

The Manager Companies - ASX Limited
20 Bridge Street
Sydney NSW 2000

ASX Announcement
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(7 pages)

PROJECTS UPDATE

HPA FIRST PROJECT STAGE 2

- Earthworks progress on schedule
- Focus on key engineering to detail layout
- Key focus on vendor data to support 30% engineering
- WHS accreditation received
- Production Tax Credit review underway

PRODUCT MARKETING

- Test orders still building with 170 orders received since FID (May 2024)
- >3,000kg of sales and test orders under manufacture
- Further draft LOIs issued following US marketing
- Strong test results and further engagement within DLE sector
- Successful development of ATH granules for the DLE sector
- Steady build-up of small-scale sales in the semiconductor sector
- Al-Nitrate based coating capability developed for Li-ion pouch cells

HPA FIRST PROJECT STAGE 1

- Solvent Extraction (SX) and Al-Nitrate circuits at steady state
- HPA inventory reaches >15 metric tonnes
- Includes >1 metric tonne of sintered HPA tablets

ALPHA POLARIS (CANADA)

- Proposed Canadian Project named Alpha Polaris
- Concept product mix and plant capacity developed to progress studies
- Operating with Orica team under the November 2022 MOU

Alpha's Managing Director, Rimas Kairaitis said, "We continue to be pleased to continue to advance the business on multiple fronts. On the product marketing front, the expanding interest from the semiconductor and the direct lithium extraction (DLE) sectors are particularly encouraging. We also very pleased to be advancing concept work on a potential second large scale facility."





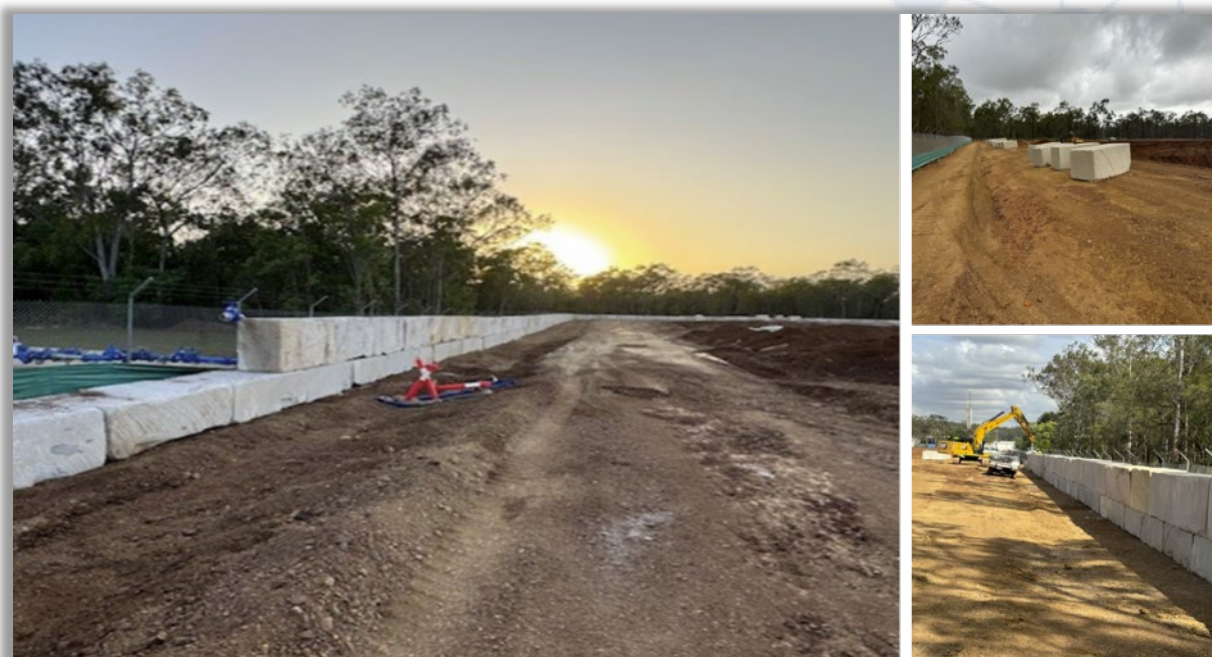
HPA First Project site looking southwest, showing earthworks near completion. Orica Yarwun to the top right of picture, lined retention ponds to the right of picture.

Alpha HPA Limited (**Alpha** or **the Company**) (ASX: A4N) is pleased to provide an update on project activities for both **Stage 1** and **Stage 2** of the HPA First Project in Gladstone, Queensland, as well as an update on the newly named **Alpha Polaris**, being the concept to develop an additional high-purity aluminium material manufacturing facility adjacent to Orica's facility in Alberta, Canada.

HPA FIRST PROJECT STAGE 2

Earthworks

Stage 2 earthworks are progressing on schedule with retaining wall emplacement and site fill complete. Raw water connection is complete and process, trade waste and stormwater ponds under construction with pond liners being rolled out a work in progress. *(refer photos below and previous page).*



Installation of Stage 2 site retaining wall

Engineering

The Project engineering team continues to build out in Brisbane, with a near term focus on completing the key engineering threshold which will allow for finalisation of civil design and commencement of site civil tendering packages to be issued.

WHS accreditation received

Alpha has received confirmation that it has received accreditation under the Australian Government building and construction Work Health and Safety (WHS) Accreditation Scheme. WHS accreditation allows Alpha to directly manage key construction works on site and is also a condition precedent to the project debt funding to be provided by NAIF & EFA.

Production Tax Credit review underway

Alpha notes the introduction to the Australian Parliament of the Future Made in Australia (Production Tax Credits and Other Measures) Bill 2024. The Bill establishes a new refundable tax offset to support the processing of Critical Minerals (including High Purity Alumina) in Australia.

The Bill, if passed, is expected to have a material positive impact on the financial returns of the Stage 2 project.

PRODUCT MARKETING

Product marketing overview

Alpha continues to be very pleased with the volume of counterparties engaging with the Company on product qualification, with steady, month-to-month increases in both number of end-users and both size and number of qualification test orders.

Recent highlight product marketing metrics include:

- **170 test and/or sales orders received since Stage 2 FID (May 2024)**
- **>3,000kg of sales and test orders under manufacture**
- **19 sales orders serviced since FID, +1,310kg @ ~ US\$33/kg (steady conversion of market engagement to small scale sales is a critical qualification stage-set to finalising larger volume orders and offtakes)**
- **5 Letters of Intent (LOIs) – issued in draft for customer review**

DLE Sector marketing

Alpha's ability to manufacture novel, amorphous, nanocrystalline, high purity alumina tri-hydrate (**ATH**) has proven to be of particular interest to end-users for Direct Lithium Extraction (**DLE**) sorbents. Within the last 10 years, a significant body of technical research has been able to demonstrate technical outperformance of DLE sorbents that have been synthesised with amorphous ATH.

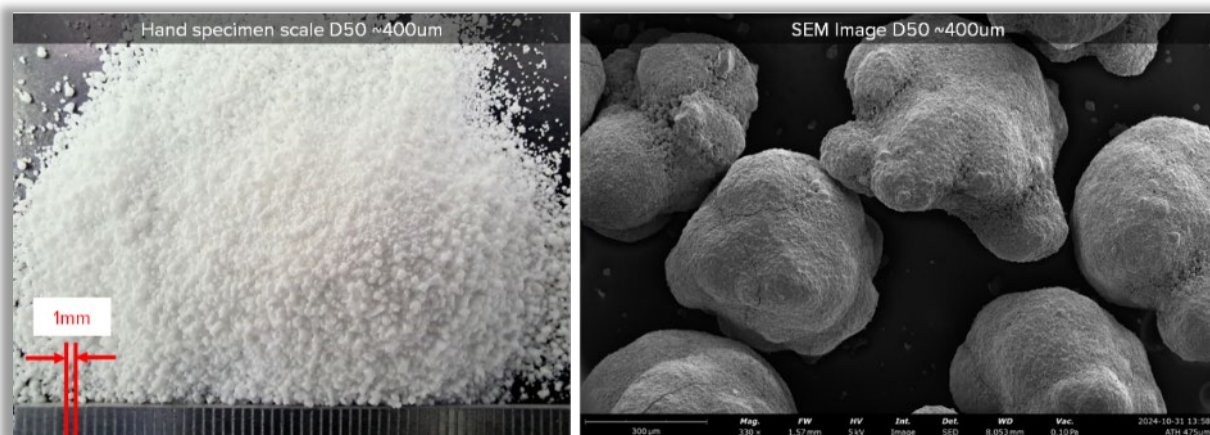
To date, end-user testwork has been able to confirm that Alpha's material is easier to process into a final sorbent and has generated lithium extraction rates of approximate twice the level of market incumbent sorbents.

The Company has now received further encouraging testwork results from end users, where Alpha's materials are showing benefits across a range of additional technical performance metrics, including lithium extraction rates.

In October 2024, Alpha conducted a US based marketing effort with visits to both DLE brine developers, as well as developers of DLE sorbents and process technologies, who are each assessing the use of Alpha's ATH materials. Counterparties range from technical service providers, global materials businesses to petroleum majors looking to extract lithium from oil-field brines. This has provided further encouragement with additional test samples generated and delivered.

This work has also led to the demand for, and subsequent successful development of, Alpha's high purity amorphous ATH as robust granules. The granulation process is a neat fit for the existing Alpha process, with no additional chemicals or reagents to those already used.

A range of end-users have ordered granulated ATH test materials, with these test orders to be delivered in the first half of December 2024.



Images of Alpha's granulated ATH for use in the synthesis of DLE sorbents

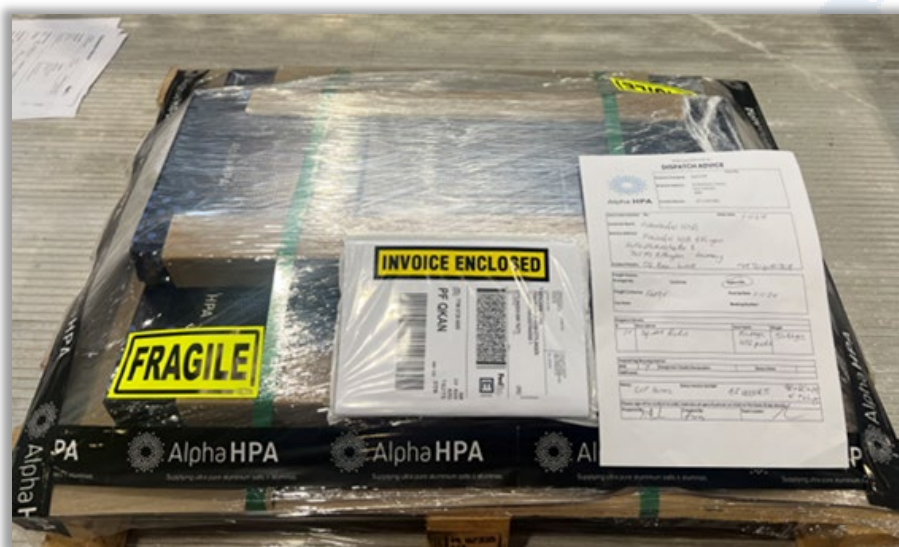
Semiconductor sector

As referenced in the previous Projects updates, Alpha has further advanced the marketing of its HPA and high purity alumina hydrate products as precursors for thermal interface materials in the rapidly growing semiconductor packaging sector. End-users have confirmed Alpha's materials have passed a key quality threshold with zero detectible uranium (U) or thorium (Th) impurities.

Product sales orders continue to steadily build as Alpha's materials pass scale-up testwork thresholds through the product qualification process, with recent alumina sales including a 400kg HPA powder order, and quotations submitted for 200kg and 400kg parcels of high purity ATH.

Two draft LOIs have been issued for customer review in the thermal interface sector.

Following the recent US marketing visit, and on receipt of positive testwork feedback, Alpha has also issued a draft LOI to a premium end-user for the use of the Company's' HPA powder within a next-generation CMP polishing slurry.



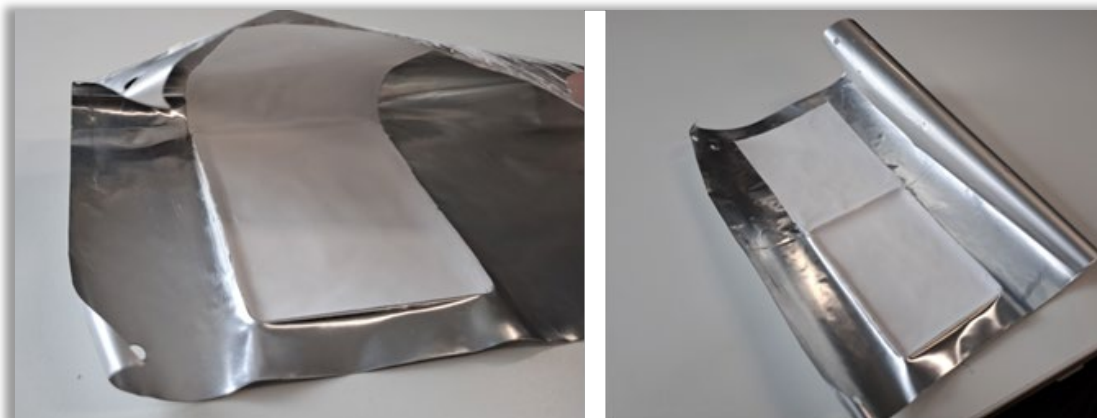
Test work order shipped for the semiconductor sector

Al-Nitrate based coating capability developed for Li-ion pouch cells

Alpha has expanded its capability to coat high purity aluminium-hydroxides (UltraCoat) onto selected Li-ion cell surfaces to improve battery safety in controlling thermal runaway (fires), to now include the ability to coat strong, flexible coatings onto Li-pouch cells casing material.

This capability expands the potential application of the UltraCoat to include most stationary storage applications (ESS) as well as e-mobility applications (eg: EVs), which use pouch-cell form factors.

Alpha will shortly be commencing proof of concept trials with research counterparties on the fire suppression capability of UltraCoated pouch cells on full Li-ion cells.



Li-ion battery pouch cells casing with interior UltraCoat applied – ahead of cell formation

UltraCoat can be applied to chemically coat:

- Li-ion battery anode and cathode active materials
- Li-ion battery cell casings
- Li-ion electrode sheets

The wider regulatory and EV manufacturer focus on Li-ion battery fire prevention is considered strongly favourable for the accelerated testing and adoption of this Alpha's UltraCoat technology. Alpha's commercial scale aluminium nitrate production is currently under expansion with Stage 2, which will support increased production of the UltraCoat technology.

HPA FIRST PROJECT - STAGE 1

Stage 1 operations remain focused on servicing customer qualification test orders and sales orders for:

- Alpha and gamma phase HPA
- Sintered HPA tablets
- Nano-HPA
- High purity alumina hydrates (boehmite (Al-O-OH) and 'ATH' (or Al(OH)₃); and
- Aluminium nitrate (Al-nitrate)

The HPA and alumina hydrate circuits continue in stable operations, with HPA production levels continuing to exceed design capacity.

Solvent Extraction (SX) and Al-Nitrate circuits at steady state

The SX and Al-Nitrate circuits were successfully re-started in late September 2024 and have now reached steady state. The Al-Nitrate production is both providing precursor materials to feed both alumina-hydrate and HPA production as well as to re-build Al-Nitrate inventory ahead of anticipated Al-Nitrate orders in 2025.

Stage 1 HPA Inventory

Stable operations of Stage 1 PPF has allowed the Company to establish a meaningful HPA inventory ahead of anticipated larger volume orders in 2025.

Current HPA inventory exceeds 15metric tonnes at >99.997% purity, which includes over 1,000kg of high density sintered HPA tablets for sapphire production.



*A production batch of densified, sintered HPA disc tablets
(each tablet ~850g with density of >3.5g/cm³)*

ALPHA POLARIS (CANADA)

In November 2022, Alpha signed an MOU (see ASX announcement 14 November 2022) with Orica to investigate the potential deployment of the HPA First process technology adjacent to the Orica facility in Alberta Canada.

Advanced market signals from ongoing customer engagement indicates that timing to commence further study on the potential expansion of the companies operating footprint into North America is now appropriate. To date, management has been focused on the HPA First Stage 2 Project in Gladstone but has created some bandwidth to enable some activity on this initiative.

Based on these market signals, the Company has formed a view on potential project capacity and has more formally commenced concept studies in co-operation with Orica management for the Canadian facility, to be named Alpha Polaris.

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About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of high purity aluminium materials using the Company's proprietary, exclusively licensed 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) and 5N (>99.999% purity) aluminium materials for sale into high technology markets including the semiconductor, lithium-ion battery and LED lighting sectors.

Alpha is in production at its HPA First Project Stage 1, Precursor Production Facility (PPF) across the Company's full range of high purity aluminium materials and has commenced construction of Stage 2 of the HPA First Project.

On 20 May 2024, Alpha reached Final Investment Decision for Stage 2 of the HPA First Project, being the full commercial scale deployment of the process technology on the same site.

Alpha has commenced construction of Stage 2 of the HPA First Project, which will be the world's largest, single site facility for the manufacture of high purity aluminium materials.