



Alpha **HPA**

ASX: **A4N**
ASX Announcement
21 January 2021

The Manager Companies
ASX Limited
20 Bridge Street
Sydney NSW 2000

REPORT ON ACTIVITIES FOR THE QUARTER ENDED 31 DECEMBER 2020

HIGHLIGHTS

EXPANDED MARKET OUTREACH

- Intensified global marketing effort across an expanded range of high purity alumina and aluminium products including HPA, Boehmite and high purity aluminium precursors.
- High levels of end-user engagement for the Company's products with Alpha shipping multiple product samples to end-users in Li-ion battery supply chains, the LED lighting sector and for specialty chemical applications.
- Development of a further 5 high-purity products underway at the request of a number of end-users for use in both Li-ion battery and sapphire/ceramic applications.

MANUFACTURE & MARKETING OF 5N Li-ION CATHODE PRECURSOR

- Successful manufacture of 5N purity (99.999%) aluminium precursor (AI-precursor #2) as used in the synthesis of aluminium bearing lithium-ion cathode chemistries, notably NCA and NCMA.
- Commencement of marketing of this AI-precursor #2 via Traxys, with initial test sample despatched to a large European based cathode material manufacturer.

MEMORANDUM OF UNDERSTANDING WITH RHINELAND SPECIALTIES

- MoU with Rhineland Specialties to market Alpha's high purity products to specialty North American markets with contemplated volumes of up to 6,000kg per month for both of Alpha's high purity precursor products.
- Rhineland MoU to complement existing marketing activities with Traxys.

MAIDEN SALES OF 5N PRECURSOR #1 INTO SPECIALTY CHEMICALS MARKET

- Sales of 40kg of Alpha's 5N aluminium precursor (AI-precursor #1), with a further 20kg order expected in January 2021, at an average price of ~US\$496/kg.
- Sales into specialty chemical markets considered a strong validation of product quality.
- Strong end-user interest anticipated to lead to further precursor product sales.

LODGEMENT OF HPA FIRST PROJECT LAND USE APPROVAL APPLICATION

- Formal lodgement of the State Development Area Approval (Development Permit) for a Material Change of Use (MCU) with the QLD Dept of the Co-ordinator General.
- Approval decision for the Development Permit expected in March quarter CY21.

CONDITIONAL DIVESTMENT OF THE WONOGIRI COPPER-GOLD PROJECT

- Conditional Share Purchase Agreement ('CSPA') with Far East Gold Ltd ('FEG') for the sale of Alpha's interest in the Wonogiri copper-gold project in Indonesia.

OPERATIONS OVERVIEW

Alpha HPA's ('Alpha' or 'the Company') operations in the December quarter were focussed on the three key workstreams required to support the commercialisation of the Company's HPA First Project, namely project permitting, financing and market outreach of the Company's range of high purity aluminium products including high purity alumina (HPA), boehmite and its two 5N purity aluminium precursors. The December quarter saw substantial progress on each of these work streams, as summarised in the following.

Expanded Market Outreach

In co-operation with Traxys, the December quarter saw the Company continue to be highly active with respect to market engagement of its high-purity aluminium products with the Company's product range having now expanded from HPA and boehmite to also include two high-purity aluminium precursors with a range of applications across both the lithium-ion battery (Li-B) and light-emitting diode (LED) markets.

During the quarter the Company observed a significant lift in end-use interest in the LED and Li-B sectors in particular, as the macro-trend of de-carbonisation combined with large, targeted Government stimulus, has created strong market growth in these sectors and the requirement for end-users to rapidly expand supply chains. The Directors are delighted with the level of end-user engagement with the Company's products and Alpha continues to prepare and ship test samples for product assessment, pursue end user supply negotiations and expand product sales into speciality markets.

The Company's Market Outreach programme included maiden sales of the Company's 5N purity aluminium precursor #1 into the speciality chemicals market, providing strong validation as to the degree of industry acceptance of the Company's high purity products.

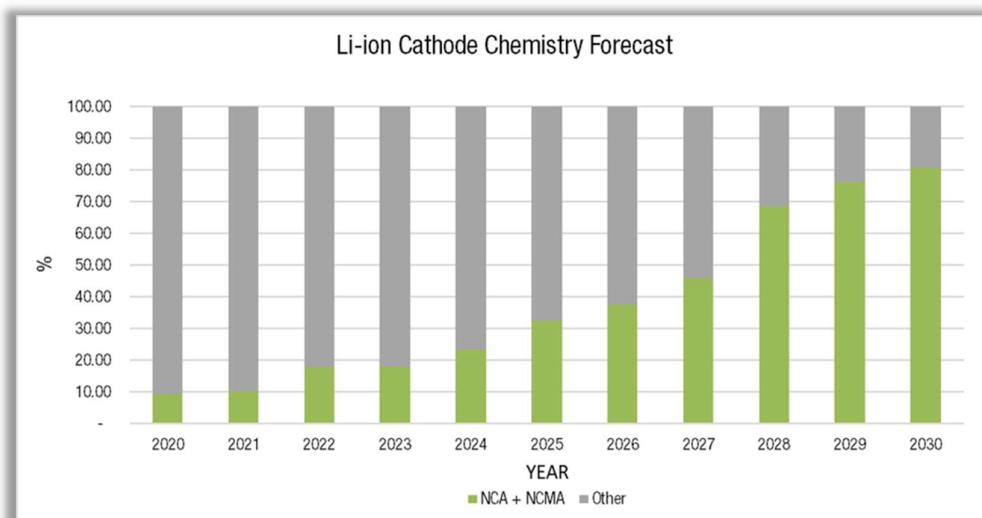
The market outreach programme is set to continue to escalate during the March quarter, with a target to progressively convert market interest into end-user MoU's and/or offtake contracts, as required to support the HPA First Project financing.

Successful production and test shipment of 5N purity Li-ion battery cathode precursor

During the quarter, as Part 2 of the Company's development of high-purity aluminium precursors, Alpha successfully developed and manufactured a high purity, aluminium bearing cathode precursor material (Al-precursor #2) at >5N purity (99.999%), using the HPA First Process.

This aluminium precursor is in commercial use for the manufacture of aluminium bearing Li-B cathode chemistries, notably NCA (nickel-cobalt-aluminium) and NCMA (nickel-cobalt-manganese-aluminium). Aluminium bearing Li-B cathode chemistries are forecast to represent ~80% of all lithium-ion cathodes by 2030 (see graphic below).

In co-operation with Traxys, Alpha has expanded its market outreach activities to include this precursor product, with Alpha shipping an initial test order for Al-precursor #2, to a large manufacturer of Li-B cathode active materials for lithium-ion batteries.



Forecast share of aluminium bearing cathode chemistries (NCA+NCMA) to 2030 (source UBS)

HPA Pellet orders shipped to South Korean and North American sapphire glass manufacturers

During the quarter, Alpha shipped two significant test orders of HPA pellets to global sapphire glass manufacturers. A small 2.5kg test order was sent to South Korea with a larger order (96kg) sent to a sapphire glass manufacturer in North America.

These orders represented the first sintered HPA pellet orders filled by the Company's upscaled Brisbane plant which now includes the recently commissioned pellet press and sintering oven.



HPA pellets as a subset of the larger (96kg) HPA pellet test order shipped to a US based sapphire glass manufacturer

Alpha is also active in further product development of its sintered HPA pellets for both Japanese and Taiwanese based end-users (refer: Product Development Initiatives, page 6)

Maiden Sales of 5N Precursor #1 into Specialty Chemicals Market

During the quarter the Company expanded the marketing of its high purity aluminium product range with assistance of USA and Taiwanese based product wholesalers, to include the targeting of specialist markets outside of the wider LED and Lithium-ion battery supply chains.

These efforts saw Alpha able to confirm sales orders of Al-precursor #1 to speciality markets in the USA, via Rhineland Specialities. Alpha has now received sales orders for more than 40kg of this product, with a further 20kg order expected in January 2021, at an average price of ~US\$496/kg.

Alpha is now fielding numerous price and volume enquiries for its 5N precursor #1 product for use across a range of speciality chemicals applications, which have reasonable prospects of developing into additional sales.

Although early in the Company's precursor marketing effort, these sales are a positive indicator for the acceptance of the premium quality of the Company's 5N pre-cursor product and a useful price marker for product value at low volumes. As this marketing effort develops, Alpha will seek to build volume demand for this product. The Company would reasonably expect that pricing for larger volumes would be calibrated accordingly, but with the net effect that 5N pre-cursor sales have the potential to materially improve the HPA First Project financial returns.

Alpha continues to market this precursor to both specialty applications as well as the LED/Phosphor and Li-ion battery markets, with further test orders sent and with new and follow-on orders anticipated.



20kg drum shipment - 5N Precursor #1



42kg carton shipment - 5N Precursor #1

MEMORANDUM OF UNDERSTANDING WITH RHINELAND SPECIALTIES

During the quarter, the Company signed a Memorandum of Understanding (MoU) with Rhineland Specialties Inc, USA ('Rhineland') with respect to the marketing and wholesaling of the Company's range of high purity aluminium products to specialty markets in North America. The MoU includes marketing into the following markets where Rhineland have particular expertise, which demand high purity raw materials, and which generally attract premium pricing:

- Specialty Chemicals
- Photonics
- Optics and specialty laser applications
- Solar/PV
- Thin film/coatings
- Composites
- Ceramics
- Nanomaterials

The Rhineland MoU is particularly focussed on the marketing of the Company's two high purity aluminium precursor products into these markets, and contemplates volumes of up to 6,000kg per month for each precursor.

Rhineland facilitated the maiden sales of Alpha 5N precursor product referenced above and are continuing to expand their market outreach in the expectation of further sales.

The Rhineland MoU was negotiated in co-operation with Traxys as a complement to their marketing arrangements, as it provides market access to specialist applications in addition to the larger volume Li-B and LED lighting markets which are subject to the Traxys and Alpha marketing efforts.

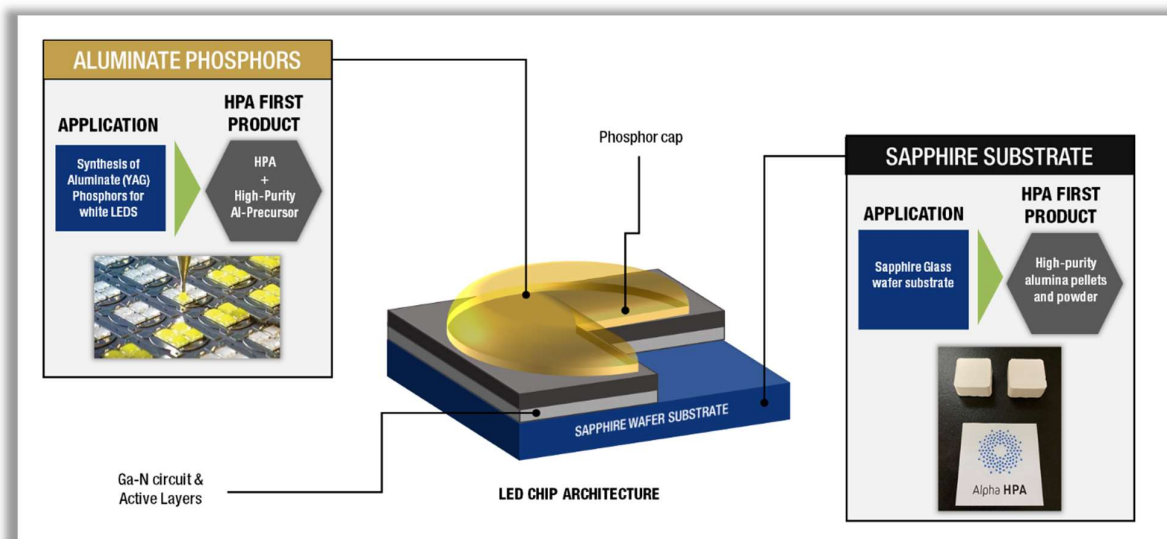
Alpha and Traxys are also co-ordinating logistics solutions for higher volume orders that may be generated from the Rhineland product marketing.

5 product test orders shipped to German LED/Phosphor end-users

As part of its evolving marketing campaign in the solid state/LED lighting sector, Alpha received and shipped 5 separate product test orders to two leading German based manufacturers of LED lights and LED phosphors. The test orders include:

- 2 shipments of 5N aluminium precursor #1
- 2 shipments of bespoke 4N HPA powder
- 1 shipment of 4N boehmite

Alpha understands that each of these products will be assessed for the synthesis of aluminate phosphors (eg: Ce-YAG and Lu-AG) using both wet and solid-state synthesis. Test results are expected in the March quarter, 2021.



Alpha product applications inside LED lighting

The Company is encouraged by the response from manufacturers to its products and remains confident of further test orders with a view to developing commercial offtake terms.

Additional HPA powder and HPA pellet orders received from Taiwan

During the quarter, Alpha received additional orders for HPA powder and pellets from a large Taiwan based sapphire glass and ceramics manufacturer. The pellet order has been shipped with the HPA powder order due for shipment in January 2021.

Boehmite test sample shipped to cathode technology developer in Canada

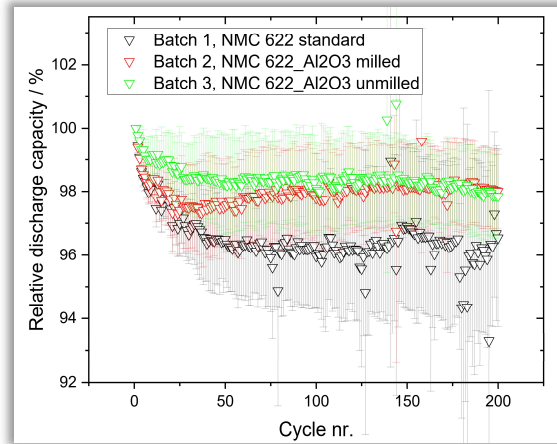
A sample order of Alpha's high purity boehmite product was despatched to a Li-B cathode technology business in Canada for testing of the product into their cathode materials blend.

Further research confirming beneficial addition of HPA in Li-ion cathode

Alpha completed a further research project conducted by the electrolyte specialist E-Lyte Innovations GmbH and the cell specialist Custom Cells Itzehoe GmbH in Germany. The research constructed a series of lithium-ion test cells using NMC622 cathodes impregnated with HPA manufactured at Alpha's Brisbane facility. The testwork generated definitive results showing material improvements in cell discharge capacity using HPA introduced to the cathode slurry.



NMC622 cathode foil impregnated with Alpha



Results showing material improvements in cell discharge capacity using HPA introduced to the cathode slurry

This research supports the industry trend of increased usage of high-purity alumina within Li-B cathode to improve performance and stability of nickel-rich cathode chemistries.

Product Development Initiatives

Alpha's broadening technical and commercial engagement with end-users has precipitated a number of product development requests which are now active projects within the Brisbane facility, in parallel with the delivery of end-user test orders. At the end of the December quarter, the Company had 5 product development projects underway including:

- The development of HPA pellets with bespoke specifications for a Japanese based specialist ceramics and sapphire glass manufacturer.
- The development of a boehmite based product with bespoke specifications for a South Korean customer in the lithium-ion battery supply chain.
- The development of HPA powder with bespoke specifications for both existing cathode and potential future cathode manufacturers.

These product development projects have forecast completion timelines ranging through to February 2021.

Lodgement of HPA First Project Land Use Approval Application

During the quarter, Alpha, with support from lead permitting consultant AECOM, formally lodged the State Development Area Approval (Development Permit) for a Material Change of Use with the QLD Dept of the Co-ordinator General, in respect of its 10,000tpa HPA processing plant at 53 Reid Road, Yarwun, formally described as Lot 12 on SP239343. The lodgement of this key approval application marks a significant milestone for the HPA First Project. The application is supported by a number of technical assessments, including:

- Air quality and noise impact studies
- Traffic impact studies
- Water Management Plan supported by detailed water modelling
- On-site ecology studies
- Quantitative Risk Assessment (QRA)

An approval decision for the Development Permit is expected in March quarter CY21.

A site-specific Environmental Authority Application will be lodged with the Department of Environment and Science upon obtaining a Development Permit approval.



HPA First Project Site – Gladstone State Development Area

Project financing discussions advanced

During the December quarter Alpha continued working actively on the HPA First Project Financing with support from its advisors (KPMG DAT). The Company continues to progress discussions with Australian Commonwealth Government lenders and respond to their requests for information.

In addition, the Company has received confirmations of preliminary interest from a number of both domestic and international commercial lenders.

EOI issues to selected EPCM Contractors

In preparation for a CY21 Final Investment Decision, Alpha has sought Expressions of Interest (EOI) from a selected list of Engineering, Procurement and Construction Management (EPCM) contractors with a view to concluding tenders and allotment of contracts in the March quarter 2021.

Orica Definitive Agreements Update

The HPA First Project is being progressed on the basis of the Project located within the Gladstone State Development Area ('GSDA'), where Alpha has secured a contract for a 9.2 hectare land parcel immediately opposite the chemical facility operated by Orica Australia (refer map below). In March 2020, the Company signed a MoU with Orica Australia Pty Ltd ('Orica') which sets out the volumes and pricing mechanisms for the supply of key process reagents and the offtake of by-product from the HPA First Project subject to the negotiation and finalisation of a more definitive Supply and Offtake Agreement.

Prior to the conclusion of 2020 Alpha and Orica noted that:

- Under the joint Engineering Co-Operation Group ('ECG'), both parties have conducted substantial engineering and testwork related to the Projects interface and the quality and specification requirements of the process reagents and the process by-product, with positive results. Joint Alpha-Orica by-product test work is ongoing;
- The parties are continuing to work together to develop the technical operations interface and safety and quality assurance protocols which describe the safe operability between the two sites, and
- Draft definitive agreements are under review.

Further to the points above, Orica and Alpha are continuing to finalise the definitive agreements and the related operating protocols in good faith and will seek to complete the definitive agreements in the March 2021 quarter in a form satisfactory to potential Project Lenders.

The definitive agreements will include a number of conditions precedent, including completion of final permitting and project financing of the proposed HPA First Project.

The Company is pleased with the progress of the agreements and remains confident they will be concluded in line with the requirements of the current Project Schedule delivery timetable.

RELATED PARTY EXPENDITURES

During the December quarter the aggregate amount of payment to related parties and their associates totalled \$265,500 comprising \$193,000 of payments to Directors or Director related entities for Directors' consulting fees and \$72,500 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, accounting and investor relations staff both within Australia and Indonesia, rental accommodation, services and supplies, to the Group.

COLLERINA PROJECT – NSW (100% Alpha and subject to commodity split agreement)

In line with the Company's plans to focus on advancing the HPA First Project, no exploration activities were undertaken at the Collerina project during the quarter.

WONOGIRI PROJECT – INDONESIA (45% Alpha)

No exploration activities were undertaken at the Wonogiri Project during the quarter.

Conditional divestment of the Wonogiri copper-gold project

During the quarter the Company advised it has signed a Conditional Share Purchase Agreement ('CSPA') with Far East Gold Ltd ('FEG') for the sale of its interest in the Wonogiri copper-gold project in Indonesia.

Alpha currently holds a 45% participating interest in the Wonogiri Project via its wholly owned subsidiary, Wonogiri Pty Ltd, which holds the 45% interest in the Indonesian operating company, PT Alexis Perdana Mineral ('PT Alexis').

Under the terms of the CSPA:

- FEG is to take over management and funding of PT Alexis immediately;
- FEG have 18 months to advance the Project and collect a minimum of \$6M in firm commitments for a public exchange listing (IPO), which is likely to include other assets;
- On IPO, FEG to issue consideration shares to Alpha for the acquisition of Wonogiri Pty Ltd to the value of A\$3.375M plus \$100K in cash;
- FEG must commit a minimum A\$250K to the Project with the 18-month term;
- If FEG does not raise the minimum commitment (\$6M) in 18 months, it may extend by a further 6 months, but only after meeting certain operational milestones; and
- If FEG fail to meet conditions by the final date, any FEG expenditure >\$250K gets converted to equity in PT Alexis at the rate of 1% per \$100K expenditure, capped at 25% (pre any IPO).

The Company is pleased to have reach divestment terms with Far East Gold. As experienced mining industry operators in Indonesia, Far East Gold are well placed to advance the Wonogiri asset and realise full asset value for both FEG and Alpha shareholders with the divestment terms allowing Alpha to direct its full focus towards the HPA First Project.

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About the HPA First Project

The Company's HPA First Project represents the evaluation and intended commercialisation of the production of ~10,000tpa equivalent of high purity alumina (HPA) and related products using the Company's proprietary licenced solvent extraction and HPA refining technology. The technology provides for the extraction and purification of aluminium from an industrial feedstock to produce 4N (>99.99% purity) alumina for the intended use within the lithium ion battery and LED lighting industry. Following a successful testwork program and completion of a Pre-Feasibility Study (PFS), updated in March 2019, Alpha has now completed Definitive Feasibility Study (DFS) based on the successful completion of its Pilot Plant program at its dedicated laboratory facility in Brisbane.

The Company has commenced full permitting, market outreach and project financing processes, with the expectation of positioning the HPA First Project to Final investment Decision.

Competent Persons Statement (Process Development Testwork)

Information in this announcement that relates to metallurgical results is based on information compiled by or under the supervision of Dr Stuart Leary, an Independent Consultant trading as Delta Consulting Group. Dr Leary is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM). Dr Leary has sufficient experience to the activity which he is undertaking to qualify as a Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Leary consents to the inclusion of the technical data in the form and context in which it appears.

For further information on testwork results and processes see ASX announcements dated:

14 December 2020, 8 October 2020, 28 September 2020, 8 September 2020, 20 August 2020, 28 July, 2020, 19 June 2020, 23 April 2020, 25 March 2020, 17 March 2020, 10 March 2020, 23 December 2019, 10 December 2019, 10 October 2019, 23 September 2019, 28 August 2019, 5 August 2019, 25 July 2019, 2 July 2019, 1 July 2019, 3 June 2019, 17 April 2019, 7 March 2019, 4 December 2018, 20 November 2018, 6 September 2018, 31 August 2018, 9 July 2018, 30 April 2018, 26 April 2018, 21 March 2018, 6 March 2018, 21 February 2018, 8 December 2017, 30 November 2017, 29 November 2017, 24 November 2017 and 13 November 2017.

Forward Looking Statements

The DFS contains certain forward-looking statements with respect to the financial condition, results of operations, 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 the DFS in light of those disclosures.