

13

Al

Aluminium
26.982

PRESENTATION TO ANNUAL GENERAL MEETING NOVEMBER 2022

A large, illuminated sign for Alpha-HPA is the central focus. The sign consists of a dark brown rectangular panel on the left with the word "Alpha" in white, lowercase letters. To its right is a smaller dark brown panel with a white hyphen. Further right are the letters "HPA" in large, bold, yellow, 3D block letters. The sign is mounted on a concrete base and is illuminated from below. In the background, there is a large industrial building with several windows, some of which are lit. The scene is at night, with streetlights and other lights visible in the distance. The ground in the foreground is gravel.

Alpha-HPA

ASX: A4N

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

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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Alpha HPA: Introduction

We are a technology/industrial chemical company

We make **ultra-high purity aluminium products** with a worlds first process which are:

CRITICAL RAW MATERIALS FOR DE-CARBONISATION

Our proprietary process delivers us the competitive edge

HIGH PURITY/LOW CAPEX/LOW OPEX/LOW CARBON

We are commercialising in 2 Stages as the
HPA FIRST PROJECT

STAGE 1 – COMMISSIONING

A\$15.5M IN AUST GOVT GRANTS APPROVED

STAGE 2 – MOVING TO F.I.D

A\$45M IN AUST GOVT GRANTS APPROVED

Stage 2 Full Scale HPA First Project - to free cash flows of between **A\$133M - \$280M pa** (DFS - March 2020)



HPA First Project: Highlights and Catalysts



DFS —●

Mar '20 Definitive Feasibility Study – **ROBUST PROJECT CONFIRMED**



—●

Sept '20: 2 x High-purity Li-B Pre-Cursor manufacture confirmed



—●

Feb '21: Major Project Permitting Approval (MCU)



—●

Apr '21: MOU with Saint Gobain – all products



—●

May '21: MOU with CleanCo QLD to provide up to 100% Renewable Energy



—●

Aug '21: Orica Definitive Agreements



—●

Sep '21: NAIF – Strategic Assessment Phase Approval



—●

Nov '21: Project Site Secured – **PPF CONSTRUCTION COMMENCED**



—●

Mar '22: Approval of \$45M Federal Government Grant for Stage 2



—●

Apr '22: Approval of \$15.5M Federal Government Grant for Stage 1



—●

Sept '22: MOU with Brenntag – Worlds largest chemical distributor



—●

Nov '22: Orica Strategic Investment

Current: Global Outreach >100 end-user test products shipped, 18 supply bids submitted.

Current: **COMMISSIONING – STAGE 1**

Pending: Large Volume Product Offtakes

Pending: Final Multi-Product Mix and DFS Update

Pending: Project Financing and FID



LED-LIGHTING

The current technology driver of de-carbonisation



LEDs reduced CO₂e by an est. 570m tons in 2017

Reducing new power stations by 1,250

IN 2017, THE USE OF LEDS TO ILLUMINATE BUILDINGS AND OUTDOOR SPACES REDUCED CO₂ EMISSIONS BY NEARLY

570 MILLION TONNES

75%

PROJECTED ENERGY SAVINGS IN US LIGHT ENERGY CONSUMPTION BY 2035

LED lights are 50-70% more efficient than incandescent

A COMPLETE SWITCH TO LED LIGHTING WORLD WIDE, WOULD PREVENT 1,400,000,000 TONNES OF CO₂ EMISSIONS

ANNUAL CO₂ EMISSIONS SAVINGS FROM GLOBAL LED ADOPTION BY 2035

EQUIVALENT TO 200 MILLION CARS

OR 200 NEW COAL FIRED POWER STATIONS

WE SUPPLY

- HPA for LED sapphire substrates
- HPA for LED phosphors
- Al-precursors for LED phosphors

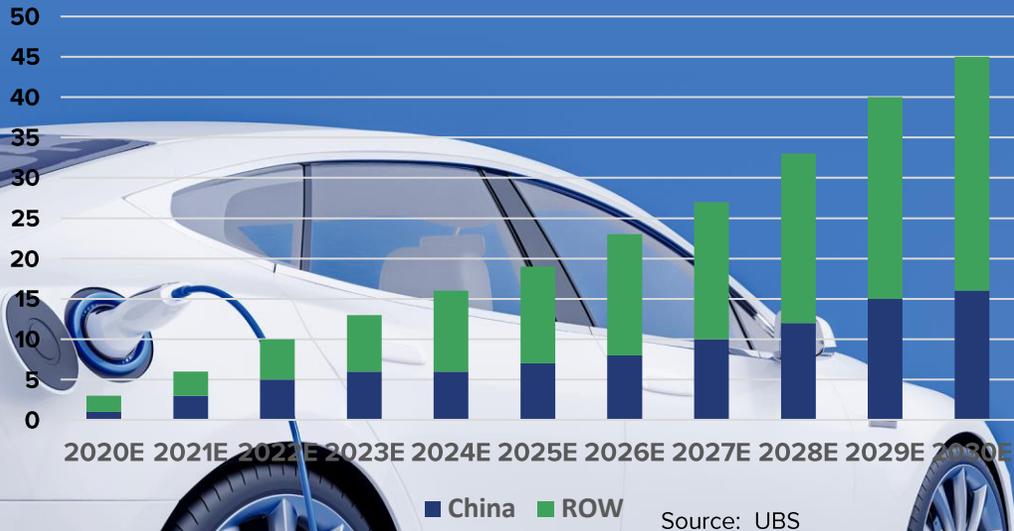
Alpha HPA

Sources: US Dept of Energy, www.microled-info.com & IHS Markits

E-MOBILITY

The next major driver of de-carbonisation

EV Sales Forecast (M units)



Gasoline Only



Average Emissions

380

Grams of CO₂e per mile

Plug-in Hybrid Electric



209

Grams of CO₂e per mile

Battery Electric



154

Grams of CO₂e per mile

Source: Inside EV's (www.insideevs.com)

CO₂ Emissions

50%



WE SUPPLY

- ✓ HPA for separators
- ✓ Al-precursors for cathode
- ✓ Al-precursors for anode



Alpha HPA

SEMI-CONDUCTORS

Global Supply Chains Re-Shoring



**CHEMICAL MECHANICAL POLISHING
(CMP) IS A KEY STEP IN SEMI-
CONDUCTOR WAFER PREPARATION**

THE USA
CHIPS ACT
WILL INJECT

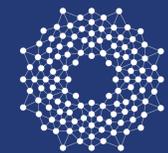
USD\$130B in

the next **5** years to re-shore US
capability

CMP IS AN ESTIMATED **7%** OF THE
TOTAL FRONT END SEMI-CONDUCTOR
SECTOR BY VALUE

WE SUPPLY

- ✓ Boehmites for CMP slurry
- ✓ Al-Nitrates for CMP slurry
- ✓ Nano HPA for CMP slurry



Alpha HPA

Our products:

High Purity Aluminas



Ultra High Purity Alumina (HPA)
Powder & Tablets



Ultra High Purity
Boehmite



$\text{Al}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$
Ultra Aluminium
Nitrate



$\text{Al}_2(\text{SO}_4)_3 \cdot x\text{H}_2\text{O}$
Ultra Aluminium
Sulfate

LITHIUM-ION BATTERY APPLICATIONS

LED LIGHTING

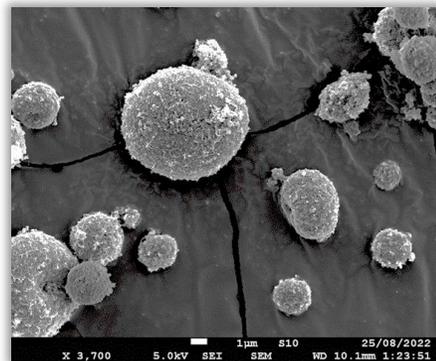
SEMI-CONDUCTOR CMP POLISHING

Our products in the lithium-ion cell

CATHODE

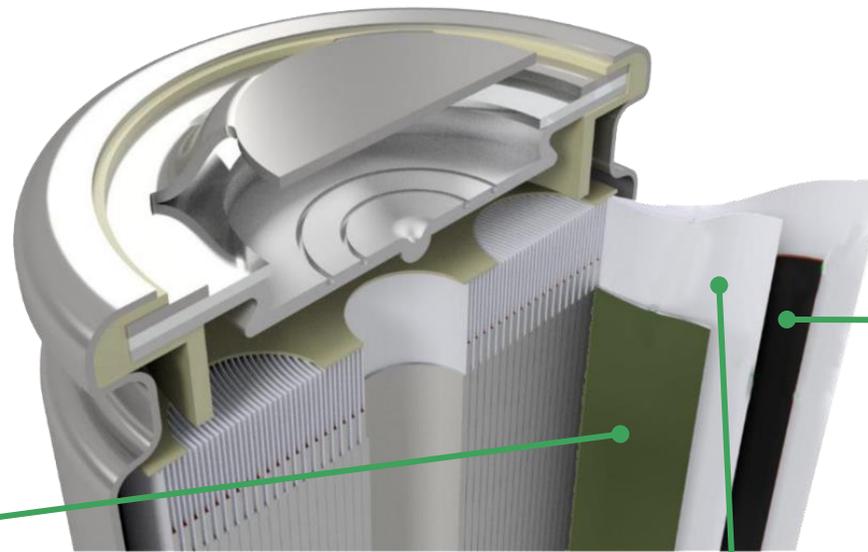
Cathode pre-cursors for NCA & NCMA and alumina coating

5N Al-Nitrate
+
5N Al-Sulfate



Boehmite coated cathode particles from Alpha's Al-Nitrates

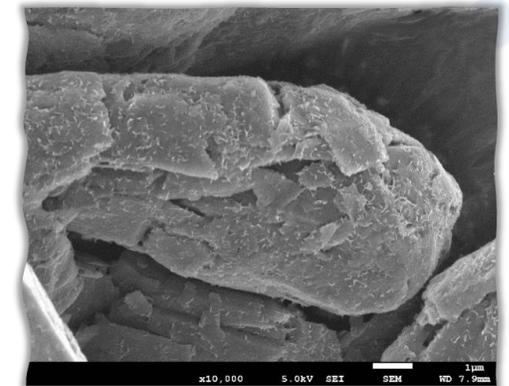
ALPHA HPA IN FINAL PHASE QUALIFICATION WITH 3 x GLOBAL CATHODE OEM'S



ANODE

Pre-cursors for coating graphite and silicon anode

5N Al-Nitrate

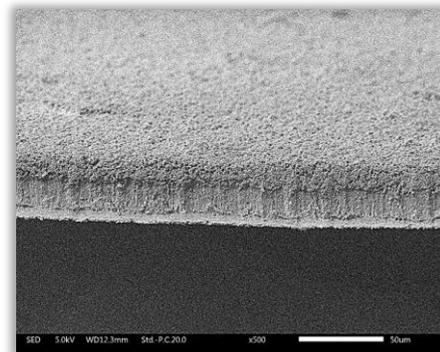


Boehmite coated anode particles from Alpha's Al-Nitrates

SEPARATOR

Ceramic coating for thermal management

HPA & High Purity Boehmite

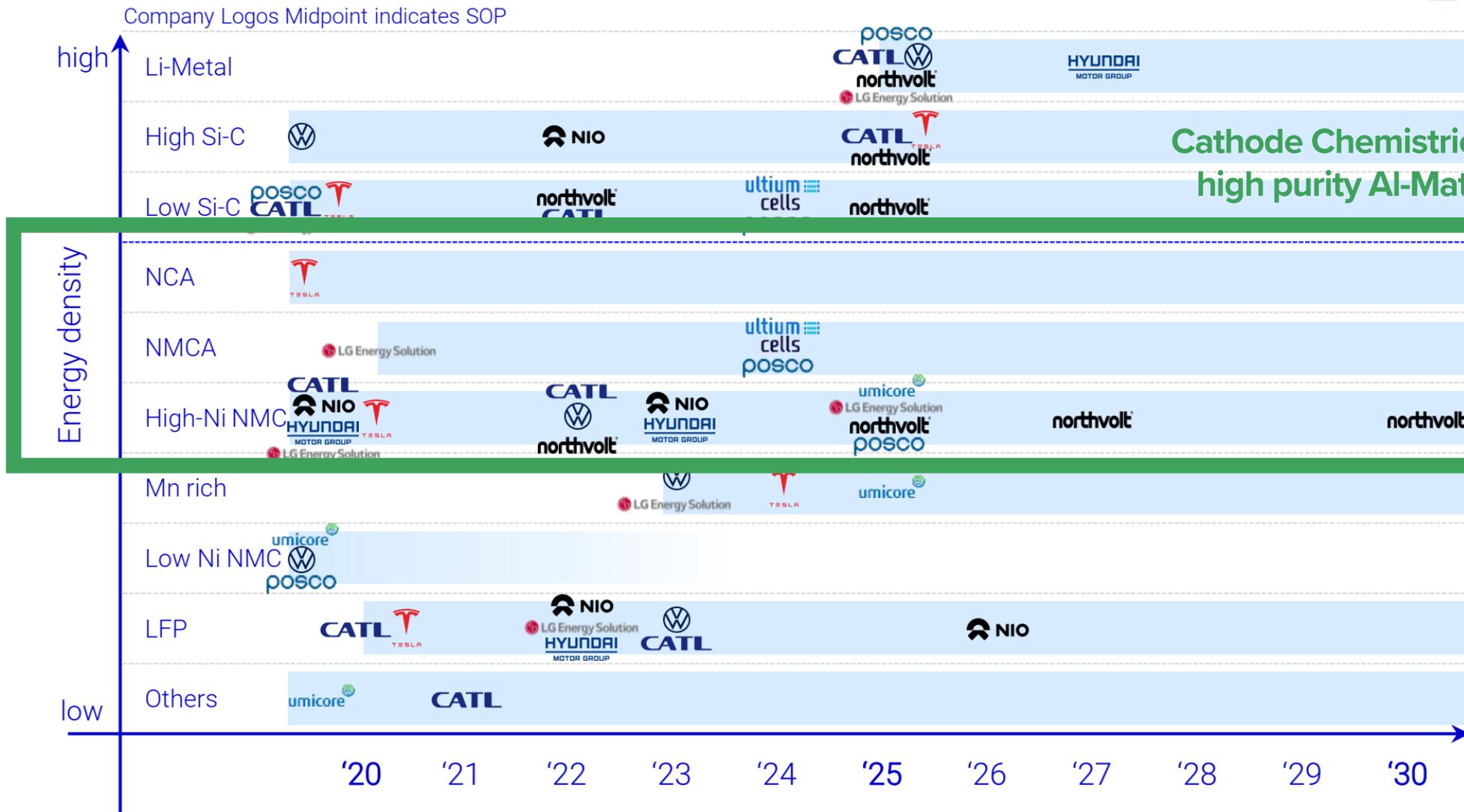


Alpha's HPA coating Li-B separator separator (courtesy FBICRC)

ALPHA HPA QUALIFIED WITH LEADING GLOBAL SEPARATOR OEM

ALPHA HPA IN TEST WORK PHASE WITH 8 x ANODE OEM'S AND DEVELOPERS





Cathode Chemistries with high purity Al-Materials

9/23/2022

High Si-C: Si content $\geq 20\%$
 Low Si-C: Si content $< 20\%$

High-Ni NMC: Ni content $\geq 80\%$
 Low-Ni NMC: Ni content $< 80\%$

Alpha HPA | Market Entry Approach Al-Salts

¹⁾SoF

Li-B Sector: Cathode applications

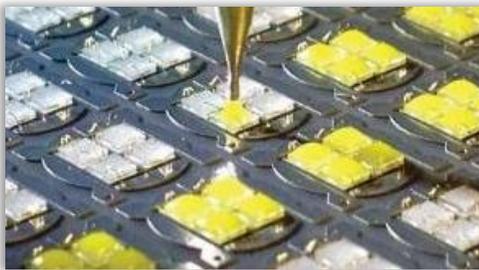


Our products in LED lighting

LED PHOSPHORS

Synthesis of Aluminate (YAG) Phosphors for white LEDs

HPA
+
5N Al-Nitrate



Addition of YAG phosphors to LED lighting circuits

ALPHA HPA QUALIFIED WITH 2 EU BASED LED PHOSPHOR OEM'S

SAPPHIRE GLASS WAFERS

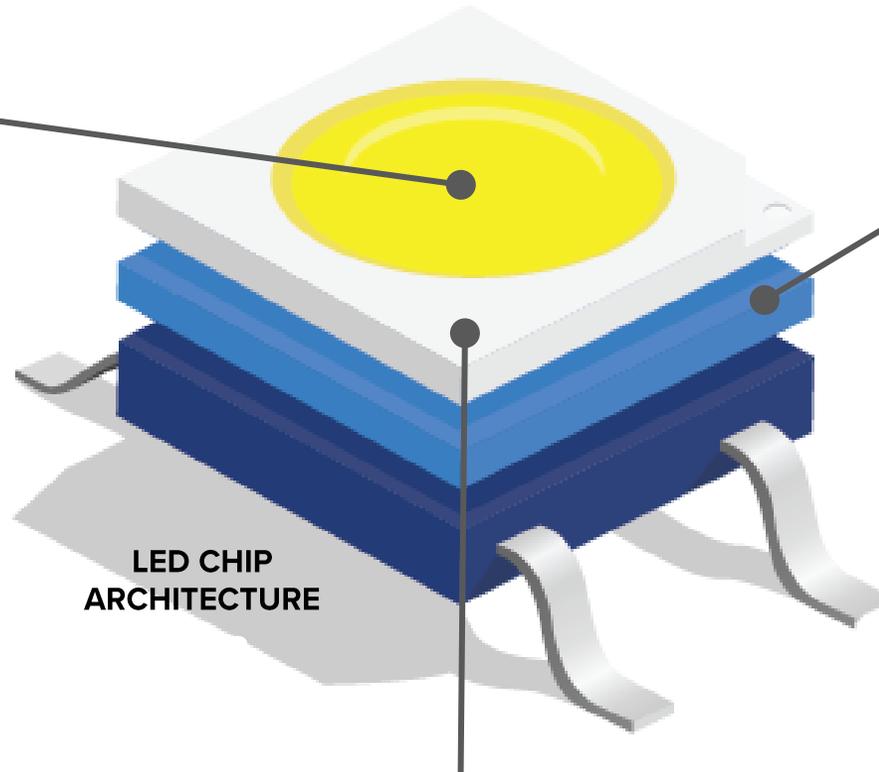
Sapphire crystal growth cut to sapphire wafer

HPA Pellets



Addition of YAG phosphors to LED lighting circuits

ALPHA HPA QUALIFIED WITH US BASED SAPPHIRE GROWER

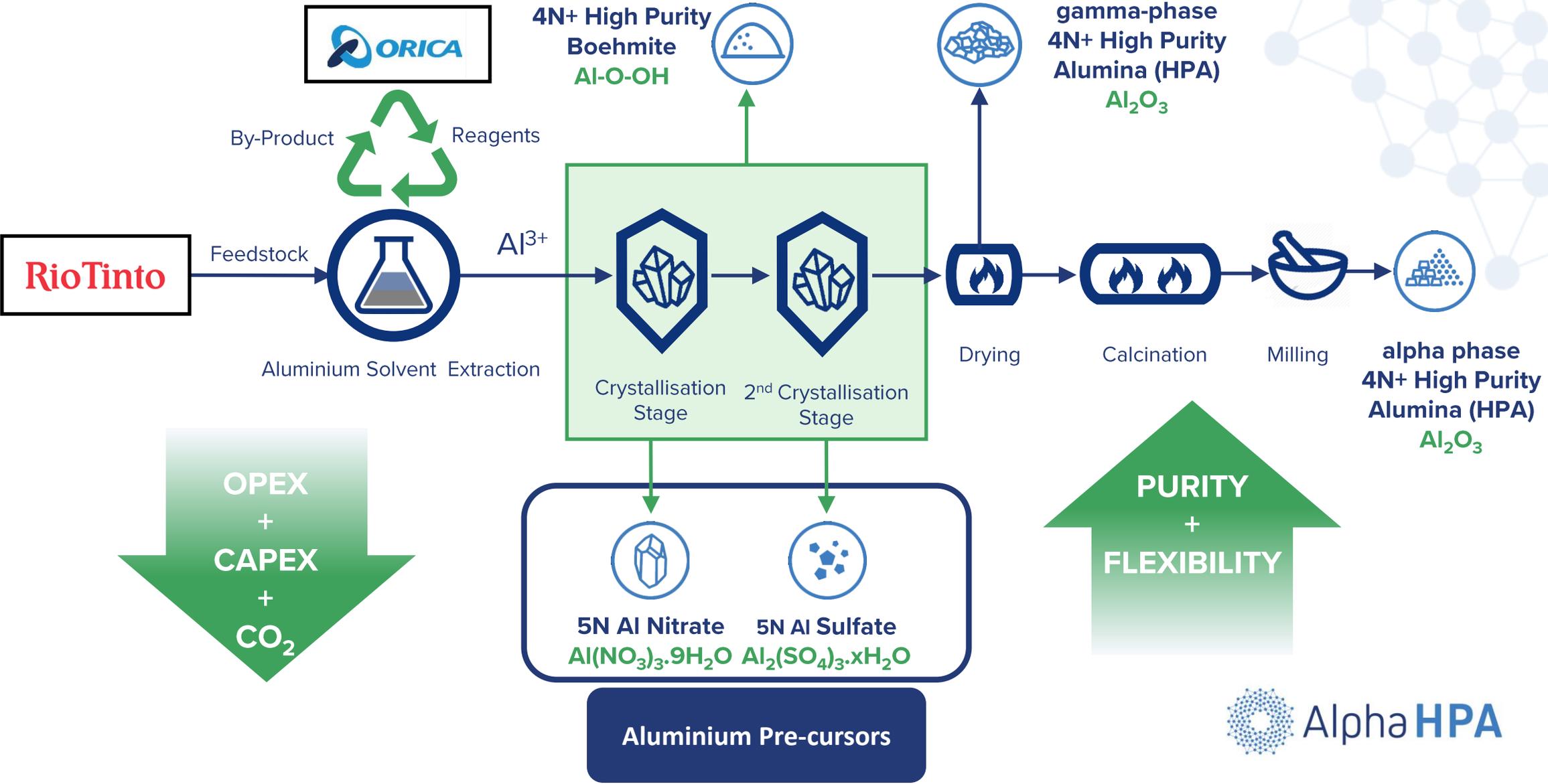


Ga-N circuit & Al-N Active Layers

ALPHA HPA QUALIFIED WITH JAPAN BASED AL-N MANUFACTURER



Our Process: World First SX Aluminium Plant



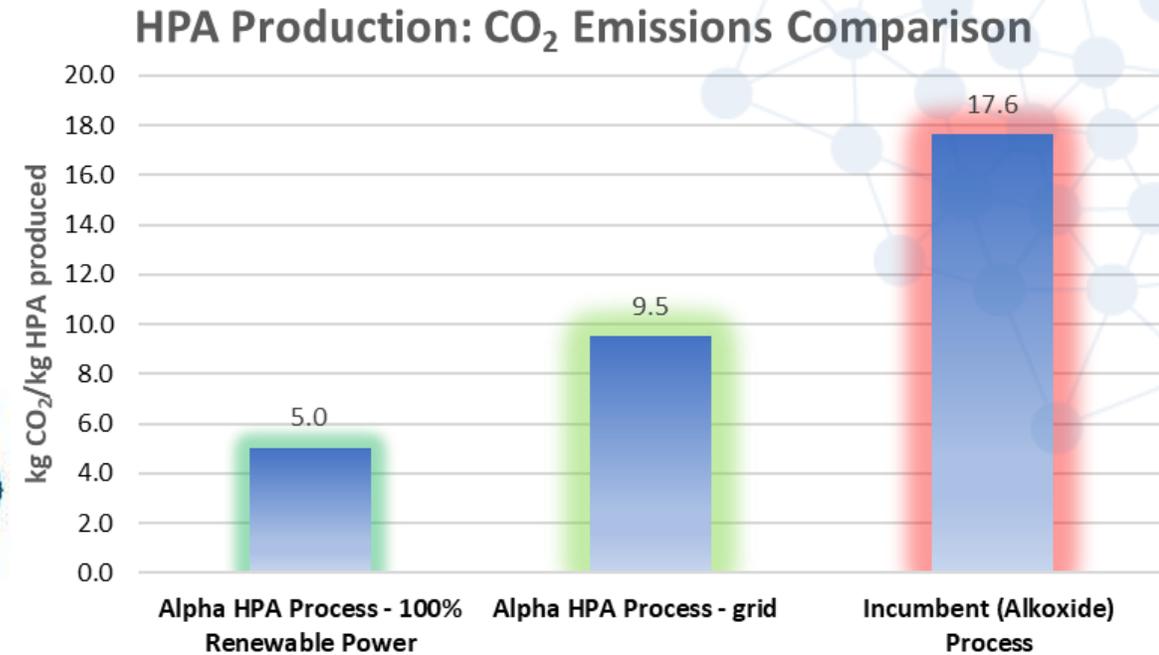
CO₂ Emissions Summary

~70% lower total emissions in feedstock and production process combined compared to the incumbent process

EMISSIONS REDUCTIONS

1. We do not use Al metal as feedstock
2. We recycle our reagents
3. We use 100% renewable energy

~70% lower total CO₂ emissions



Pathway to zero emissions via future adoption of H₂ drying and calcination



STAGE 1 - COMMISSIONING UNDERWAY

- Full Scale 10ha project site secured
- Stage 1: Commissioning underway
- Adjacent to Orica Australia to allow for Project Interface
- Definitive Orica Agreements in place



HPA First Project Site
Gladstone State Development Area,
North Queensland

HPA First Project: Location

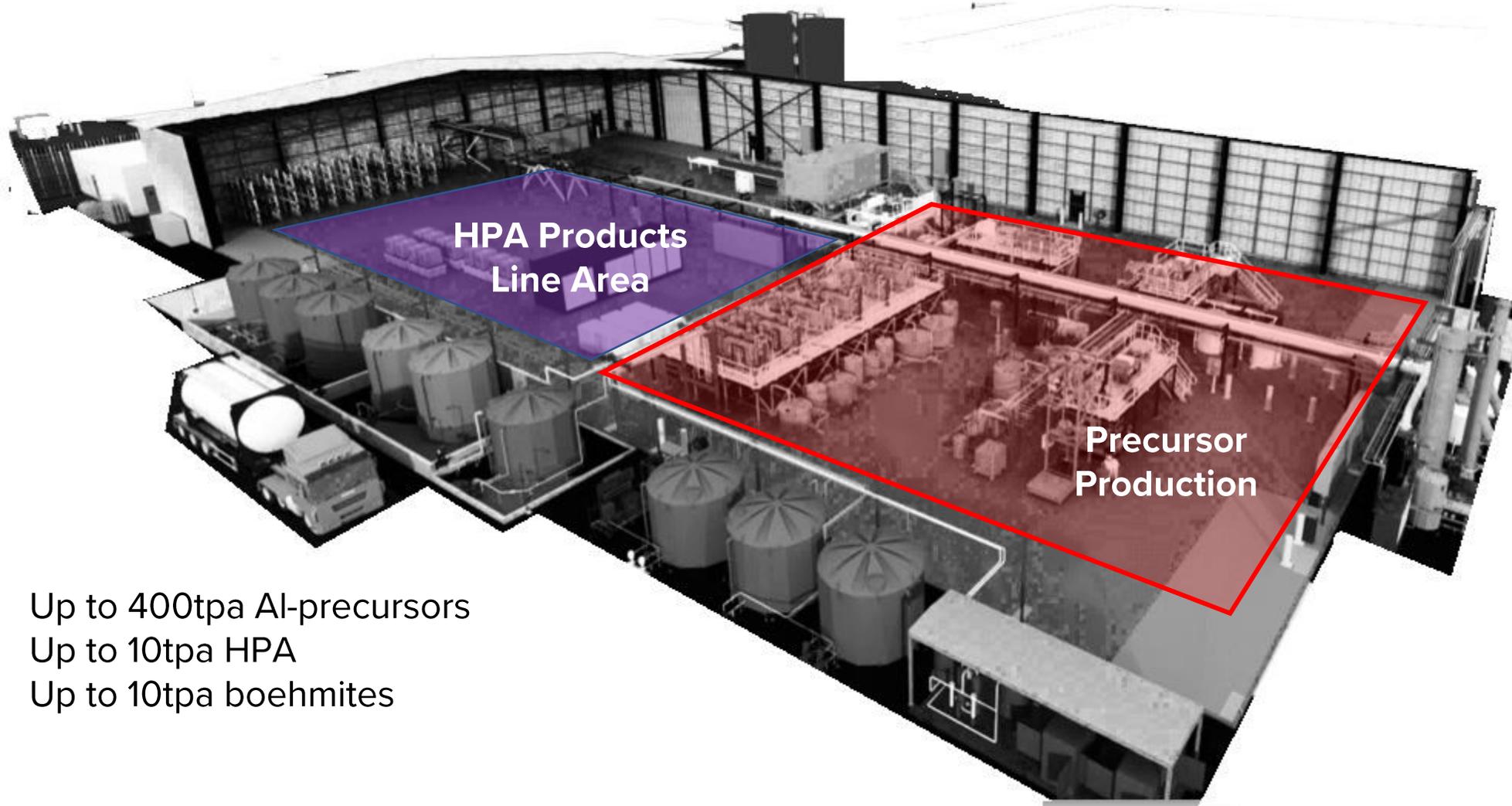




Stage 1 : Commissioning Commenced

Stage 1: HPA Products roll-out

- Fully funded by \$15.5M critical Minerals grant – first drawdown due November 2022



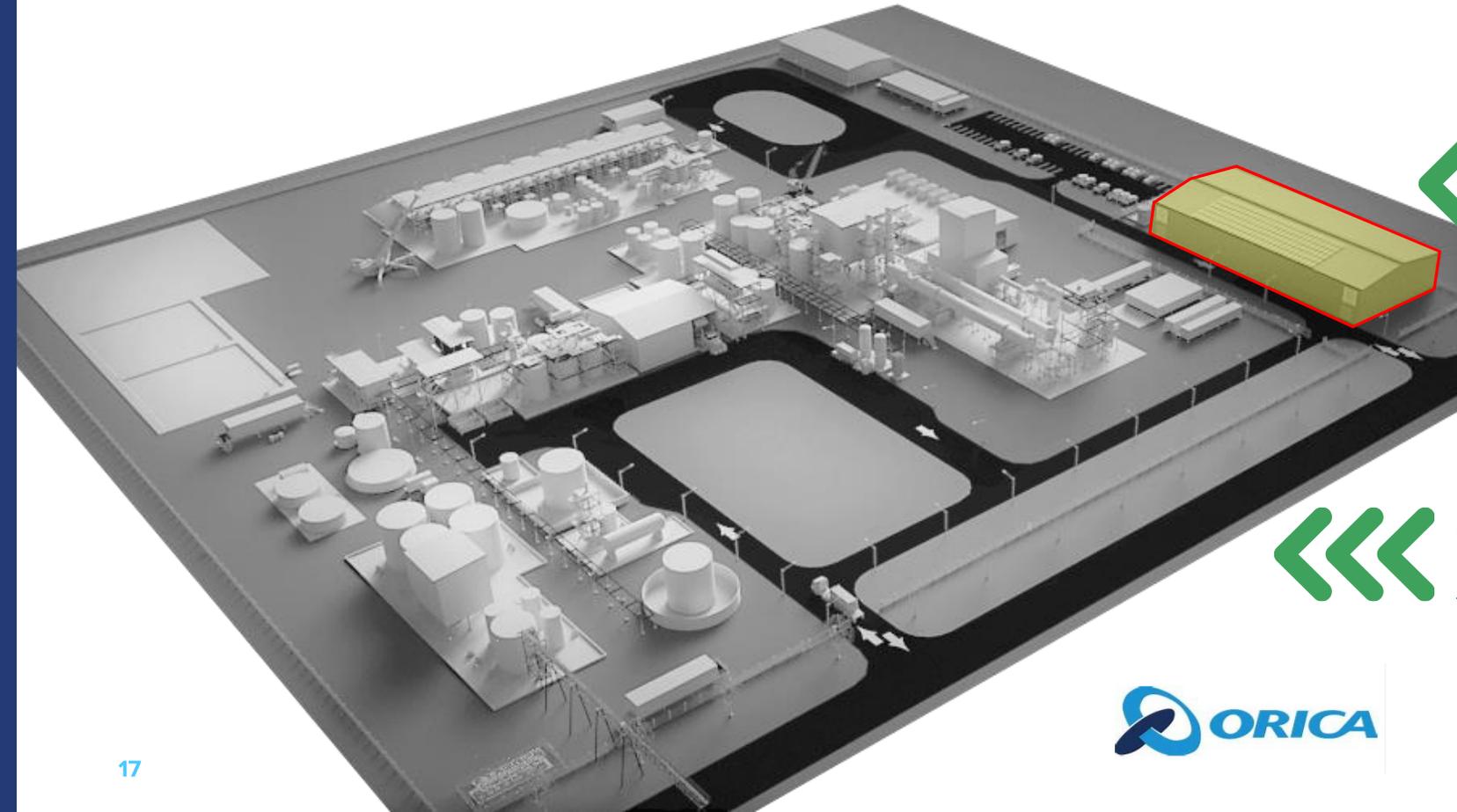
- Up to 400tpa Al-precursors
- Up to 10tpa HPA
- Up to 10tpa boehmites

Project Layout:

Stage 1: Now Commissioning

Stage 2: Full Scale Facility

- Stage 1 to be incorporated into the full scale HPA First Plant as a dedicated unit for 5N Al-Sulfate.
- alphahpa.com.au/our-projects



\$35M Stage 1 – In Commissioning
Additional \$15.5M Aust Govt Grant



Stage 2 – Full-scale facility on same site
\$45M Aust Govt Grant



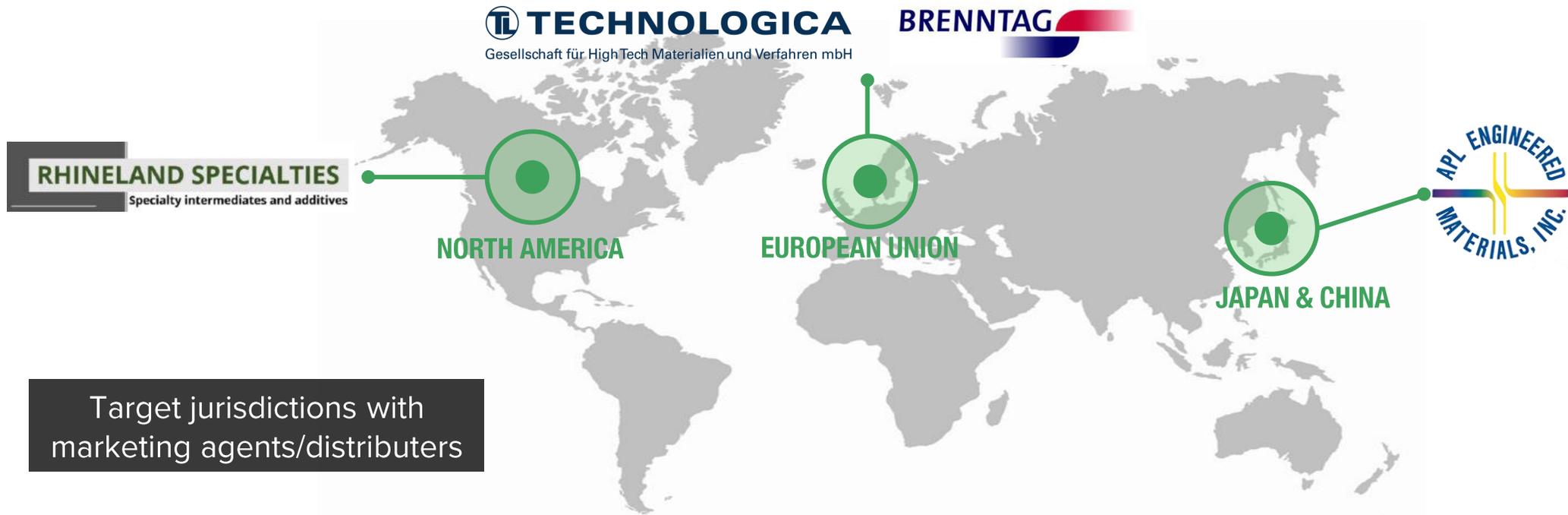
Our Customers and Partners:

- Existing customers, marketing agents and key business partnerships



HPA First Project: Global Product Marketing

- Global marketing network well established
- >100 product samples now distributed globally to >40 end users
- Products qualified for sapphire glass, LED phosphors and separator coatings
- Al-nitrate and HPA sales commenced
- Multiple bids submitted for high value supply contracts
- A further +30 separate end users testing/qualifying multiple products



Corporate Snapshot

TRADING INFORMATION

ASX CODE	A4N
Share Price (22/11/2022)	~60c
52-week trading range	37.5c – 70c
Issued Shares	857.2M

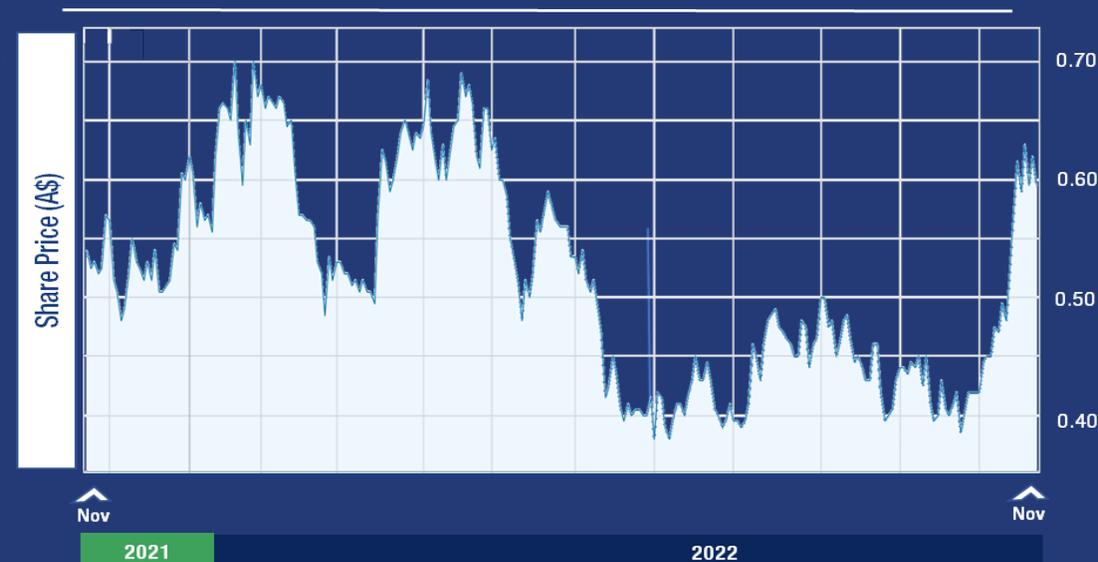
CAPITAL STRUCTURE

Issued Shares	857.2M
Unlisted options (@35c)*	5.0M (expire 30 Sept 2023)
Unlisted options (@35c)	26.0M (expire 31 July 2023)
Unlisted options (@90c)	11.4M (expire 30 April 2025)

Market Cap	\$514M
Est Cash (18-11-2022)	~\$25M – No Debt
Enterprise Value	\$489M

* Licensor Options

SHARE PRICE PERFORMANCE – 12 MONTHS



SHAREHOLDERS

TOP 20

Regal Funds



Permgold P/L (N. Seckold)



Orica Investments



Contact

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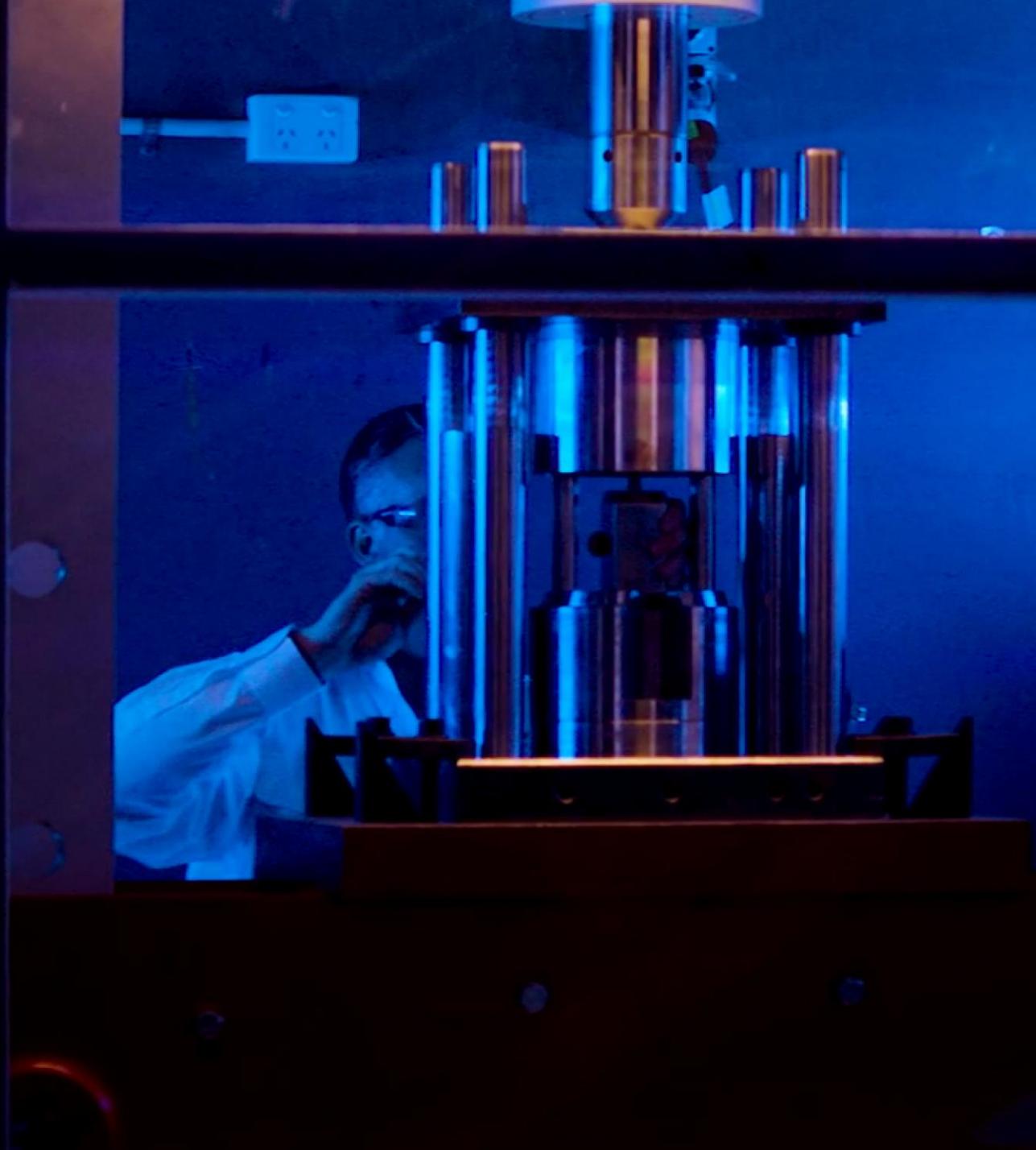
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THANK YOU



Alpha HPA