



Alpha **HPA**

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HPA FIRST PROJECT UPDATE **SUPPLYING DE-CARBONISATION**

PRODUCT MARKETING

- **Multiple lead sales orders**
 - 10kg Al-Nitrate precursor (US\$310/kg)
 - 5kg spherical HPA (US\$50/kg)
 - 30kg ultrafine HPA powders (A\$40/kg)
- **Further product test orders**
- **New high purity products developed**
 - Spherical gamma alumina for catalysts
 - High dispersible boehmite
- **Customer negotiations advanced**

STAGE 1 - PPF

- **Site clearance complete**
- **Nearly 100% of mechanical equipment contracts awarded**

STAGE 2 - FULL SCALE PROJECT

- **Final draft ITE (Bankers' Engineers) reports received**

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 fully funded to commercial production at its Stage 1, Precursor Production Facility (PPF) which is under construction in Gladstone, QLD and scheduled to commence commercial production of the Company's high purity Aluminium Precursors from August 2022.

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

STAGE 1 - PPF

The Company continues to make strong progress on the Stage 1 PPF component of the HPA First Project, as detailed below:

Site Clearance Complete

Following mobilisation of earthmoving contractors in November, PPF site clearance has now been completed and excavations are underway in preparation for concrete foundations and underground infrastructure (see below).



Looking west showing PPF site clearance complete (foreground), Orca (midground) and Rio Tinto Aluminium (background)



PPF Site – looking south

Over 80% of mechanical equipment contracts awarded

Over 80% of the contracts for mechanical fabrication and process equipment for the PPF have now been awarded and are in fabrication. The remaining packages to be awarded in January 2022.

Other

Early hiring of key employees is underway to support operations readiness for the PPF commissioning. Key utility agreements are in final draft.

PRODUCT MARKETING

Alpha maintains an active product marketing program, with a number of engagements now maturing to the commercial stage. In addition, Alpha continues to outreach to new markets and jurisdictions, as well as continuing to receive inbound product test and sales orders.

Multiple lead sales orders

Alpha has recently received and/or satisfied a number of product sales orders. Each of these sales are considered lead orders for potential larger volume contracts.

10kg Al-Nitrate precursor (US\$310/kg)

Alpha has completed a sales order for its 5N purity Al-Nitrate precursor for sales into a global research chemical web catalogue. In reaching this arrangement, Alpha is now well placed to receive bulk orders generated from research work from this catalogue.

5kg spherical HPA (US\$50/kg)

Alpha has commenced sales of its spherical alumina powders following a period of product development. Alpha has completed an initial sale of 5kg of spherical HPA to large Japanese materials company, which will be used for pilot evaluation. The customer has indicated that a successful pilot result is expected to generate a high value product order.

30kg ultrafine HPA powders (A\$40/kg)

The Company is currently manufacturing a 30kg HPA powder order for an Australian domestic customer. A successful application of this order is also expected to generate longer term, high value product orders.

Further product test orders

Alpha continues to receive product test orders from potential customers. Over the last 3 weeks Alpha has received a further 3 orders, including:

- Follow on test orders for a Japanese LED phosphor manufacturer;
- Gamma alumina spheres for a German catalysts manufacturer; and
- High purity, high dispersible boehmites (see below).

New products developed

Alpha's technical team has recently expanded its range of high purity aluminium products following a product development phase and interface with end-users and research groups. The expanded high purity offering is now forming part of the Company's continued market outreach and further demonstrates the capacity of Alpha's process flexibility.

New products developed include:

Ultra-high purity, high dispersible boehmites

Alpha has now developed ultra-high purity (>99.995%) boehmites with very high dispersibility (>98%).

This product has been developed from inbound demand from several potential customers.

High dispersible boehmites are used in sol-gel applications in the manufacture of high value, speciality aluminas, including nano-aluminas and alumina for translucent ceramics.

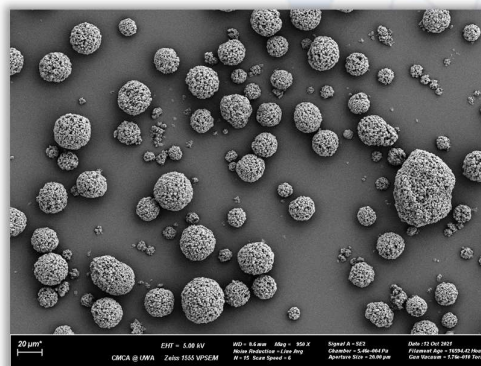


Sol-gel formation from high dispersible boehmite

Spherical gamma alumina for catalysts

Alpha has developed a new spherical gamma alumina powder product in response to both inbound demand from a potential Japanese customer and a German based research organisation (FGK Keramik).

Gamma alumina is a very high surface area alumina used as a medical and petrochemical catalyst. Product test samples have been despatched to Germany and Japan for testwork. Like a number of other Alpha's product offerings, the Company is not aware of any higher purity gamma alumina products.



SEM image of Alpha's spherical gamma alumina

Customer negotiations advanced

As a follow on from product testing, qualification and submitted bids into supply contracts, Alpha has materially advanced a number of negotiations with potential customers for the supply of its high purity aluminium products, which include high purity aluminas, boehmites and aluminium precursors.

STAGE 2 – FULL SCALE PROJECT

In parallel with the PPF the Company maintains a number of workstreams directed at completing the remaining conditions precedent to the full-scale HPA First Project FID:

Final draft ITE (Bankers Engineers) reports received

Alpha has now received final draft reports from the Independent Technical Expert ('ITE' or 'Bankers Engineers') as a key component to the lender due diligence.

These reports are under review and are expected to be finalised in the next few weeks.

About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of ~10,000tpa equivalent 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 4,000 operating hours and delivered an expanded range of over 80 high purity product orders to end-users globally.

Alpha is fully funded to the commercial production at its Stage 1, Precursor Production Facility which is scheduled to commence commercial production for the Company's high purity Aluminium Precursors from August 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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