

Alpha **HPA**

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ASX: **A4N**  
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## **HPA FIRST PROJECT UPDATE** **SUPPLYING DE-CARBONISATION**

### **STAGE 1 – PPF: NOW COMMISSIONING**

- **Plant commissioning advanced**
- **All civil works complete**
- **Electrical and instrumentation commissioning near complete**
- **Water flushing 85% complete**
- **First aluminium feedstock and SX chemical deliveries**
- **Preparations advanced for high purity alumina (HPA) circuit**
- **HPA circuit fully-funded through the Critical Minerals Grant**

### **PRODUCT MARKETING**

- **Project site visit by Li-B cathode manufacturer**
- **A further four Li-B anode groups commence Al-nitrate based coating**
- **Nano HPA qualified, and bids submitted with Japan-based LED chemical company**
- **Increased product orders from US semiconductor sector**
- **Al-sulphate test samples to US and EU cathode manufacturers**

### **STAGE 2 – FULL SCALE**

- **Multi-product engineering advanced**
- **Lender and strategic investor site visits**

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide an update on project activities for its HPA First Project, representing the commercialisation and production of critical high purity aluminium products driving de-carbonisation.

Alpha is now in the commissioning stage at the Company's Stage 1, Precursor Production Facility (PPF) in Gladstone, QLD.

The Company is concurrently satisfying the remaining conditions precedent to the full-scale Project Final Investment Decision, with a focus on product sales, offtakes and project financing.

## STAGE 1 – PPF

### Plant commissioning advanced

Plant commissioning is well advanced, including:

- Stage 1 and 2 commissioning well progressed including
  - Powering all equipment
  - Leak testing
  - Control systems and instruments
- Water flushing 85% complete
- Stage 4 (chemical) commissioning commencing mid-November 2022

### Electrical and instrumentation commissioning near complete

Electrical and instrumentation pre-commissioning largely completed with target practical completion 28 October. Software Process Control System (PCS) handed over and being functionally tested

### First feedstock and chemical deliveries received

Alpha has taken first feedstock delivery from Rio Tinto Aluminium and the first solvent extraction (SX) extractants have been delivered. Main reagent deliveries from Orica are due to start in the first week of November.

### Preparation for high purity alumina circuit

Alpha is making preparations internally for the installation of the HPA circuit in anticipation of shortly completing the grant agreements for the \$15.5M grant funding approved under the federal government Critical Minerals Development Program (CMDP), formerly the Critical Minerals Accelerator Initiative.

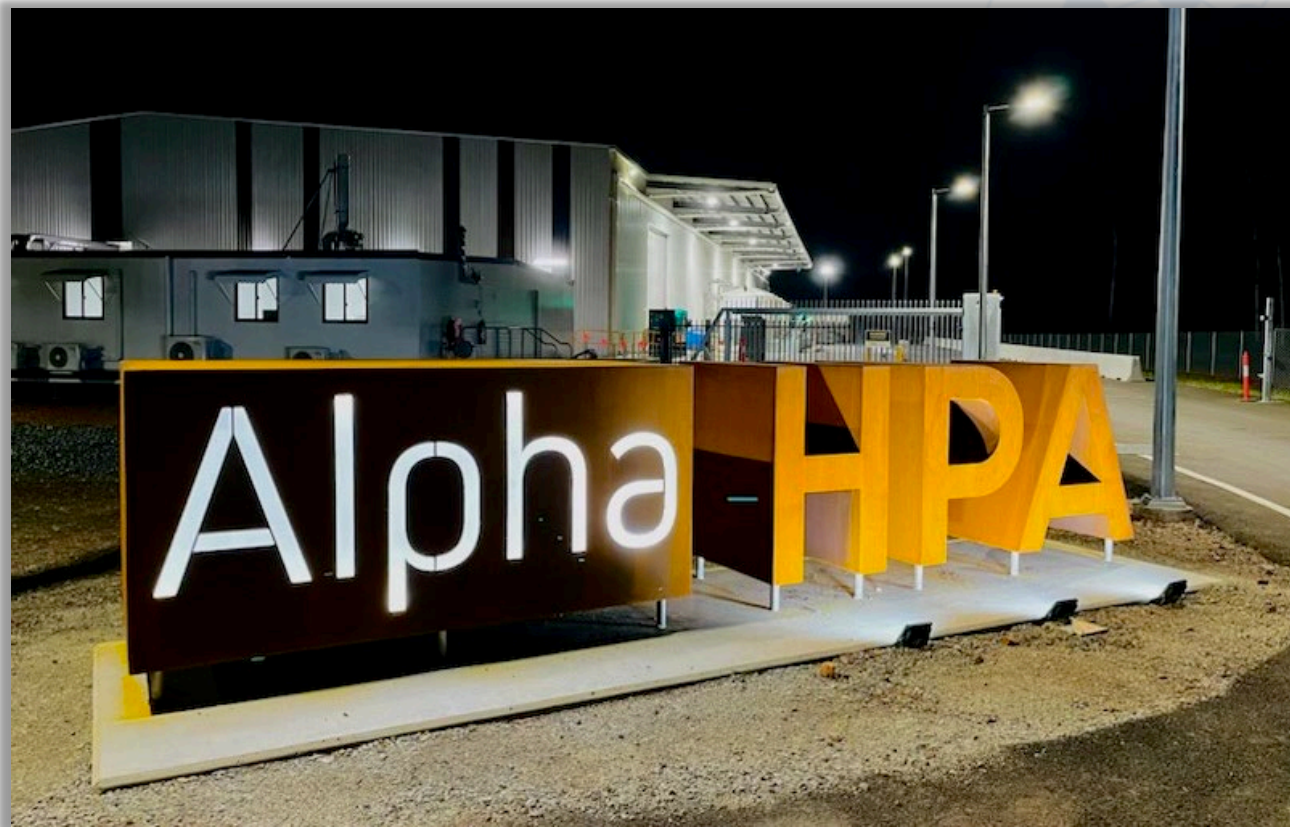
Alpha is targeting its first drawdown under the grant in November and will immediately place orders for longer lead time equipment.

Specifically, this CMDP grant funding will be directed towards:

- Further expanding Stage 1 PPF production capacity of aluminium nitrate and aluminium sulphate
- Facilitating up to 10tpa of additional capacity of HPA production
- Facilitating up to 10tpa of additional capacity of High Purity Boehmite production
- Facilitating the addition of tableting capacity to produce HPA tablets for sapphire glass growth
- Installation of a large rooftop solar array and potential battery storage capacity to manage peak demand



*First feedstock ready for feed preparation*



*Stage 1 PPF – external night view*

## PRODUCT MARKETING

### **Project site visit by Li-B cathode manufacturer**

Alpha has recently hosted a site visit from a large European Li-B cathode manufacturer with whom Alpha is in product qualification testing. The site visit is a required component of the on-boarding of their new suppliers.

### **A further four Li-B anode groups commence Al-nitrate based coating**

Alpha continues to expand end-user interest in aluminium-oxide coating of lithium-ion battery (Li-B) anode materials using the Company's 5N purity aluminium nitrate as the chemical precursor. As per the ASX announcement of 1 September 2022, the process is considered to provide a number of safety and performance benefits.

A further four Li-B anode groups, including both existing large scale anode manufacturers as well as anode developers, have now commenced aluminium oxide coating tests using Alpha's aluminium nitrate as a precursor.

Based on the expanding interest in this application, Alpha considers the wider adoption of the coating process to be capable of driving commercial volume demand for the Company's 5N purity aluminium nitrate.

### **Nano HPA qualified and bids submitted with Japan-based LED chemical company**

Alpha has been notified of successful qualification of Alpha's nano-alumina with a Japanese based chemical company which manufactures specialist materials for the LED sector. Price bids have been submitted through Alpha's Japanese marketing agents.

### **Further product orders from US semiconductor sector**

Product orders have been received for both nano-alumina and high purity boehmites, for testing by two further US based end users within the semiconductor industry. The final application is believed to be for polishing slurries for semi-conductor substrates.

## Multiple Al-sulphate test samples to US and EU cathode manufacturers

Within the last two weeks, Alpha has provided test samples of both hydrous and anhydrous, high-purity aluminium sulphate samples to cathode manufacturers in both the USA and the EU. Demand for commercial volumes of these materials from both potential customers is expected from next year.

## STAGE 2 – FULL SCALE

### Multi-product engineering advanced

Alpha has advanced engineering studies to incorporate multiple high purity aluminium products into Stage 2 of the HPA First Project. The Company has engaged an engineering and Structural, Mechanical & Piping (SMP) firm that specialises in off-site plant pre-assembly with a view to delivering material capital expenditure reductions in a final delivered plant.

### Lender and strategic investor site visits

Alpha has hosted site visits from two key potential Stage 2 Project financiers with the last 3 weeks.

A site visit for a potential strategic investor is being planned for November.

Commenting on progress at the Company's Stage 1 facility, Managing Director Rimas Kairaitis said:

*“With commissioning of the Stage 1 PPF progressing well we look forward to the commencement of chemical commissioning and production of our maiden batch of precursors in the weeks ahead. With production nearing we are enthused by the growing level of engagement from potential end-users, strategic investors and financiers in our HPA First project.”*

### About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of high purity alumina (HPA) and related high purity precursor products using the Company's proprietary licenced solvent extraction and HPA refining technology. The disruptive, low-carbon process technology provides for the extraction and purification of aluminium from an industrial feedstock to produce 4N (>99.99% purity) alumina and 5N (>99.999% purity) for sale into the lithium-ion battery and LED lighting industry.

Alpha completed a Definitive Feasibility Study in March 2020 following a successful pilot plant campaign in 2019. Alpha has since upscaled its Brisbane facility to demonstration scale and has now recorded over 8,000 operating hours and delivered an expanded range of over 100 high purity product orders to end-users globally.

Alpha is fully funded to the commercial production at its Stage 1, Precursor Production Facility which has now commenced commissioning ahead of commercial production of the Company's high purity Aluminium Precursors in the December quarter 2022.

The Company is now in the mature phases of market outreach and project financing with respect to the full scale HPA First Project, with the expectation of positioning the HPA First Project to Final investment Decision.

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