

Alpha HPA

HPA FIRST PROJECT



**ULTRA PURE – LOW CARBON
ALUMINIUM MATERIALS**

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.

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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

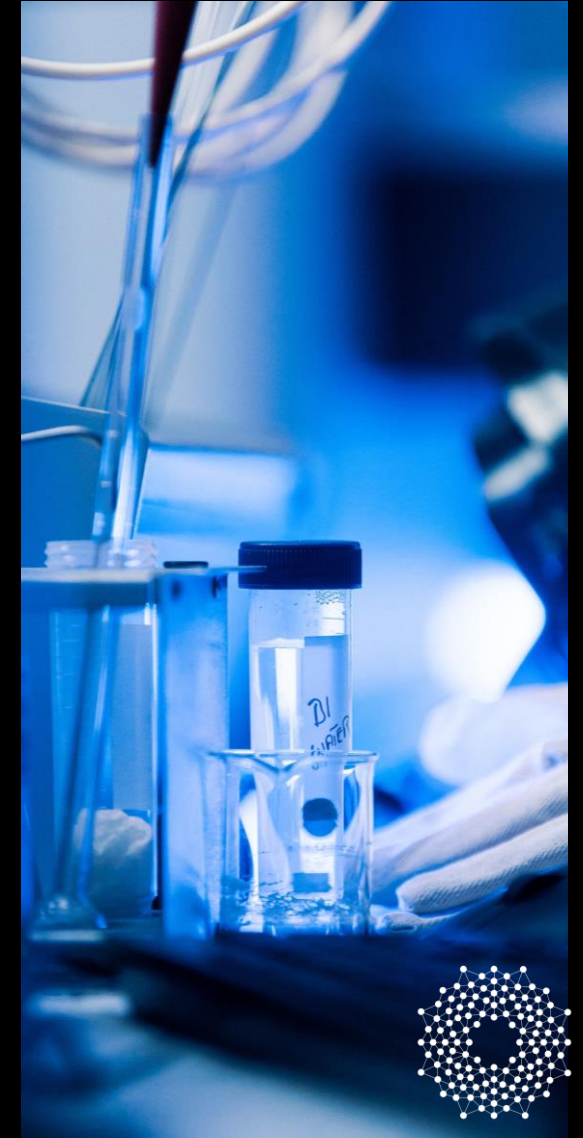
we are commercialising in 2 Stages as the

HPA FIRST PROJECT

STAGE 1 – IN PRODUCTION

EXPANDING WITH A\$15.5M CMDP GRANT

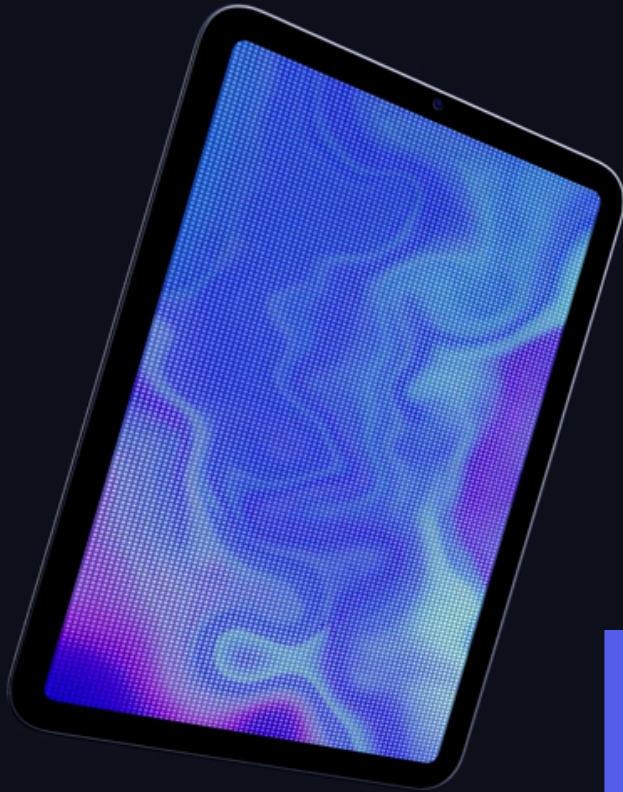
STAGE 2 – MOVING TO F.I.D



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LED-LIGHTING

The current technology driver of de-carbonisation



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

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



- **LOI with Ebner–Fametec to install up to 1,000 sapphire growth units**
- **LOI with Litec –LLL to supply HPA for LED phosphors**

WE SUPPLY

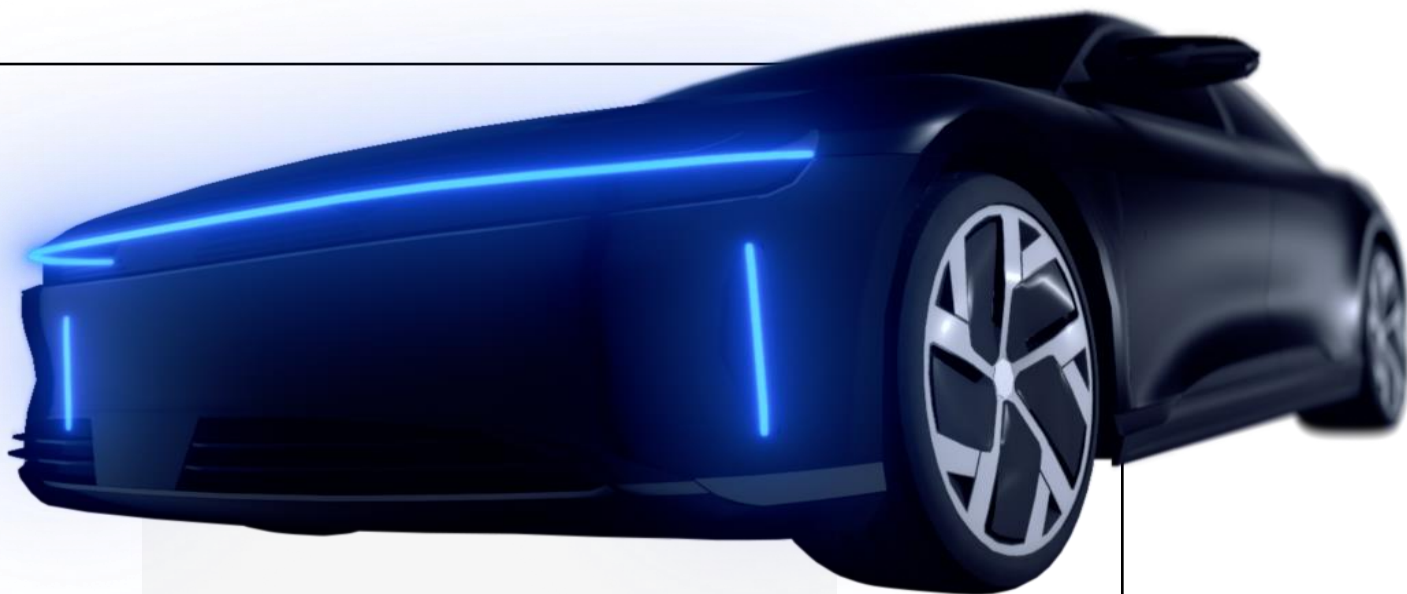
- ✓ **HPA for LED sapphire substrates**
- ✓ **HPA for LED phosphors**
- ✓ **Synthetic sapphire glass**



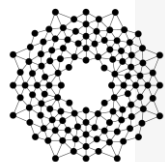
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E-MOBILITY

**The next major driver of
de-carbonisation**



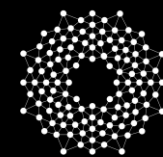
**GLOBAL EV SALES TO REACH
50M UNITS BY 2030**
(SOURCE UBS)



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WE SUPPLY

- ✓ HPA for Li-B separators
- ✓ HPA for Li-B cathode
- ✓ HP precursors for Li-B anodes



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SEMI-CONDUCTORS

Global Supply Chains Re-Shoring/Friend-Shoring



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

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

THE USA CHIPS+ ACT

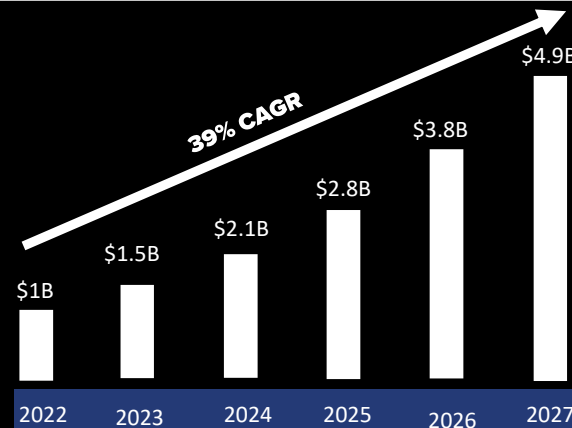
WILL INJECT

USD\$130B

 in

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

Value of SiC Semiconductors in EV's (US\$M)

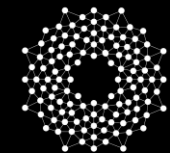


Source: Wolfspeed

**LOI to supply up to 1,000tpa to South Korean
semiconductor sector**

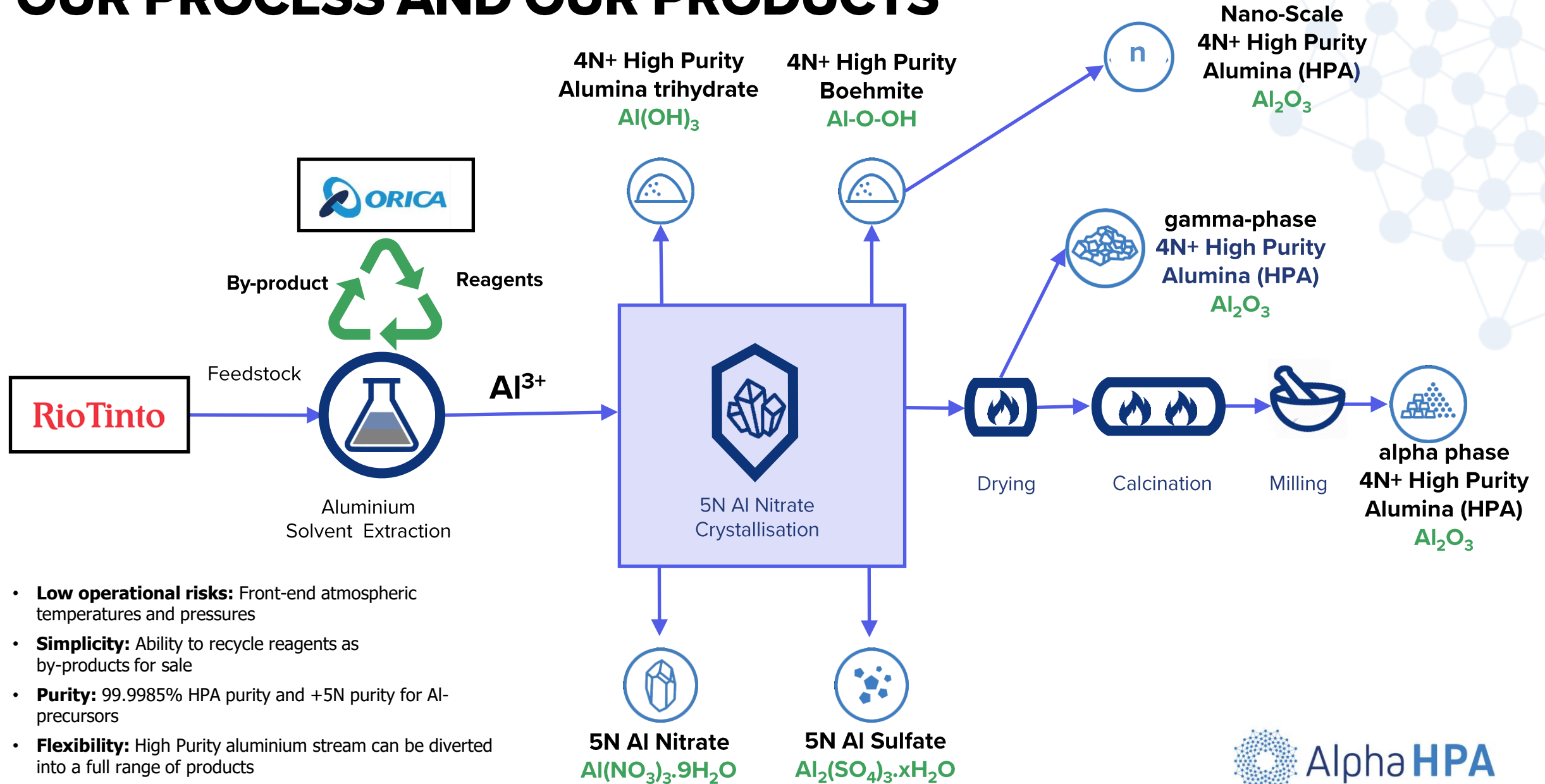
WE SUPPLY

- ✓ HPA for Semiconductor packaging
- ✓ Al-Nitrates for CMP slurry
- ✓ Nano HPA for CMP slurry (for SiC chips)



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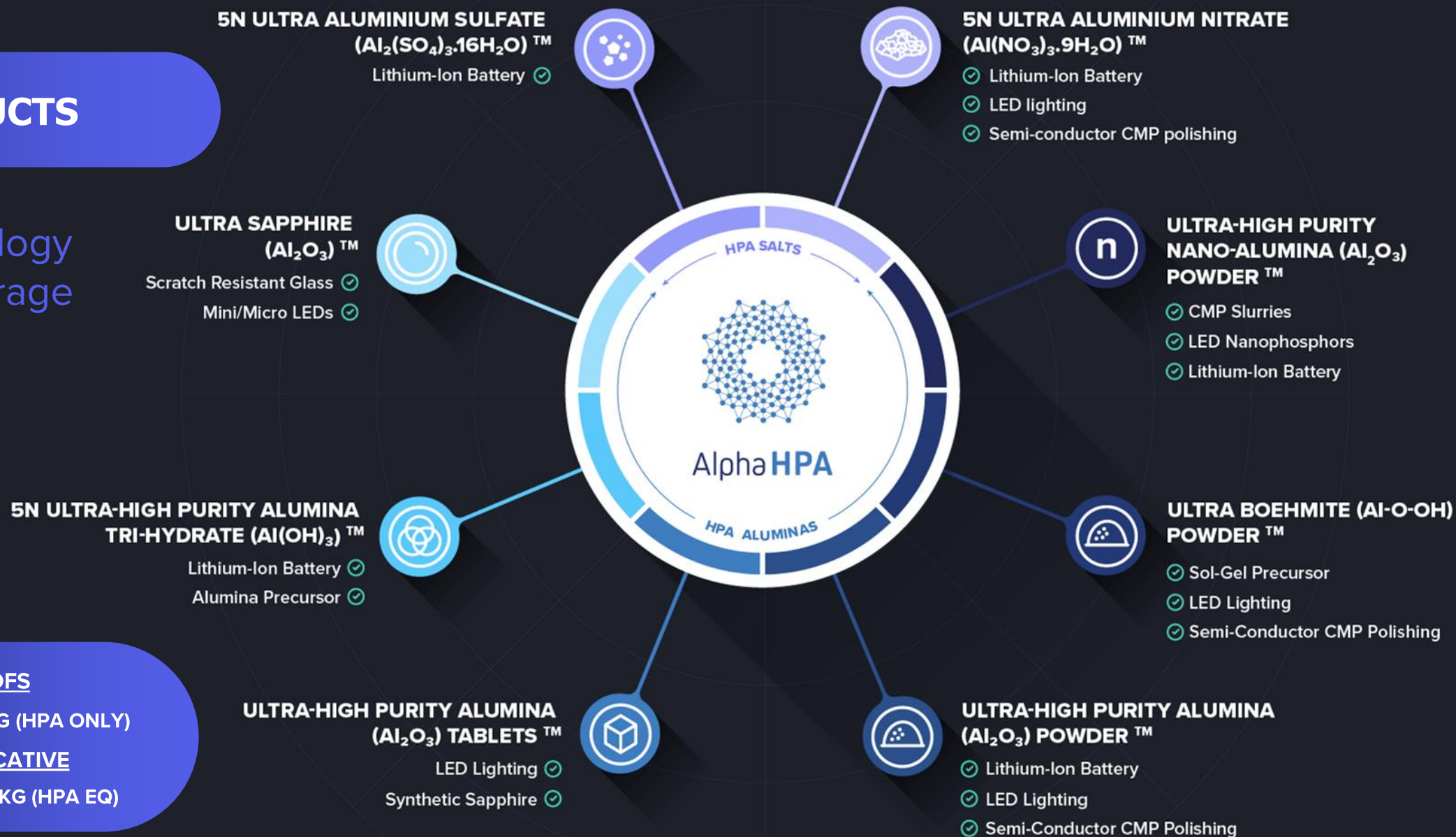
OUR PROCESS AND OUR PRODUCTS



- **Low operational risks:** Front-end atmospheric temperatures and pressures
- **Simplicity:** Ability to recycle reagents as by-products for sale
- **Purity:** 99.9985% HPA purity and +5N purity for Al-precursors
- **Flexibility:** High Purity aluminium stream can be diverted into a full range of products

OUR PRODUCTS

high technology
sector coverage



2020 DFS

US\$15 – US\$25/KG (HPA ONLY)

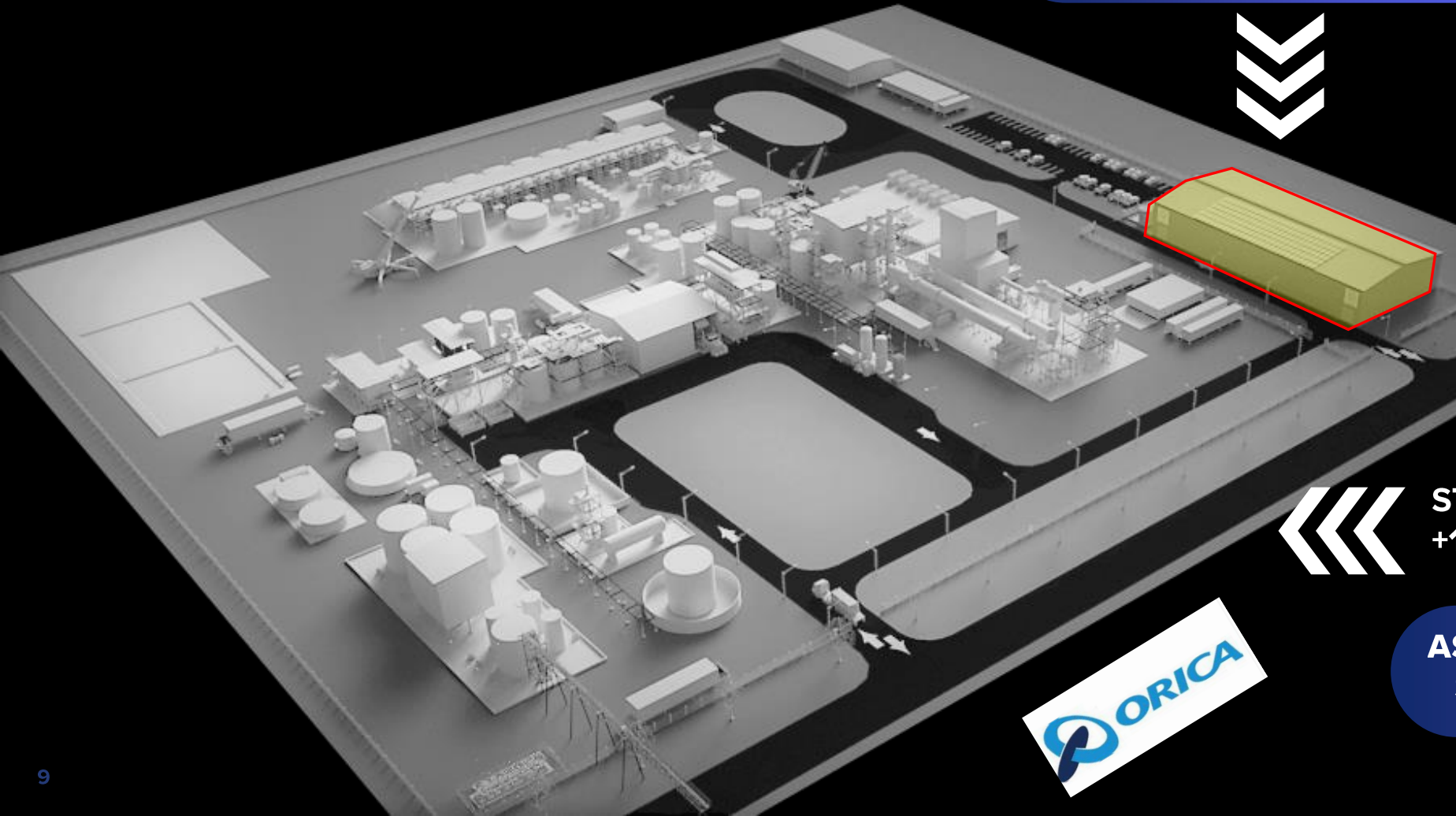
2023 INDICATIVE

US\$20 – US\$30/KG (HPA EQ)

PROJECT LAYOUT:

STAGE 1: IN PRODUCTION
+350tpa – ALL PRODUCTS

A\$15.5M Critical Minerals Grant
Under Deployment



STAGE 2: FULL-SCALE FACILITY
+10,000tpa – ALL PRODUCTS

A\$45M MMI-C Grant (Aust Govt)
\$21.7M IPP Grant (QLD Govt)



- Alpha ownership of 10ha project site
- Stage 1 - IN PRODUCTION
- Adjacent to Orica Australia to allow for Project Interface



HPA First Project Site
Gladstone State Development Area
Central Queensland

HPA FIRST PROJECT: **STAGE 1**



STAGE 1: IN PRODUCTION



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STAGE 1: EXPANSION NOW COMMISSIONING



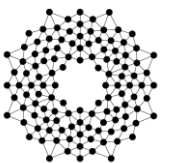
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ORICA STRATEGIC INVESTMENT:

- **ASX 100 Company Orica Ltd (ASX: ORI) acquired a 5% strategic interest in Alpha HPA (Nov 2022)**
- **Orica and Alpha have worked together on the HPA First Project since 2019**
- **The investment builds upon binding arrangements to supply chemical reagents and offtake by-products at the HPA First Project, Gladstone**
- **Significant external endorsement of the capability, safety and operability of the process**
- **MoU signed to assess high purity aluminium products plant in North America (Alberta)**



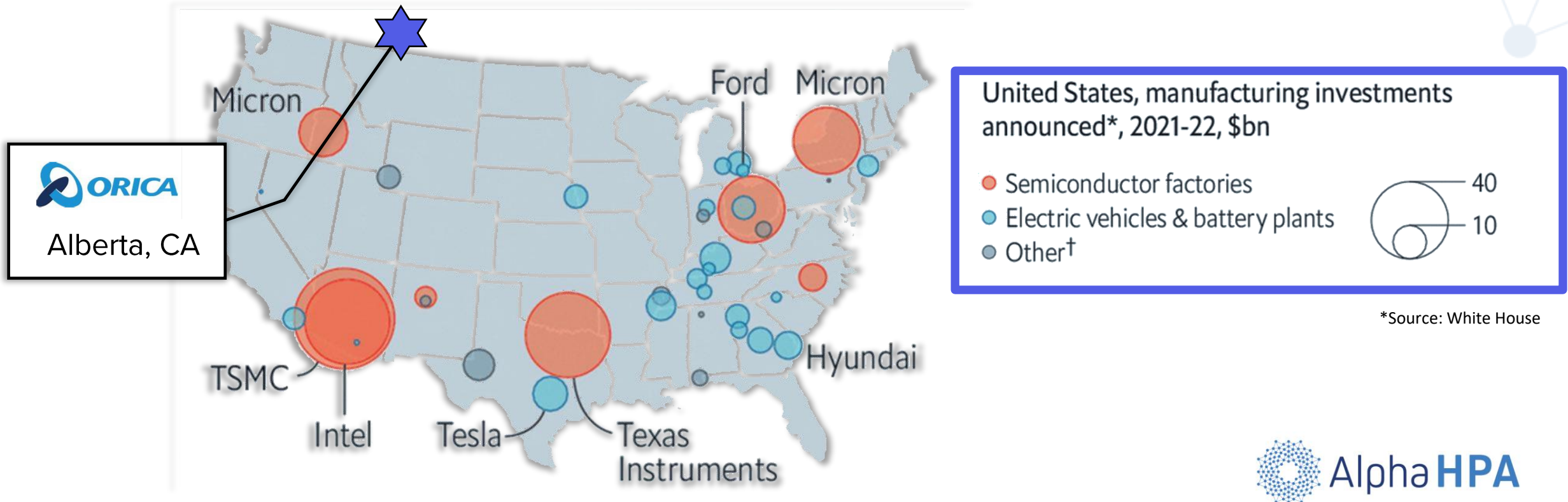
Reagent delivery from Orica



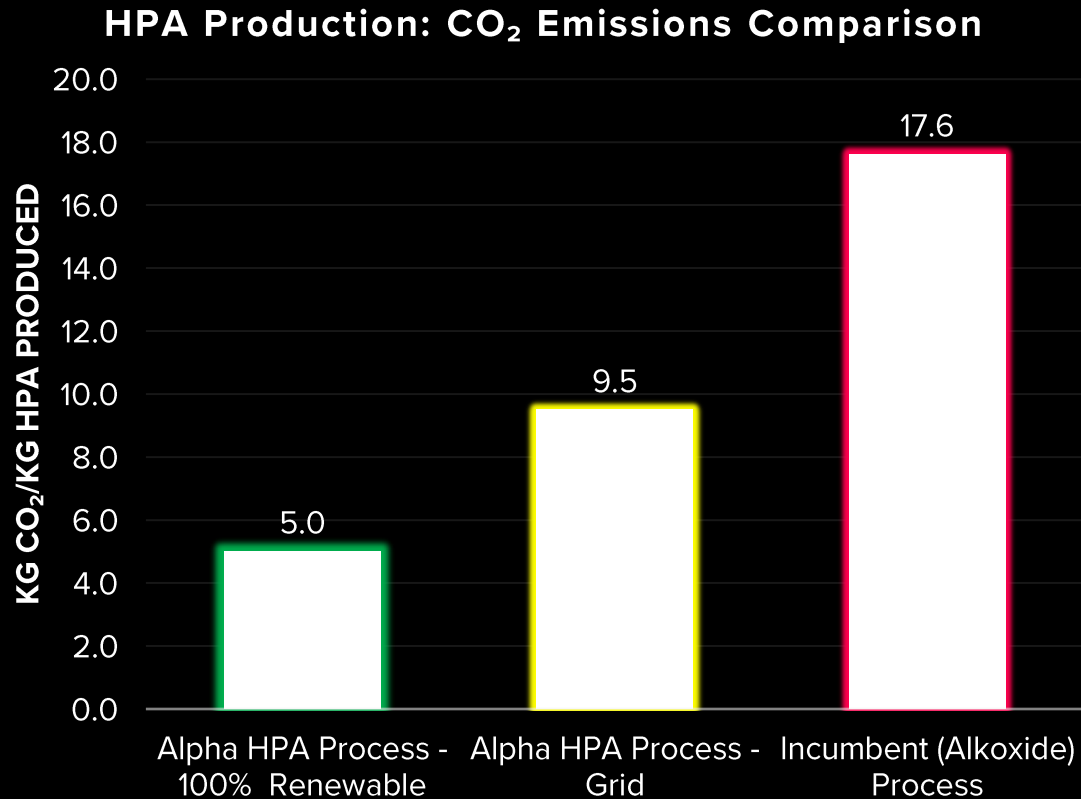
Alpha**HPA**

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LOWER CARBON HPA



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

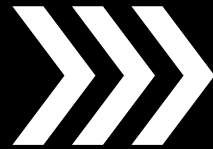
Emissions Summary

~71% 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**

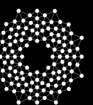
ALPHA SAPPHIRE: ADDING DOWNSTREAM VALUE TO HPA



- **March 2023:** Agreements with Ebner-Fametec for staged entry into sapphire glass production
- **June 2023:** Expanded agreements for up to 1,000 growth units
- Unique supply/demand dynamics, favourable to new market entry
- estimated **10x net revenue uplift** per alumina unit.

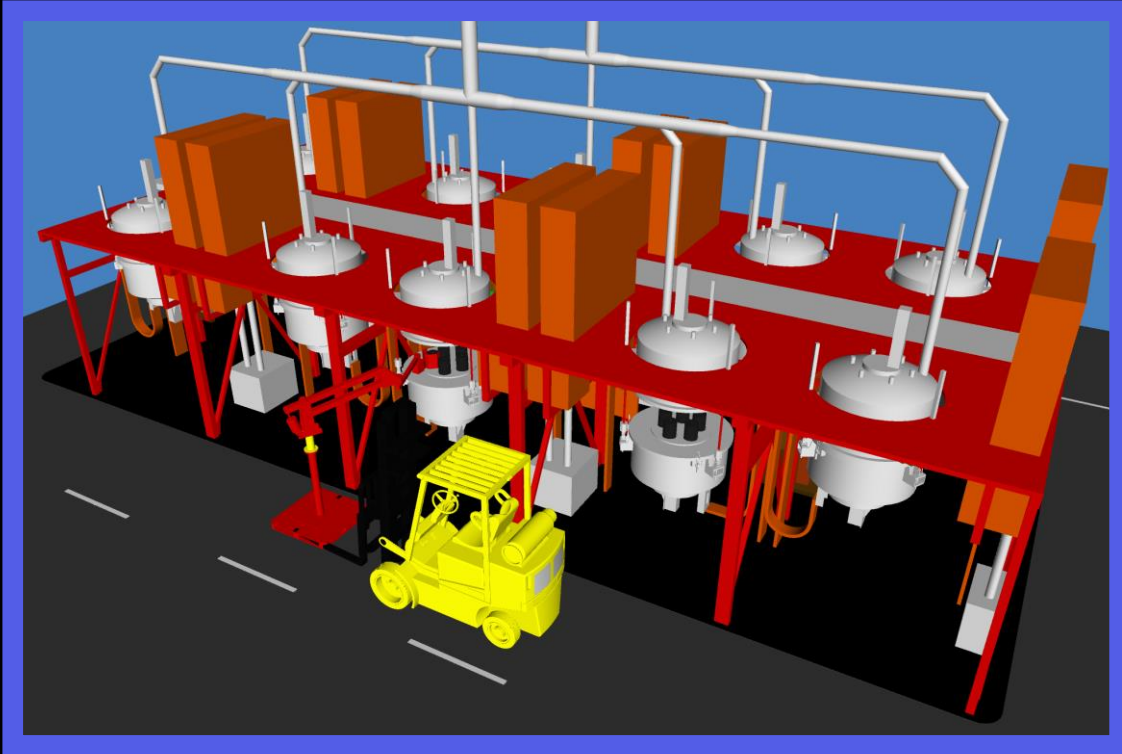


Alpha **SAPHIRE**



Alpha **HPA**

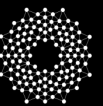
ALPHA SAPPHIRE: UNIQUE SECTOR OPPORTUNITY



- **Technology Disruption:** Access to new Ebner-Fametec Technology
- **Supply Crunch:** End-user desire to de-link from Russia-China production
- **Demand Pull:** Major new demand from micro-LED adoption



Alpha **SAPPHIRE**



Alpha **HPA**

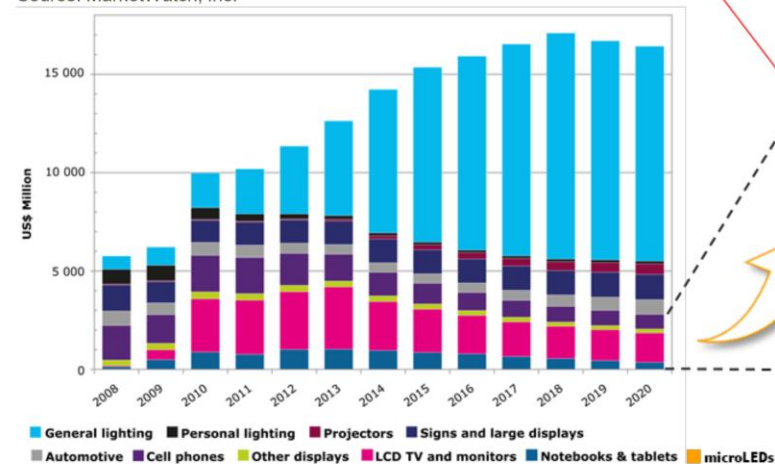
Micro LEDs: THE LED MARKET MULTIPLIER

- Market analysts have forecast the adoption of micro-LEDs since 2015
- The recent confirmation that Apple is now making the move is considered highly significant, with the potential to double existing LED market
- <https://appleinsider.com/articles/23/01/15/apple-plans-microled-displays-in-everything-after-2024-apple-watch-ultra-update>
- <https://www.bloomberg.com/news/articles/2023-01-11/apple-to-begin-making-in-house-screens-in-2024-in-shift-away-from-samsung?sref=mNNF3hqD>
- <https://www.electrooptics.com/analysis-opinion/microleds-prepare-take-flight>

MicroLED Market

*MicroLEDs set to double the size of the entire LED market: +17 Billion USD by 2025**

Source: MarketWatch, Inc.



OUR CUSTOMERS AND PARTNERS:

- Existing customers, marketing agents and key business partnerships



CORPORATE SNAPSHOT

TRADING INFORMATION

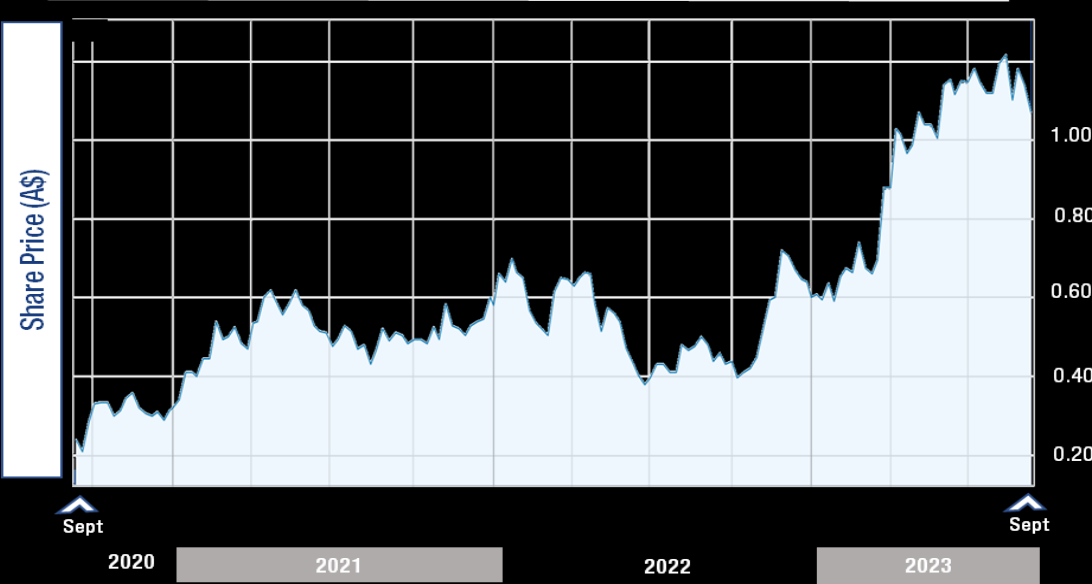
ASX CODE	A4N
Share Price (12/09/2023)	~\$1.18c
52-week trading range	37.5c – 1.22c
Issued Shares	879.0M

CAPITAL STRUCTURE

Issued Shares	879.0M
Unlisted options (@35c)*	5.0M (expire 30 Sept 2023)
Unlisted options (@90c)	9.12M (expire 30 April 2025)
Unlisted options (@90c)	3M (expire 31 Aug 2025)
Market Cap	~\$1.04B
Est Cash (30/06/2023)	~\$20M – No Debt
Enterprise Value	\$1.02B

* Licensor Options

SHARE PRICE PERFORMANCE – 3 YEARS



SHAREHOLDERS

TOP 20		55%
Regal Funds	8.27%	
Permgold P/L (N. Seckold)	7.85%	
Orica Investments	5.25%	

Thank You

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