

Alpha HPA

ASX: **A4N**

ASX Announcement

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(8 pages)

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

ACTIVITIES REPORT FOR THE QUARTER ENDED 31 DECEMBER 2021

HIGHLIGHTS

PRODUCT MARKETING

- Twelve separate bids submitted with volume, price and freight terms across the Company's high-purity aluminium product range
- Multiple additional sales orders including:
 - 10kg Al-nitrate precursor (US\$310/kg)
 - 5kg spherical HPA (US\$50/kg)
 - 30kg ultrafine HPA powders (A\$40/kg)
- Confirmation by numerous end users of "best in class" purity and application performance across a range of products

STAGE 1 – PPF

- Amended Queensland State Government approval received for both the Stage 1 PPF and Stage 2 Full Scale facility on the same site
- Land settlement completed
- Site clearance completed with civil earthworks underway
- Main facility building contract awarded
- Over 80% of mechanical equipment contracts awarded

STAGE 2 – FULL SCALE PROJECT

- Final draft reports received from the Independent Technical Expert ('ITE' or 'Bankers Engineers')

STATEMENT OF CO-OPERATION WITH QUEENSLAND GOVERNMENT

- Signatory to the Statement of Co-operation with the Queensland Government and other industry participants towards net zero emission manufacturing

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide the December 2021 quarterly activities report for its HPA First Project, representing the commercialisation and production of critical high purity aluminium products driving de-carbonisation.

HPA FIRST PROJECT SUPPLYING DE-CARBONISATION

During the December quarter, Alpha remained strongly focused on the delivery of the HPA First Project in Gladstone, Queensland, which represents the commercialisation of the Company's proprietary aluminium purification and refining technology. The HPA First Project will deliver a range of ultra high purity aluminium products that are critical materials to the supply chains of key de-carbonising technologies including:

- LED lighting, and
- Lithium-ion batteries.

Activities in the December 2021 quarter were dominated by:

- Ongoing product marketing and product development activities of products from the Company's continuously operating Brisbane plant.
- Construction, engineering and procurement activities related to the delivery of the Stage 1 Precursor Production Facility ('PPF'). The PPF will be the Company's first commercial production facility representing the acceleration of commercial production and cashflows through the Company's ultra-high purity aluminium precursors.
- Continuing to advance a number of the conditions precedent to the Final Investment Decision on the full scale HPA First Project.

Further details on these developments are outlined below.

Alpha is fully funded to commercial production at its Stage 1, PPF which is scheduled to commence commercial production in Gladstone, Queensland, for the Company's high purity aluminium precursors from August 2022. The Company is concurrently closing out the remaining conditions precedent to the full scale Project Final Investment Decision, with a focus on product sales and offtakes and Project financing.

PRODUCT MARKETING

During the quarter, Alpha continued a highly active product marketing program with end-users, with a number of engagements continuing to mature to the commercial negotiation stage. In addition, Alpha extended its outreach to new markets and jurisdictions, as well as continuing to receive inbound product test orders and sales orders, with the Company calibrating the servicing of these orders according to capacity of its demonstration facility in Brisbane.

PRODUCT MARKETING SNAPSHOT

AS AT 31 DECEMBER 2021

- **12 separate supply contract bids now submitted**
- **80+ product test orders shipped**
- **19 separate end-users* conducting active product evaluation**
- **HPA and aluminium-nitrate sales extended**

** Does not include intermediaries or marketing agents*

Multiple lead sales orders

During the quarter, Alpha received and/or satisfied a number of product sales orders with each of these sales considered to be a potential lead order for future larger volume offtake contracts. These orders included:

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

Alpha 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 commenced sales of its spherical alumina powders following a period of product development. Alpha completed an initial sale of 5kg of spherical HPA to a 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)

Alpha completed the manufacture of 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.

Volume, Price and Freight Contract Bids

As at the end of the quarter, Alpha had submitted 12 bids with volume, price and freight terms across its range of high purity aluminium products (*refer Table 1, following page*).

Negotiations with end-users on these bids vary from early stage to mature with the Company confident on closing offtake supply agreements in early 2022.

In addition, at the end of the quarter, a further 19 end-user and research organisations are actively testing and/or qualifying Alpha's high purity products (*refer Table 2, following page*).

A detailed summary of Alpha's product marketing is summarised on the following page.

Observations and feedback from Alpha's product marketing program are summarised below:

- A number of end-users have acknowledged Alpha's products including Al-nitrate, Al-sulphate, Boehmites and HPA pellets for sapphire glass manufacture are "best-in-class" with respect to purity and application performance.
- Wider adoption of Al-nitrate precursors, particularly for micro-LED phosphors and lithium-ion battery particle coating, has been in part restricted by the availability of reliable, large volume, high purity manufacture, with Alpha's offering now addressing these limitations.

PRODUCT MARKETING SUMMARY

TABLE 1: SUBMITTED OFFTAKE AND/OR SUPPLY BIDS – AS AT DEC 31, 2021

Counter	End-User Description	End-User Domicile	Product	Demand Size	End Use	Status
1	Global Chemicals Manufacturer & Wholesaler	Germany	Al-precursors	very large	Lithium-ion battery electrode coatings	Pending
2	Global Chemicals Manufacturer	Germany	Al-precursors	small	Specialty catalysts	Bids submitted, pending confirmation
3	Lithium-Ion Battery Cathode	EU	Al-Sulfate	medium-large	Lithium-ion battery cathode	Bid Submitted
4	Global Materials company	USA	HPA powder	small	CMP slurries	Testing complete. Bids submitted, pending confirmation
5	Chemical Company	Japan	Al-precursors	medium	Specialty catalysts	Bids submitted, pending confirmation
6	Global Lighting Company	Netherlands	HPA powder	small - medium	mini-LED Phosphors	Testing complete. Bids submitted, pending new product launch
7	Global Lighting Company	Germany	HPA powder	small - medium	LED Phosphors	Testing ongoing. Bids submitted, pending confirmation
8	Li-ion battery separator OEM	Japan	HPA powder	large	Lithium-ion battery separator coatings	Testing complete. Bids submitted, pending confirmation
9	Undisclosed	Australia	HPA powder	small - medium	Undisclosed	Bids submitted, pending pilot trial
10	Sapphire Glass Manufacturer	USA	HPA pellets	medium	Sapphire Glass	Testing complete. Awaiting volume confirmation
11	LED Phosphor Company	Germany	HPA powder	small - medium	LED Phosphors	Maiden sales complete, seeking final volume confirmation
12	Electronics/Materials	Japan	Spherical HPA	medium	Integrated Circuit Resins	Bid subject to Pilot Testing Underway

TABLE 2: END-USER PRODUCT TEST WORK - AS AT DEC 31, 2021

Counter	End-User Description	End-User Domicile	Product	Demand Size	End Use	Status
1	High Technology LED Lighting	Japan	Al-Nitrate	medium	micro-LED phosphors	Test results due Dec 2021
2	LED Phosphor Company	Japan	HPA powder	small - medium	Al-nitride manufacture for LED's	First pass testing successful. Further samples requested
3	Global LED Company	Japan	HPA powder	medium	LED phosphors	End user testing underway
4	Global materials company	EU/USA	Multiple Products	very large	Speciality aluminas	Test Products under manufacture
5	Specialty Electrics & Ceramics	Taiwan	HPA powder	small - medium	LED Phosphors	Test order in production in Brisbane
6	Battery Materials Manufacturer	Japan	Boehmite	large	Li-B separator coatings	End user testing underway
7	Research Organisation	Germany	Multiple Products	Unknown	Specialty Ceramics	End user testing underway
8	Research Organisation	Germany	Al-Nitrate	Unknown	micro-LED phosphors	End user testing underway
9	Photonics Manufacturer	USA	Al-Nitrate	small - medium	YAG Laser Crystals	Maiden sales complete, seeking larger volume orders
10	Photonics Manufacturer	USA	Al-Nitrate	small - medium	YAG Laser Crystals	End user testing underway
11	Research Organisation	Australia	Al-Nitrate	Unknown	Li-B particle coatings	End user testing underway
12	Research Organisation	Australia	Al-Nitrate	Unknown	Li-B particle coatings	End user testing underway
13	Global materials company	Japan	HPA Pellets	medium	Specialty Ceramics/Sapphire Glass	Test order under manufacture in Brisbane
14	Global materials company	Japan	Multiple Products	medium-large	CMP Slurries	End user testing underway
15	Battery Separator Manufacturer	USA	HPA & Boehmite Powder	large	Li-B separator coatings	End user testing underway
16	Govt Organisation	Japan	Gamma alumina	small	Medical	End user testing underway
17	Electronics coatings	USA	Al-Nitrate	small	Coatings	Ongoing small volume (high value) sales
18	Specialist Battery OEM	USA	HPA powder	small	Lithium-ion battery separator coatings	Awaiting volume confirmation
19	Li-B anode manufacturer	EU	Al-Nitrate	large	anode particle coatings	Testing underway

Note: Al-precursors = Al-nitrate and/or Al-Sulphate

Key

Demand Size	Quantum
small	up to 50tpa
medium	up to 100tpa
large	up to 1,000tpa
very large	greater than 1,000tpa

STAGE 1 - PPF

The December quarter saw the Company continue to make substantial progress on the Stage 1, PPF component of the HPA First Project. The PPF is fully funded to production and represents the acceleration of commercial production and cashflows through the Company's ultra-high purity aluminium precursors.

During the quarter the following workstreams were advanced.

Amended State Govt Approval Received

In early November 2021, the Company received approval from the Queensland State Government for the change application on the HPA First Project site, within the Gladstone State Development Area ('GSDA'). This amended approval represents the State Government approval for both Stage 1 PPF and Stage 2 full-scale facility on the same site.

Land Settlement and Commencement of Earthworks

With the GSDA change approval received, Alpha and the Minister for Economic Development, Queensland ('MEDQ') satisfied or waived the remaining conditions precedent to the purchase and settlement of the HPA First Project site at 53 Reid Road, Yarwun.

Alpha subsequently took land possession on 5 November 2021, securing the land parcel for both the PPF and the full-scale HPA First Project.

Shortly after finalising land settlement, Alpha moved to commence earthworks ahead of site civils required for the PPF.

Site Clearance Complete

Following mobilisation of earthmoving contractors in mid-November, PPF site clearance was expediently completed with excavations now underway in preparation for concrete foundations and underground infrastructure (see below).



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

Over 80% of mechanical equipment contracts awarded

During the quarter over 80% of the contracts for mechanical fabrication and process equipment for the PPF were awarded and are presently in fabrication. The remaining packages are expected to be awarded across January and February 2022.

Other

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

STAGE 2 - FULL SCALE PROJECT

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

Material developments across the December quarter were as follows:

Final draft ITE (Bankers Engineers) reports received

During November 2021, Alpha 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.

Worley F.E.E.D Study

The Worley Front End Engineering Design ('FEED') Study based off the March 2021 DFS was received as an advanced draft during the December quarter.

Alpha is now running a draft review and is completing the Project scenario modelling based on a range of updated product mixes informed by the Company's marketing activities.

The re-configured HPA First Project product scenarios will be completed in the March quarter of 2022.

PRODUCT DEVELOPMENT

Across the December quarter Alpha continued to receive inbound end-user requests for new product development. Alpha's process flexibility, and continuous operation of the Brisbane demonstration facility, provides the opportunity to rapidly adjust process conditions to deliver new product specifications.

Alpha remains highly selective on new product development requests and is careful to allocate product development resources only in circumstances where there is a clear commercial benefit on a successful outcome.

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.

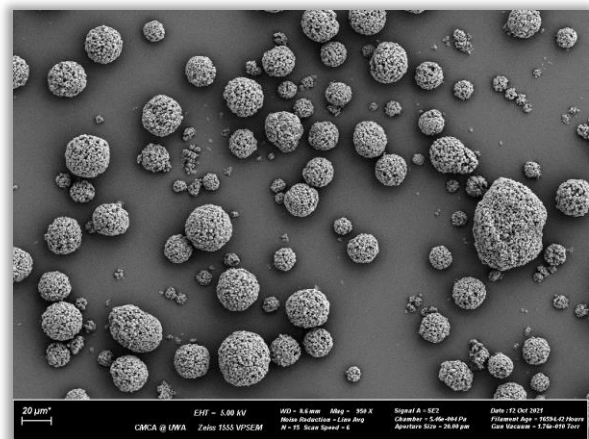


Sol-gel formation from high dispersible boehmite

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 test work. 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

CORPORATE

Statement of cooperation with the Queensland Government

During the quarter, the Company became a signatory to the Statement of Co-operation with respect to the Queensland Government and Central Queensland industries co-operating toward net zero emission manufacturing.

The Statement of Co-operation is designed to secure the future competitiveness of Queensland, adding value to a natural energy advantage to drive employment and economic outcomes for Queensland by focusing on three areas:

- Committing to industry by establishing certainty for current and future industry participants and growing demand.
- Delivering a globally competitive energy solution that is centred around firm, low-carbon electricity for industry.
- Growing the industries of the future in Central Queensland by creating an enabling regulatory environment, strengthening regional skills and employment to lower capital intensity, and planning for the infrastructure to enable industry development.

Alpha joined existing industry signatory Rio Tinto, and new signatory Orica Australia on the Statement of Co-operation.

Related Party Expenditures

During the December quarter, the aggregate amount of payment to related parties and their associates totalled \$306,458 comprising \$210,833 of payments to Directors or Director related entities for Directors' consulting fees and \$95,625 in fees were paid to MIS Corporate Pty Limited ('MIS'), an entity in which Directors Norman Seckold and Peter Nightingale have a controlling interest. MIS provides full administrative services, including administrative, Project commercial services, accounting and investor relations staff, rental accommodation, services and supplies to the Group.

For further information, please contact:

Rimas Kairaitis

Managing Director

rkairaitis@alphaHPA.com.au

+61 (0) 408 414 474

Cameron Peacock

Investor Relations & Business Development

cpeacock@alphaHPA.com.au

+61 (0) 439 908 732

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