



Alpha **HPA**

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

ASX: **A4N**
ASX Announcement
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(9 pages)

ACTIVITIES FOR THE QUARTER ENDED 30 SEP 2021

HIGHLIGHTS

EXECUTION OF DEFINITIVE AGREEMENTS WITH ORICA

- Binding, definitive agreements signed with Orica for supply of reagents and sale of by-products to/from HPA First Project in Gladstone
- Initial 10-year term with optional 10-year term by mutual agreement

PRODUCT MARKETING

- Further pricing and volume bids placed for forward supply contracts
- Eight separate supply contract bids now submitted
- Additional sales orders for 100kg of HPA for LED phosphors
- Additional sales orders for 25kg of Al-nitrate precursors
- A further 15 product sample test orders received in the quarter
- Brisbane Plant working to fulfil 2 x 100kg pellet orders for sapphire glass
- REACH Registration process commenced for EU export
- Traxys marketing MOU extended

STAGE 1 – PPF

- Main facility building contract awarded
- Numerous equipment supply contracts awarded
- Strong focus on equipment procurement

STAGE 2 – FULL SCALE PROJECT

- Term sheet executed for feedstock supply with Rio Tinto Aluminium (RTA)
- NAIF Strategic Assessment Approval received
- Land contract amendments signed, targeting early November settlement
- Vendor engineering for long lead items commenced
- FEED study progressed by Worley

COLLERINA PROJECT DIVESTMENT

- Binding letter agreement with Helix Resources for divestment of the Company's interest in the Collerina Project, NSW

INDUSTRY RECLASSIFICATION

- Reclassification approved to the 'Commodity Chemicals' Sub-industry subgroup of the broader ASX Materials Sector



HPA FIRST PROJECT SUPPLYING DE-CARBONISATION

Alpha HPA Limited ('Alpha' or 'the Company') remains 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 September 2021 quarter were dominated by:

- Ongoing product marketing and product development activities, based from the Company's continuously operating Brisbane plant.
- Engineering and procurement activities related to the construction and delivery of the Stage 1 Precursor Production Facility (PPF). The PPF represents the acceleration of commercial production and cashflows through the Company's ultra-high purity aluminium precursors.
- Activities related to the delivery of the conditions precedent to the Final Investment Decision on the full scale HPA First Project.

Further details on these developments are outlined below.

ORICA AND ALPHA EXECUTE DEFINITIVE AGREEMENTS

In August the Company executed binding, definitive agreements with Orica Australia Pty Ltd ('Orica') in respect of Alpha's HPA First Project in Gladstone Queensland.

The agreements describe the commercial terms and technical obligations of both Orica and Alpha on the supply of process reagents and the offtake of process by-product to/from Alpha's HPA First Project and Orica's Yarwun manufacturing facility within the Gladstone State Development Area in North Queensland.

The nature of the HPA First Project process is such that the utilisation of reagents and the manufacture of by-product is highly complementary to the existing processes in operation at the Orica Yarwun facility. The agreements secure the commitment from both Orica and Alpha to leverage the process synergies to unlock the value from both companies' projects.

In summary, the agreements comprise:

- **A Project Implementation Agreement (PIA):** The PIA describes the capital investment obligations of the parties and the scope for project commissioning and reagent and by-product validation trials. The parties' capital investment obligations include:
 - o Alpha: The construction of the full-scale HPA First Project
 - o Orica: The construction of the piping, tankage and process controls required to deliver reagents to, and receive by-product from the HPA First Project

- **A Supply and Offtake Agreement (SOA):** The SOA describes the pricing, volume and product delivery of the process reagents and the process by-product, as well as the technical details of by-product management and quality assurance and control protocols.

The agreements confirm a 10-year initial term with an optional extension of 10 years by mutual agreement.

PRODUCT MARKETING

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

PRODUCT MARKETING SNAPSHOT

- **Eight separate supply contract bids now submitted**
- **80+ product orders shipped to/or orders received from;**
- **35+ separate end-users***
- **HPA and aluminium-nitrate sales commenced**

** Does not include intermediaries or marketing agents*

Key themes

A number of dominant themes have emerged from Alpha's market outreach and product marketing, which are considered highly constructive to securing product sales and offtake agreements. These include:

- Critical material supply chains are being re-organised in response to COVID-19 supply shocks, geo-political tensions, and a greater end-user focus on ethical and low-carbon supply.
- Alpha's products have been recognised by a number of end-users as the highest purity tested.
- Re-shoring of critical manufacturing, particularly electronics, semiconductors and lithium-ion battery manufacturing to the European Union and the USA.

Product pricing and/or volume bids placed for multiple forward contracts

Following product evaluation and product qualification, the Company is pleased to note that:

- Alpha's sintered HPA pellets are qualified for high quality sapphire glass production by ALOX Technology (USA).
- One of Alpha's specialty HPA powders is qualified with specialist German based LED phosphor manufacturer, Litec-LLL GmbH ('Litec'). Alpha has now commenced commercial product sales to Litec, up to the capacity of our existing facility in Brisbane.

The Company's products have also passed qualification with a number of end-users and Alpha has now submitted volume and/or pricing bids for eight significant product supply contracts including:

- Supply of specialty HPA powders to the Netherlands based LED phosphor manufacturer.
- Supply of aluminium precursor to a German based global chemical company.
- Supply of aluminium precursor to USA based global chemical company.

- Supply of HPA powder to a Japan based separator manufacturer.
- Supply of high purity alumina powder for semiconductor wafer polishing.
- Supply of high purity alumina, high purity boehmite and 5N aluminium-nitrate precursor to a German based LED manufacturer.
- Supply of aluminium-nitrate precursor to a Japanese chemical manufacturer.

Each of these bids remain active with the Company supplying additional information requests as they are received.

Further Sales Orders

Alpha is pleased to also be able to furnish product sales orders, calibrated to the capacity of our existing Brisbane facility. Product sales orders in the quarter include:

- a further 100kg of a specialty HPA powder to Litec for LED phosphor synthesis. Alpha and Litec remain in discussions for potential larger volume product sales.
- A further 25kg @ US\$50/kg of 5N aluminium-nitrate precursor to clients of Rhineland Specialties, USA.

Ongoing Product Test Sample Orders

During the quarter, the Company's Brisbane Demonstration Plant remained highly active servicing ongoing product orders stemming from its marketing efforts, both direct and indirect via its marketing agents. New product orders included:

- HPA powder sample to a Japanese ceramic business.
- Ultra-fine HPA powder product delivered to a Japanese manufacturer of CMP Slurries*.
- 5 separate product orders, including HPA and aluminium precursors, to a very large, global materials company based in Japan for application including glass additives and CMP Slurries.
- Al-precursor sample to a German business unit of a global, USA based chemical company.
- Ultra fine, (sub 1 micron) high purity alumina powder for specialty LED phosphors.
- 5N aluminium-nitrate for synthesis of micro-LED phosphors.
- Ultra fine, (sub 1 micron) high purity alumina powder for specialty ceramics.
- Various specification alumina and boehmite powders for transparent ceramic tape casting.

In addition, Alpha's Brisbane facility is also active in generating 2 x 100kg HPA pellet orders for delivery to ALOX Technology in the USA, for the manufacture of synthetic sapphire glass.

*CMP slurries for the semiconductor industry

During the quarter, Alpha noted an increase in inbound product enquiries for its high purity aluminium products in the application for CMP slurries. CMP (Chemical Mechanical Planarization) is the technique applied for the polishing step of various semiconductor substrates. The CMP slurry polishing process utilises a number of ultrafine materials as abrasives, including high purity aluminas. CMP slurries and pads represent approximately 7% (or US\$2.3B) of the global semiconductor wafer fabrication industry (*Source: Semiconductor Industry Association, April 2021*).

The recent increase of product enquiry for CMP slurries appears connected to the wider concern around critical semiconductor supply shortages and the re-shoring of semiconductor manufacturing, particularly to Japan and the USA.

REACH Registration process commenced for EU import

Alpha has commenced the REACH registration process required for the import of specialty chemicals, including aluminium precursors and alumina, into the European Union ('EU'). The registration process is administered by the European Chemical Agency and is expected to take approximately 3 months to complete.

Traxys marketing MOU extended

Subsequent to quarter end Alpha and Traxys North America ('Traxys') mutually agreed to extend their Memorandum of Understanding ('MOU') for a further 12 months. The MOU includes:

Product Marketing and Offtake: Joint engagement with respect to prospective customers, with a view to engaging in a long-term offtake and/or marketing agreements.

Finance and Logistics Support: To jointly develop credit and logistics solutions to assist in closing commercial agreements with Alpha's customers.

Working Capital Facilities: The provision of working capital and/or pre-payment facilities in consultation with, and in support of, potential senior lenders to the Project, including Australian Government and commercial lenders.

Direct Investment: the potential direct investment in Alpha by Traxys and/or its affiliates, including debt, equity or quasi-equity.

STAGE 1 - PPF

The September quarter saw substantial progress on the Stage 1, Precursor Production Facility ('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.

Main facility building contract awarded

Alpha has now awarded the main facility building contract for the PPF. The ~40m x 80m building (see below) will fully internalise the PPF processes. Building erection is scheduled to commence early in calendar 2022 on completion of site civils which are scheduled to commence in the December quarter.



PPF Procurement

The EPCM engineers (Prudentia Process Consultants) are strongly focused on equipment procurement to meet the August 2022 schedule for production commencement.

Recommendations to Award have now been issued for:

- Earthworks and civils
- Process pumps
- Air compressors
- Heat exchangers
- Process conveyors

The next few weeks will focus on finalising PPF tankage, electrical and contract award for Structural Mechanical and Piping engineering.

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: These workstreams include:

NAIF Strategic Assessment Approval received

As per the ASX announcement of 29 September 2021, the Northern Australia Infrastructure Facility ('NAIF') have advised the HPA First Project has successfully completed the Strategic Assessment Phase.

Accordingly, the NAIF will now commit further resources to detailed Project due diligence. Alpha will work with NAIF to provide the required information to complete its due diligence.

Term sheet executed feedstock supply

Alpha has signed a term sheet with Rio Tinto Aluminium ('RTA') for the supply of aluminium bearing feedstock to the HPA First Project from the RTA owned and operated Yarwun Alumina Refinery, Gladstone. Alpha and RTA are now working on the feedstock supply agreement for both the Stage 1 PPF and the full scale HPA First Project.

Land contract amendments signed

Alpha and Economic Development Queensland ('EDQ') have signed off the land contract amendment to allow for Alpha to accelerate the acquisition of the HPA First Project land parcel. Alpha and EDQ are targeting the first week of November for settlement. PPF earthworks are scheduled to commence shortly thereafter.

Long lead items - Vendor Engineering

Alpha has progressed the commencement of vendor engineering with preferred vendors of the key long lead items with respect to the HPA First Project, namely:

- The Solvent Extraction (SX) area.
- The HPA drying and calcining package.
- The by-product concentration area.

Worley FEED study progressed

Worley have further progressed the Front End Engineering and Design ('FEED') process for the full-scale HPA First Project, with key tasks including:

- Risk assessment.
- CapEx review of Orica interface.
- Constructability review.
- Schedule review.
- Cost range and contingency analysis.
- Schedule risk analysis.
- Review of key equipment packages including crystallizer and dryer/calciner.

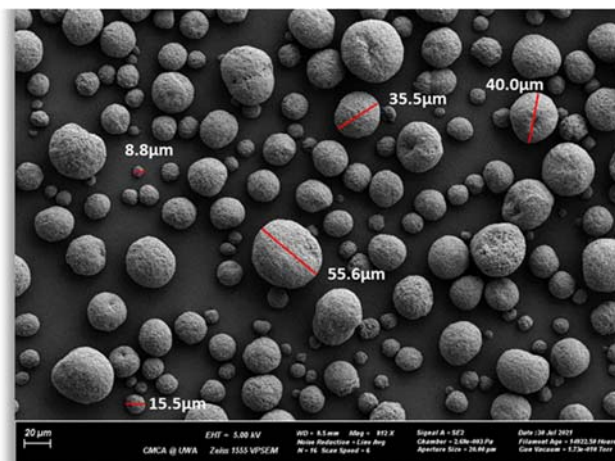
PRODUCT DEVELOPMENT

Across the September 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 is very 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.

Low surface area aluminas and boehmites

Alpha has now successfully developed low surface area (spherical) ultra high purity boehmites following a high volume inbound enquiry from a large European manufacturing business (see image below). Alpha is now translating this process to high purity alpha aluminas.



Scanning Electron Microscope (SEM) image of spherical boehmite powder

Other ongoing product development work includes:

- Specialty boehmites for lithium-ion battery coatings.
- High purity alumina coatings of both lithium-ion battery cathode and anode particles using Alpha's aluminium-nitrate precursor.
- High density (>3.6 t/m³) high purity alumina pellets.
- Nano-alumina.

CORPORATE

Industry Reclassification

Subsequent to quarter end, the Company has been reclassified to sit within the 'Commodity Chemicals' Sub-industry subgroup of the broader ASX Materials Sector, changing its Industry classification within the Materials Industry Group from Metals and Mining to Chemicals.

Having recently announced the divestment of its interests in its Collierina Project tenements in NSW, and no longer having any metals or mining related business interests, the Company received approval from S&P Global Ratings for its revised reclassification. The ASX uses the Global Industry Classification Standard ('GICS') method of categorising companies.

FBICRC Cathode Precursor Pilot Plant

Subsequent to quarter end the Future Battery Industries Cooperative Research Centre ('FBICRC') announced that it has signed contracts with a consortium of leading local, national and international companies, the WA Government, contractors and academic institutions to design and commission a Cathode Precursor Production Pilot Plant in Western Australia.

<https://fbicrc.com.au/fbicrc-signs-contract-for-18m-flagship-cathode-precursor-production-pilot-plant/>

The Company is extremely pleased to be one of 19 participant groups alongside internationally recognised names such as BASF, BHP and IGO to be working within the FBICRC program to advance the creation of the Australian lithium-ion battery materials industry.

Alpha is a financial participant as well as the supplier of high purity aluminium-sulphate precursors to the FBICRC Cathode Pilot Plant.

Related Party Expenditures

During the September quarter the aggregate amount of payment to related parties and their associates totalled \$273,583 comprising \$184,833 of payments to Directors or Director related entities for Directors' consulting fees and \$88,750 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, rental accommodation, services and supplies to the Group.

Collierina Project Divestment

In early September the Company signed a binding letter agreement with Helix Resources Ltd (ASX:HLX or 'Helix') for the divestment of the Company's interest in the Collierina Project tenements in NSW.

Under the terms of the binding letter, Helix will acquire Alpha's interests in EL8768 and EL8703 ('the Tenements') from Alpha's 100%-owned subsidiary Solindo Pty Ltd ('Solindo').

Consideration for the divestment will be:

- the issue to Alpha of 20 million Helix shares, following Helix shareholder approval, with the shares subject to voluntary escrow of between 9 and 18 months; and
- Helix granting Alpha a 1.0% Net Smelter Return Royalty on all metals from the Tenements.

Alpha considers the divestment strongly aligns with the Company's strategic direction with the following benefits:

- Expands Alpha's equity and royalty exposure to the future commercialisation of all metal deposits within the Tenements.
- Provides Alpha equity exposure to Helix's wider exploration portfolio.
- Simplifies Alpha's business focus on the successful delivery of the HPA First Project.

The divestment remains subject to all necessary regulatory approvals and Helix shareholder approval.

WONOGIRI PROJECT – INDONESIA

(45% Alpha, subject to Conditional Share Purchase Agreement)

As previously advised, Far East Gold Limited ('FEG') has now taken over the management and funding of the Wonogiri Project and is required to fulfil a number of conditions to satisfy completion of its acquisition of Alpha's 45% interest in the Project.

Alpha is pleased to note the FEG have successfully completed a seed investment round, secured additional high-quality exploration assets and completed a draft prospectus in preparation for an ASX IPO. On IPO, subject to a minimum \$6M in subscriptions, FEG to issue consideration shares to A4N for the acquisition of Wonogiri Pty Ltd to the value of \$3.375M plus \$100K in cash.

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