nickel Mines Limited.



Tony Sgro

Non-Executive Director

Chemical Engineer with 45+ years' senior management experience in the supply of specialised equipment to the process industries with an emphasis on mining and oil & gas. Co-founder, Director and General Manager of Kelair Pumps for 36 years.

HPA First Project



Alpha HPA

- Alpha HPA is dedicated to the commercialisation of its proprietary solvent extraction (SX) and refining process for the manufacture of **high purity alumina (HPA)** – **The HPA First Project**
- Alpha's HPA First process is disruptive to both existing and proposed HPA production processes:
 - **Low operational risks:** Front-end atmospheric temperatures and pressures
 - **Low production costs:** DFS OpEx estimates <US\$6,000/tonne HPA
 - **Purity:** Pilot Plant purity reaching 99.998% purity
- HPA demand set to grow at a CAGR of 17.6% based on **LED lighting** and **Lithium-ion Battery** demand fed by the **de-carbonisation mega-trend***



Recent Project Milestones



Alpha HPA

- The HPA First Project has been rapidly advanced over the last 12 months

PFS

Nov '18 – Feb '19: Pre Feasibility Study



July '19 – current: HPA First Pilot Plant - 600+hrs operation, > 40kg HPA Production



Nov- Dec '19: Market Outreach - HPA samples despatched to the LIB supply chain



Mar '20: Chemical Counterparty Agreement with Orica – Gladstone Project Location

DFS

Mar '20 Definitive Feasibility Study – completed March 2020



April '20: Commencement of Project Permitting and Financing



May '20: Market Outreach - Large HPA sample orders received from sapphire glass/LED supply chain

HPA First Pilot Plant



Alpha HPA

- During 2019 the HPA First Pilot Plant recorded over 600hrs operation producing > 40kg HPA Production
- Production process validated, purity trends improving to 99.998% purity
- Pilot Plant upgrading to 'demonstration' scale to meet end-user test demand



Pilot Plant – Solvent Extraction Circuit



Pilot Plant – HPA Pre-cursor Circuit



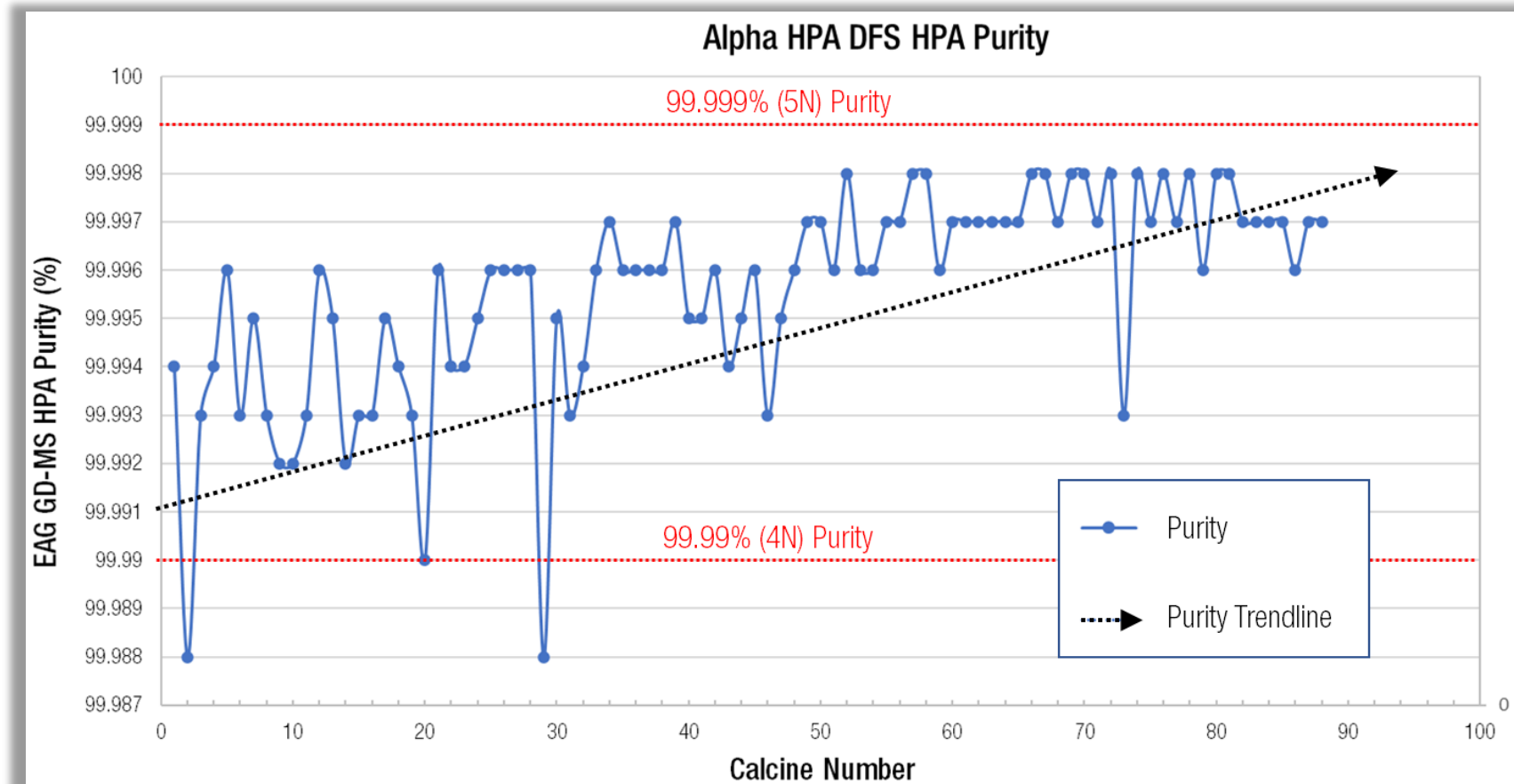
HPA Powder

HPA First Pilot Plant



Alpha HPA

- **HPA First Pilot Plant** – Continuous HPA purity improvement – reaching 99.998% purity
- Purity trend to improve on larger volumes and commercial plant

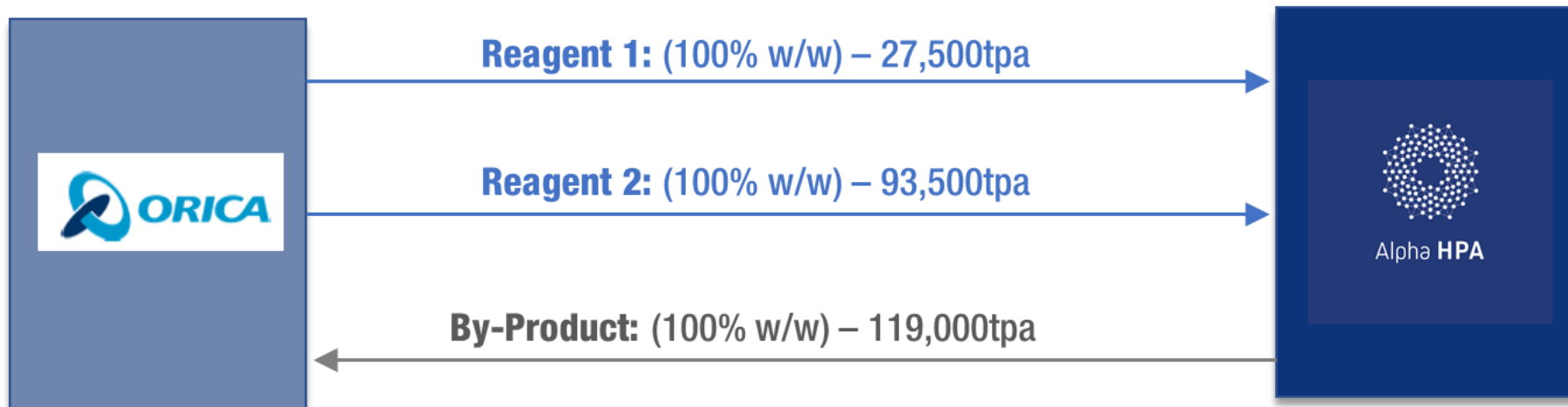


Orica Agreement



Alpha HPA

- The HPA First Project requires the supply of two key chemical reagents, which are recycled inside the HPA production process as a by-product for sale back to the reagent supplier.
- Alpha HPA concluded a **Chemical Counterparty Agreement** (MOU) with Orica in March 2020 for reagent supply and by-product offtake by pipeline.
- MOU sets out a pricing mechanism for both key reagents as well as the by-product over an indicative 20-year term.
- The Orica MOU represents a key Project validation step.



Project Location



Alpha HPA

- The Orica MOU has been negotiated on the basis of reagents supply and by-product offtake delivered from/to Orica's facility in Yarwun, QLD, within the Gladstone State Development Area ('GSDA').
- On this basis, Alpha HPA has executed a land contract with Economic Development Queensland ('EDQ') on a suitable 10ha land parcel within the GSDA, being Lot 12/SP239343.
- Project Permitting has commenced under guidance from AECOM Consultants



HPA First Project Site – Gladstone State Development Area, North Queensland

Definitive Feasibility Study – March 2020



Alpha HPA

- Comprehensive technical and financial validation of the Company's HPA First Project
 - **Production rate of 10,000tpa HPA**
 - **Annual free cashflow increased to A\$280M****
 - **Strong Project cashflows under all modelled price scenarios (US\$15/20/25kg HPA)**
 - **Unit cash costs of A\$8,730 (US\$5,940)/t HPA after by-product credits**
 - **Project CapEx of A\$308M (US\$209M)**
 - **Capital intensity of A\$30,800 (US\$20,900)/tpa HPA**
 - **Financially robust project with high profitability at HPA prices as low as US\$10,000/t**

Key Project Parameters	HPA Pricing Scenarios					
	USD \$25/kg		USD \$20/kg		USD \$15/kg	
	AUD	USD	AUD	USD	AUD	USD
Annual Revenue @ 10,000tpa	\$368 million	\$250 million	\$294 million	\$200 million	\$221 million	\$150 million
Annual Pre-Tax Cashflow	\$280 million	\$191 million	\$207 million	\$141 million	\$133 million	\$91 million
Payback	< 2 years		<3 years		<4 years	

*HPA price of US\$25/kg and USD/AUD = 0.68

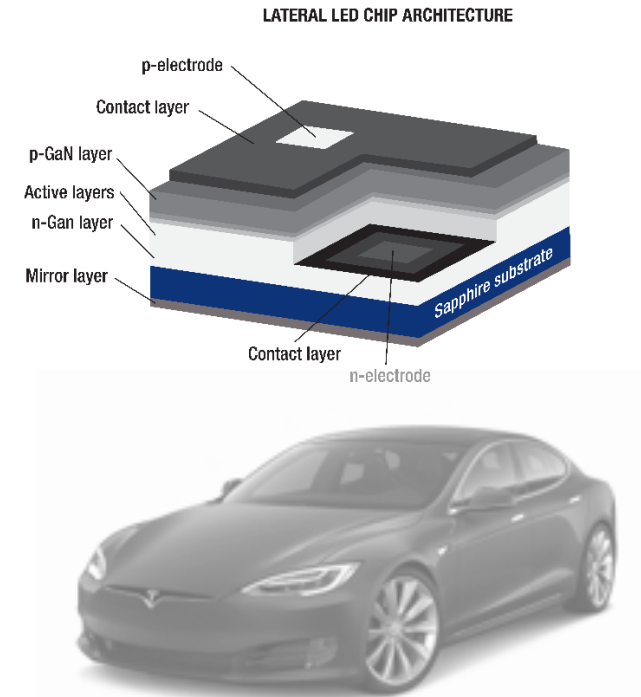
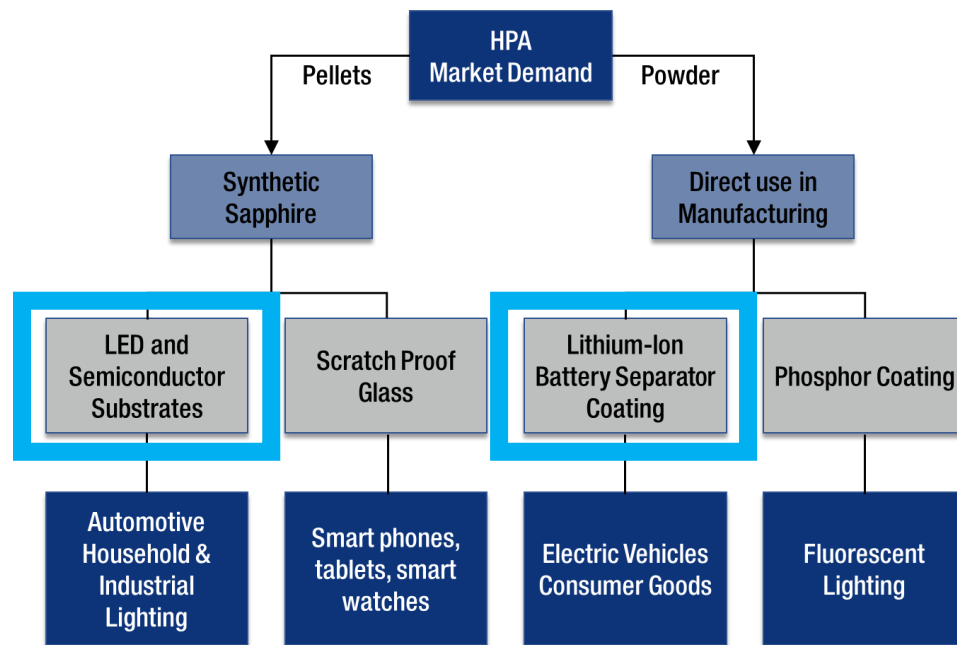
**Relative to March 2019 PFS = A\$265M

High Purity Alumina – Market Overview



Alpha HPA

- High Purity Alumina (HPA) is the very pure form of aluminium oxide – Al_2O_3
- HPA's value derives from its physical properties of extreme hardness, high thermal conductivity, and being electrically and chemically inert (in alpha phase)
- Price and performance of HPA varies upon product density, crystal structure, particle size and distribution and degree of purity
- Alpha HPA is targeting the dominant applications for HPA usage being the established sapphire glass market/LED market and the growth application of coatings inside lithium-ion batteries (LIBs)



Targeting Low Carbon LEDs and Lithium-ion Battery Markets



Alpha HPA

- LEDs and LIBs both represent high-growth demand markets for HPA



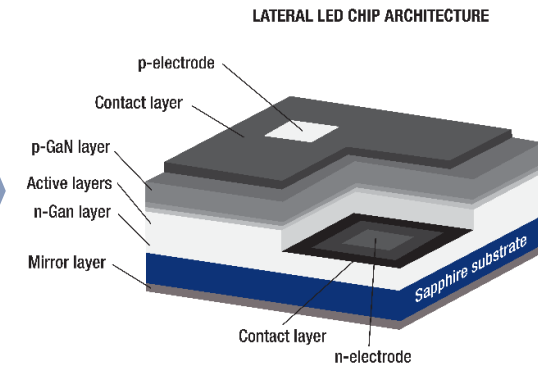
HPA Beads/Pellets



Sapphire glass boule



Sapphire ingots & wafers



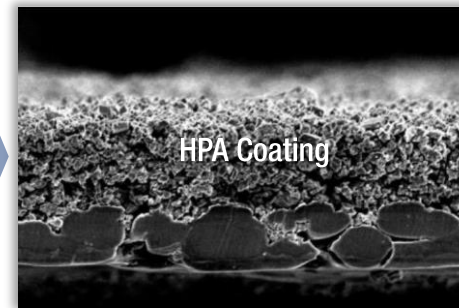
LED architecture



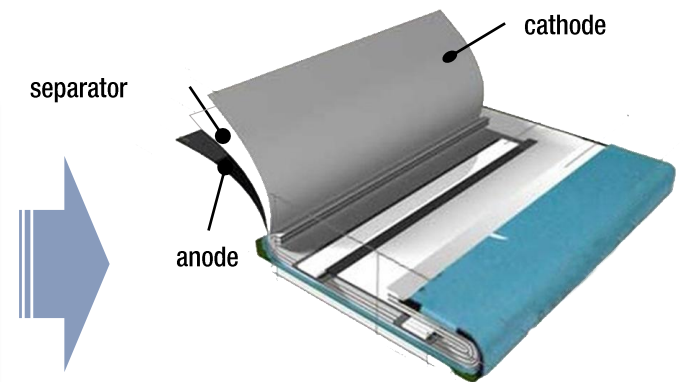
HPA Powder



Wet-coating separator sheets



SEM of coated separator



LIB architecture



Global Market Outreach

- Global outreach campaign underway to identify key end-users:
 - **Late 2019:** Focus on lithium-ion battery supply chain – 8 x test samples despatched
 - **Early 2020:** Focus on sapphire glass/LED supply chains – 1st 2 test orders received
- Looking to convert market interest to offtakes over the course of CY20



Alpha HPA's Process Flexibility



Alpha HPA's process is capable of producing a range of HPA and high-purity boehmite products suitable for:

- LED market (for sapphire substrates)
- Separator and electrode (cathode and anode) coatings for lithium-Ion Batteries (LIBs)
- Electrolyte pre-treatment of LiPF_6 based electrolyte
- Gamma alumina for the catalysts market

high purity α -alumina beads
>99.995% purity



sapphire glass/wafers – LED lighting



high purity α -alumina powder
>99.995% purity



Separator and electrode coating for
lithium-ion batteries



high purity boehmite powder
>99.995% purity



Separator and electrode coating for
lithium-ion batteries



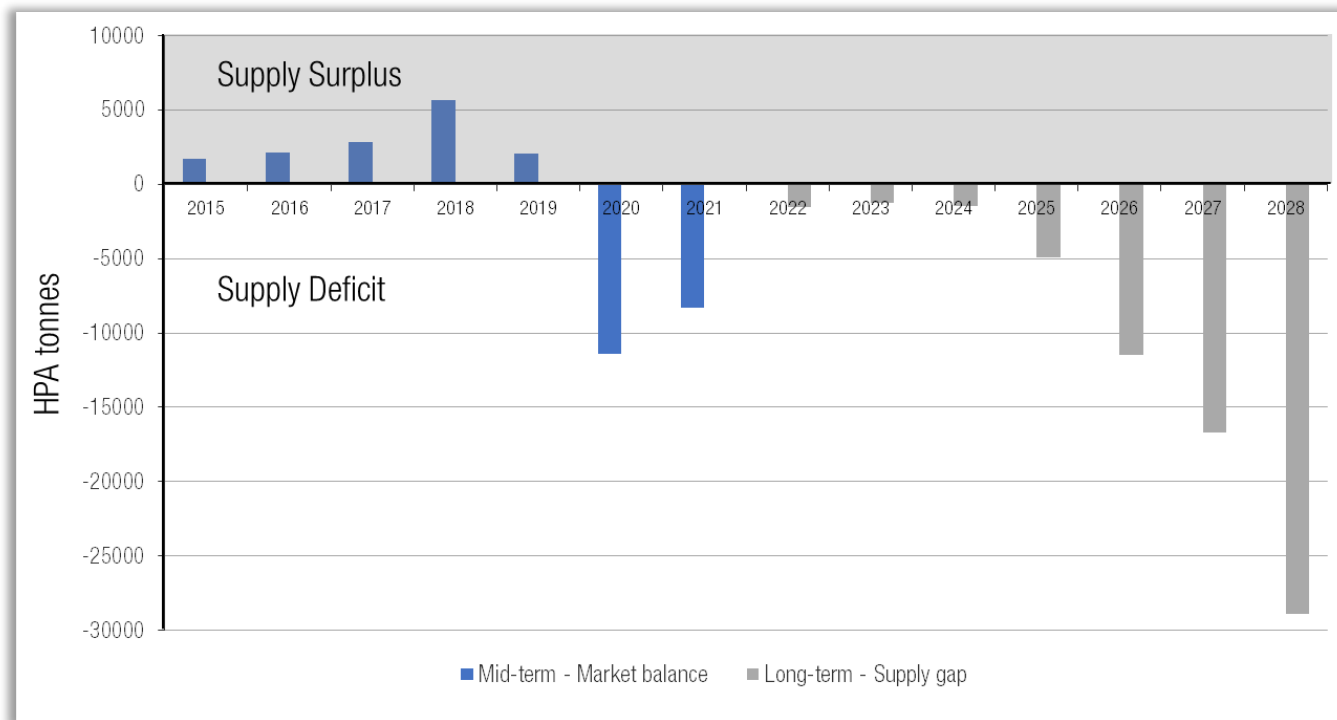
high purity γ -alumina powder
>99.995% purity



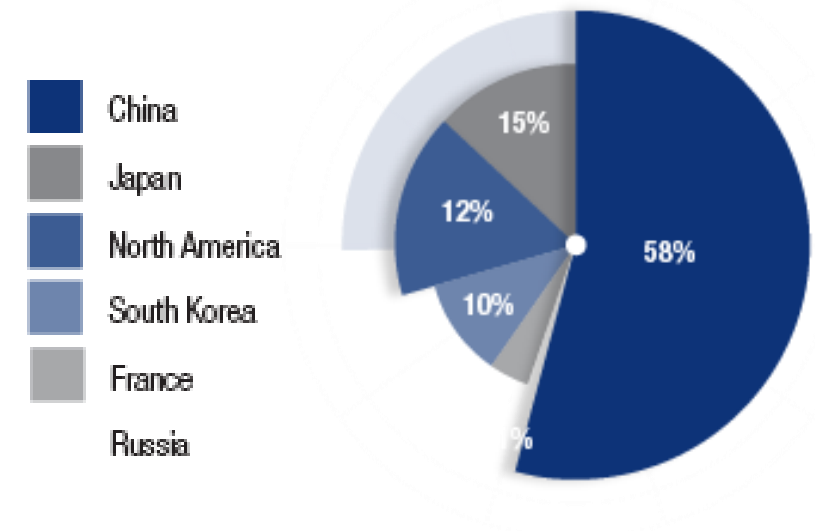
Catalyst and water treatment

Projected HPA Deficit

- The HPA First Project is scheduled to deliver > 4N HPA into a growing market deficit
- As part of a detailed HPA market review (Dec 2019), CRU present a > 4N HPA market in relative balance until 2020, after which deficits build through to a large supply deficit of nearly 30,000tpa by 2028.



> 4N HPA Market Dynamic



China dominant HPA Supply

Project Layout



Alpha HPA



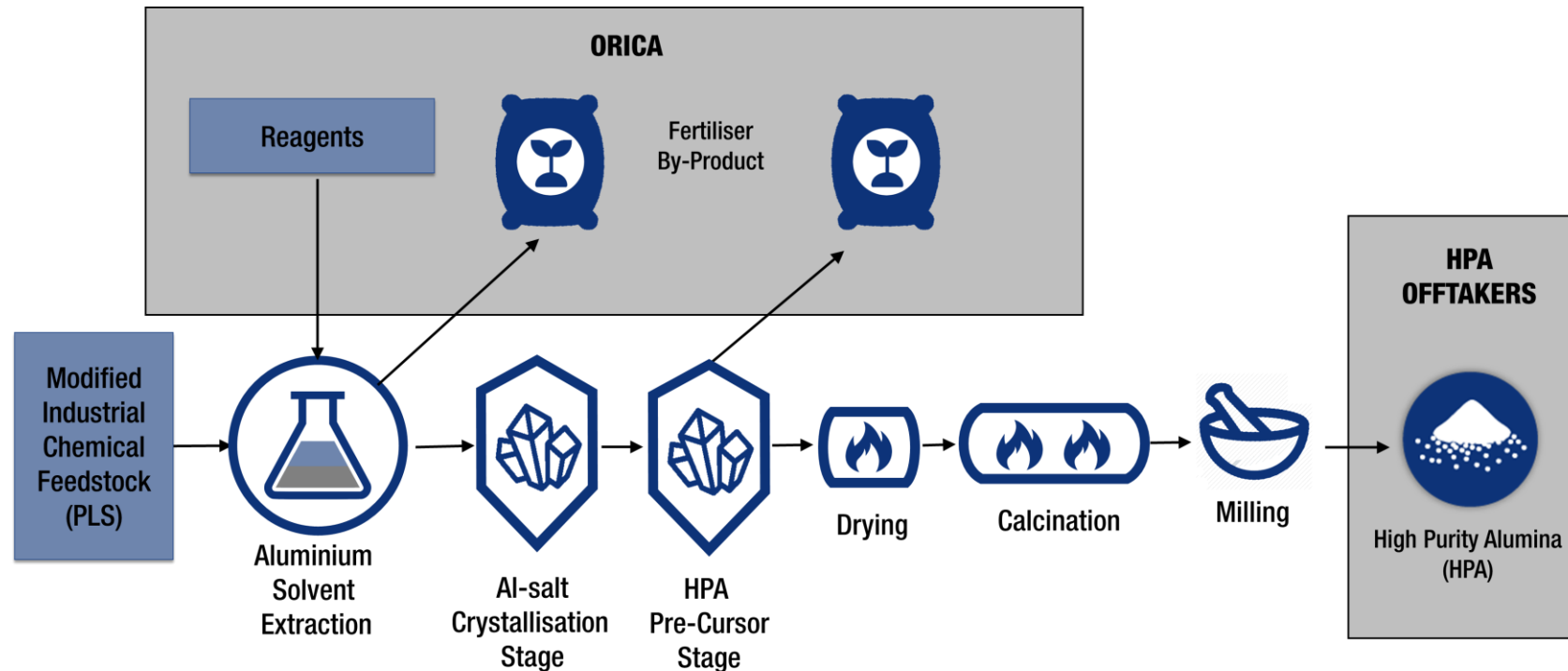
3D Model - HPA First Commercial Plant

HPA First – Process Flow Sheet



Alpha HPA

- Alpha HPA's proprietary HPA First process is disruptive to both existing and proposed HPA production processes:
 - Low operational risks:** Front-end atmospheric temperatures and pressures
 - Simplicity:** Ability to recycle reagents as by-products for sale
 - Low production costs:** DFS OpEx estimates <US\$6,000/tonne HPA
 - Purity:** Pilot Plant purity reaching 99.998% purity

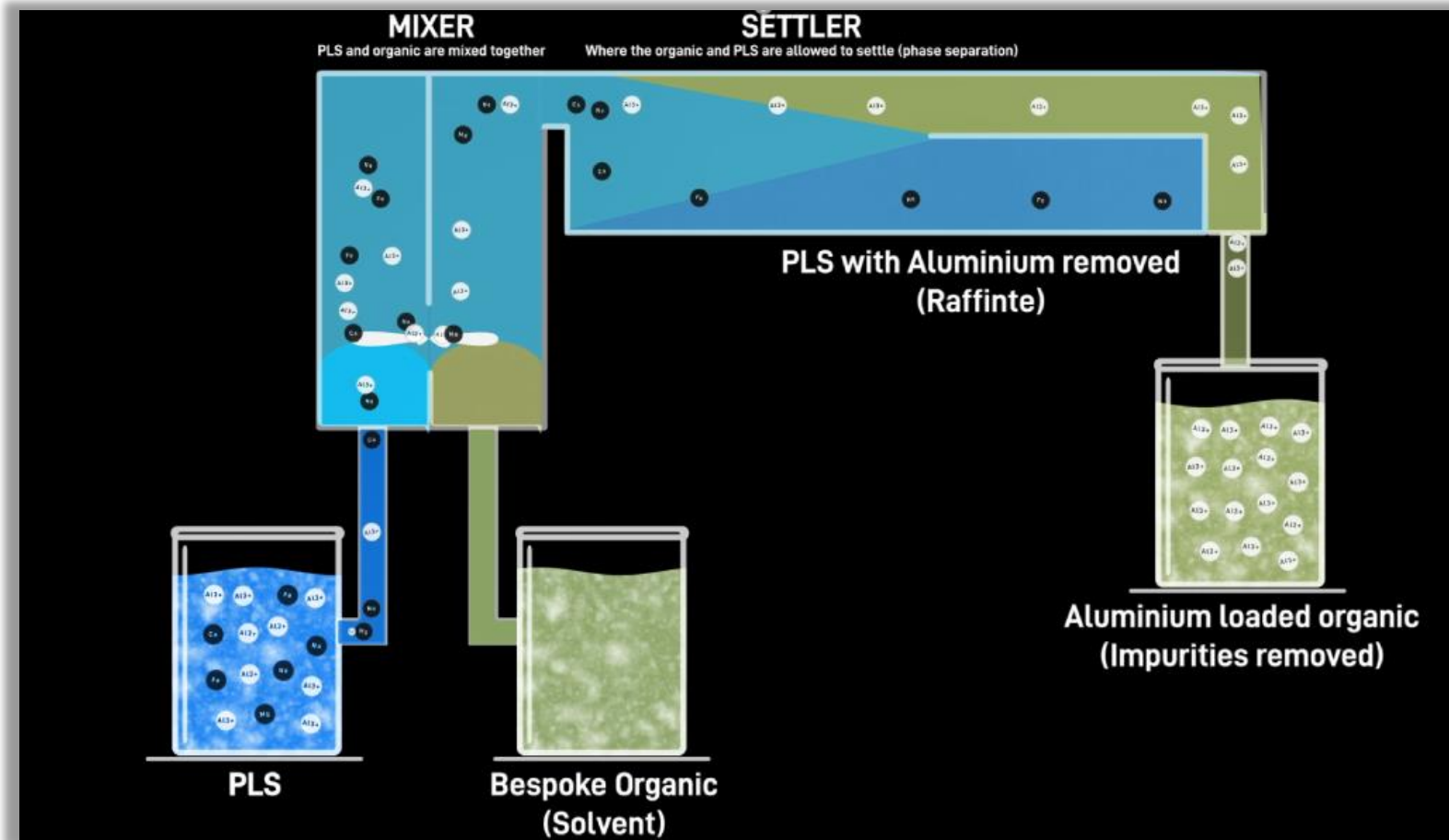


SX based process technology



Alpha HPA

- Alpha HPA's key process advantage is the application of established Solvent Extraction (SX) technology to aluminium extraction and purification



Schematic of Alpha HPA's SX circuit

Project Schedule



Alpha HPA

- Alpha HPA is progressing offtakes, permitting and financing workstreams with a target of having Project construction commencing March Qtr 2021
- Targeting first HPA production by late CY2022

Task	Months	2020				2021				2022				
		MarQ	JunQ	SepQ	DecQ	MarQ	JunQ	SepQ	DecQ	MarQ	JunQ	SepQ	DecQ	
OFFSITE														
EIS		[Grey bar]												
Regulatory Approvals		[Blue bar]												
HPA Offtakes		[Grey bar]												
Financing		[Blue bar]												
Financial Approval														
PROCESS PLANT														
Front End Engineering	6													
Detailed Design	7													
Long Lead Item Delivery	15													
Site Establishment														
Buildings & Civil Works	12													
Plant Assembly	10													
Commissioning	6													
Production Ramp-Up	24													

Adjusted DFS Project Schedule

Contacts

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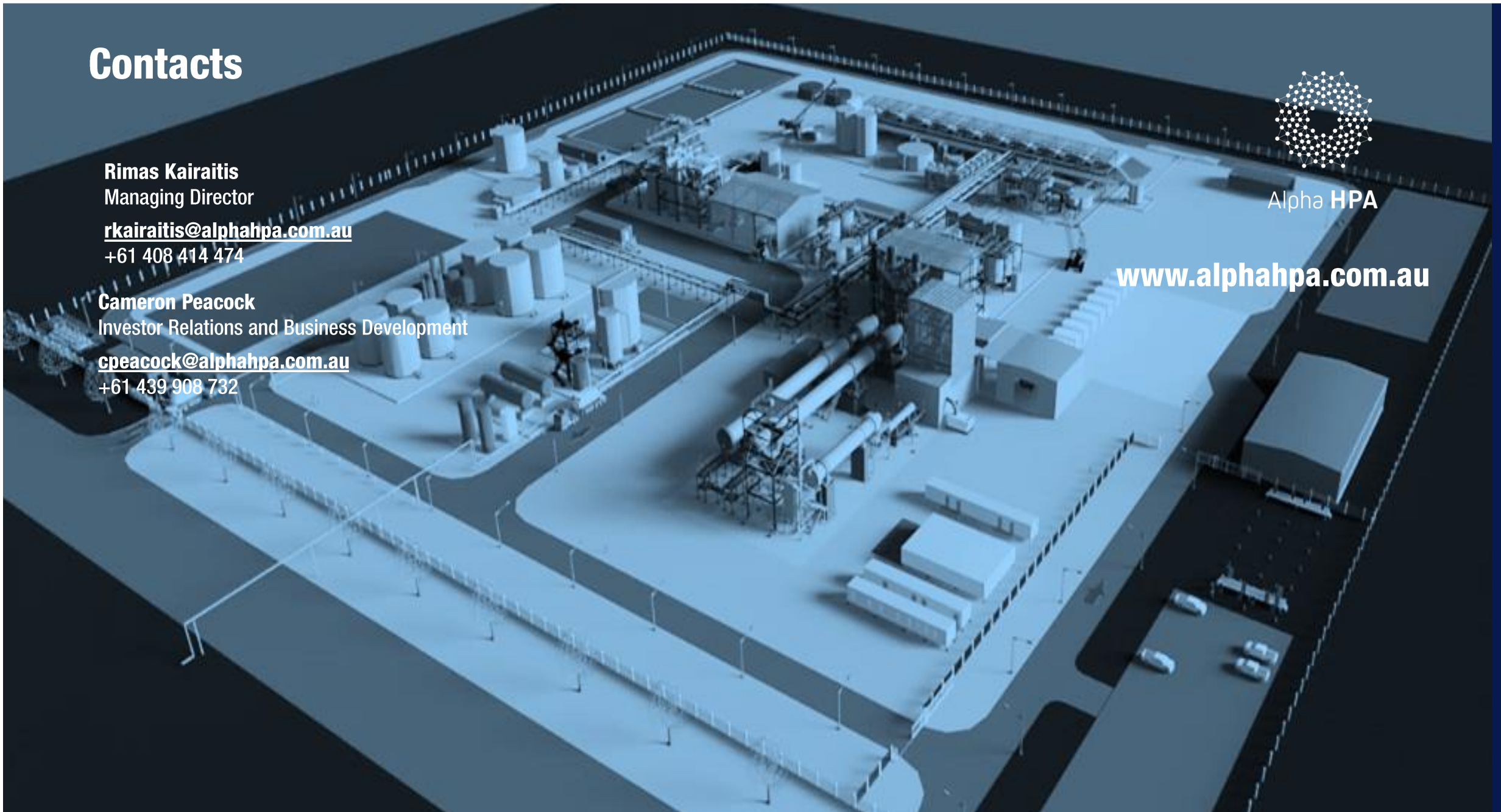
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Competent Person Statement (Process Development Testwork)

Information in this announcement that relates to metallurgical results is based on information compiled by or under the supervision of Dr Stuart Leary, an Independent Consultant trading as Delta Consulting Group. Dr Leary is a Member of The Australasian Institute of Mining and Metallurgy. Dr Leary has sufficient experience to the activity which he is undertaking to qualify as a Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Leary consents to the inclusion of the technical data in the form and context in which it appears.

For further information on testwork results and processes see ASX announcements dated 23 April 2020, 25 March 2020, 17 March 2020, 10 December 2019, 21 November 2019, 10 October 2019, 23 September 2019, 28 August 2019, 5 August 2019, 25 July 2019, 2 July 2019, 3 June 2019, 17 April 2019, 7 March 2019, 4 December 2018, 20 November 2018, 6 September 2018, 31 August 2018, 9 July 2018, 30 April 2018, 26 April 2018, 21 March 2018, 6 March 2018, 21 February 2018, 8 December 2017, 30 November 2017, 29 November 2017, 24 November 2017 and 13 November 2017.