Alpha HPA

ASX: **A4N**
ASX Announcement
28 October 2019

The Manager Companies
ASX Limited
20 Bridge Street
Sydney NSW 2000

(7 pages by email)

REPORT ON ACTIVITIES FOR THE QUARTER ENDED 30 SEPTEMBER 2019

HIGHLIGHTS

SUCCESSFUL HPA PILOT PLANT OPERATIONS

- **HPA First Pilot Plant successfully operated over 2 campaigns**
- **Purity assays from all HPA samples produced from the two Pilot Plant campaigns returned >4N (>99.99%) purity, averaging 99.994%**
- **First Pilot Plant HPA samples successfully milled in USA**

HPA FIRST PROJECT DFS

- **DFS engineering works substantially advanced**

STRATEGIC COUNTERPARTY DISCUSSIONS

- **HPA market outreach programme identifies strong HPA demand in the lithium-ion battery sector, with a number of counterparties to receive HPA test samples from the Pilot Plant**
- **Project site selection process being run in parallel with discussions with potential reagent supply and by-product off take counterparties**
- **Land acquisition discussions for site development well advanced**

SUCCESSFUL SHARE PLACEMENT RAISES $3.5M

- **$3.5M raised to advance the HPA First Pilot Plant operations and delivery of the Company's Definitive Feasibility Study**

SALE OF RAJAWALI INTEREST

- **Rajawali's 18.36% interest in Alpha HPA sold to a major Australian institutional fund manager and a collection of high net worth individuals**

AMGC GRANT FUNDING

- **$400K grant funding approved from the Advanced Manufacturing Growth Centre (AMGC) to support HPA Pilot Plant operations and vendor testwork**

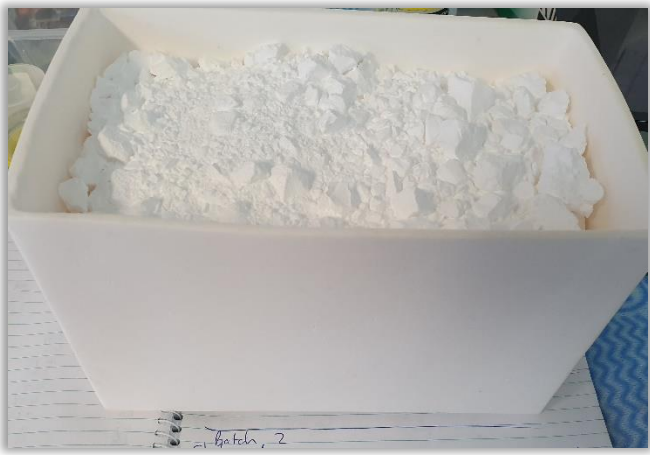
OPERATIONS

Successful Pilot Plant HPA Operations over two campaigns

During the September quarter two complete, end-to-end campaigns were completed at the HPA First Pilot Plant in Brisbane. Each Pilot Plant campaign included:

- Solvent extraction (SX).
- Aluminium salt crystallisation.
- HPA-precursor production.
- Calcination to HPA.

Removal of HPA pre-cursor from the filter



A batch of HPA pre-cursor ready for calcination

All Pilot Plant HPA Purity Confirmed at >4N Purity

Purity assays from HPA samples produced from the Pilot Plant's CB1, and CB2 campaigns (comprising 9 individual batches of HPA) all returned >99.99% purity, **averaging 99.994%** (ASX: 23 Sept 2019).

Several samples with purity of 99.995% and 99.996% were achieved. The samples were assayed using GDMS (glow discharge mass spectroscopy) in the USA. These results demonstrate an ability to deliver consistent, repeatable high-purity alumina and further validate the HPA First process at Pilot Plant scale as well as the Company's materials handling protocols.

In addition, the Company is now able to accurately predict final HPA purity via internal assaying at the pre-cursor stage providing a fast and effective QA/QC control step.

Second HPA pre-cursor production run completed

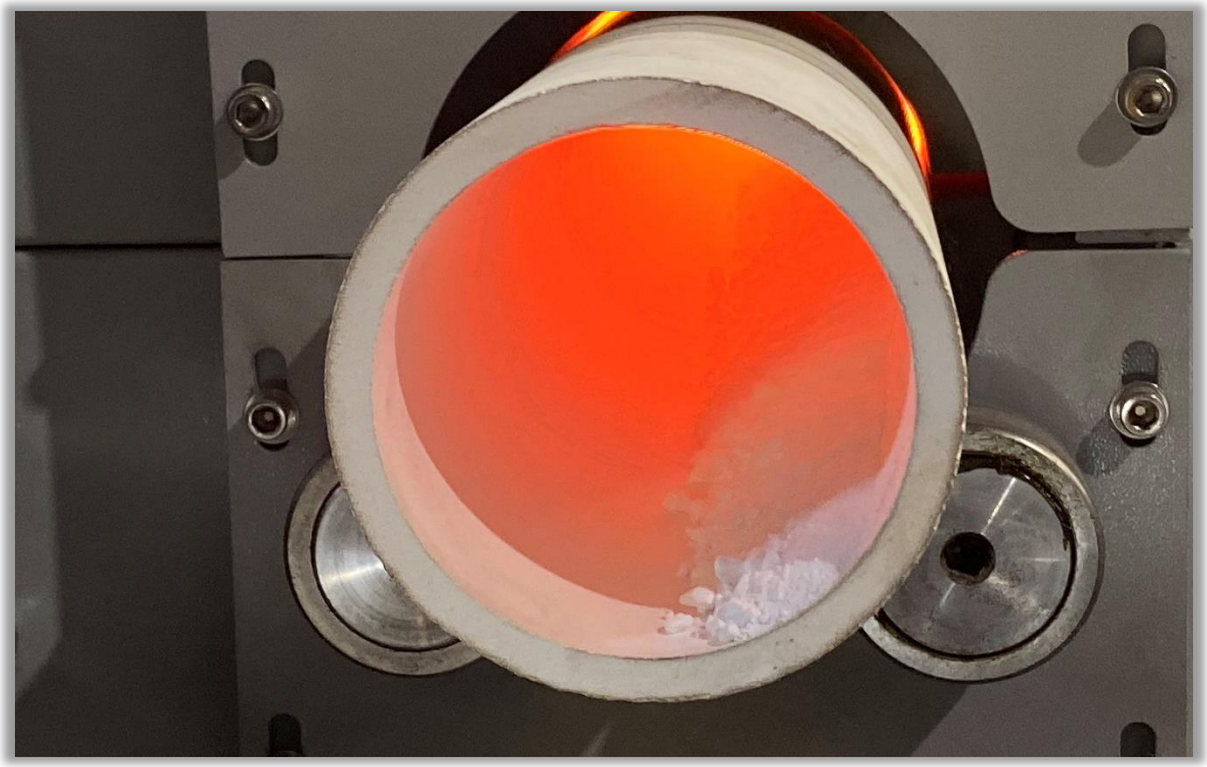
Subsequent to the initial CB1 and CB2 campaigns a 5-day, 24-hour HPA pre-cursor production run was successfully completed in the week ended 4 October 2019, generating 150kg of HPA pre-cursor. Initial assays suggest >4N purity of every batch of pre-cursor once refined into HPA.

This pre-cursor has subsequently been calcined into approximately 15kg of HPA for milling and customer qualification testwork.

Large capacity, rotary calcining unit delivered to the Pilot Plant

Post quarter end, a large capacity, 3-zone rotary calciner was delivered to the Pilot Plant facility. Following commissioning, and confirmation of purity retention, the unit will be used to accelerate calcination of HPA and to confirm design data for the commercial calciner.

Large capacity, rotary calciner on-site at the Pilot Plant



HPA production inside the rotary calciner

First HPA samples successfully milled in USA

In early October, the first trial sample of HPA was milled by a third party in the USA achieving the desired particle size distribution (PSD). The first commercial sample will be milled once assays confirm 4N purity of the trial sample has been retained through the milling process. The Company's own dedicated jet mill is currently being installed within a battery lab in Binghamton, New York, USA.

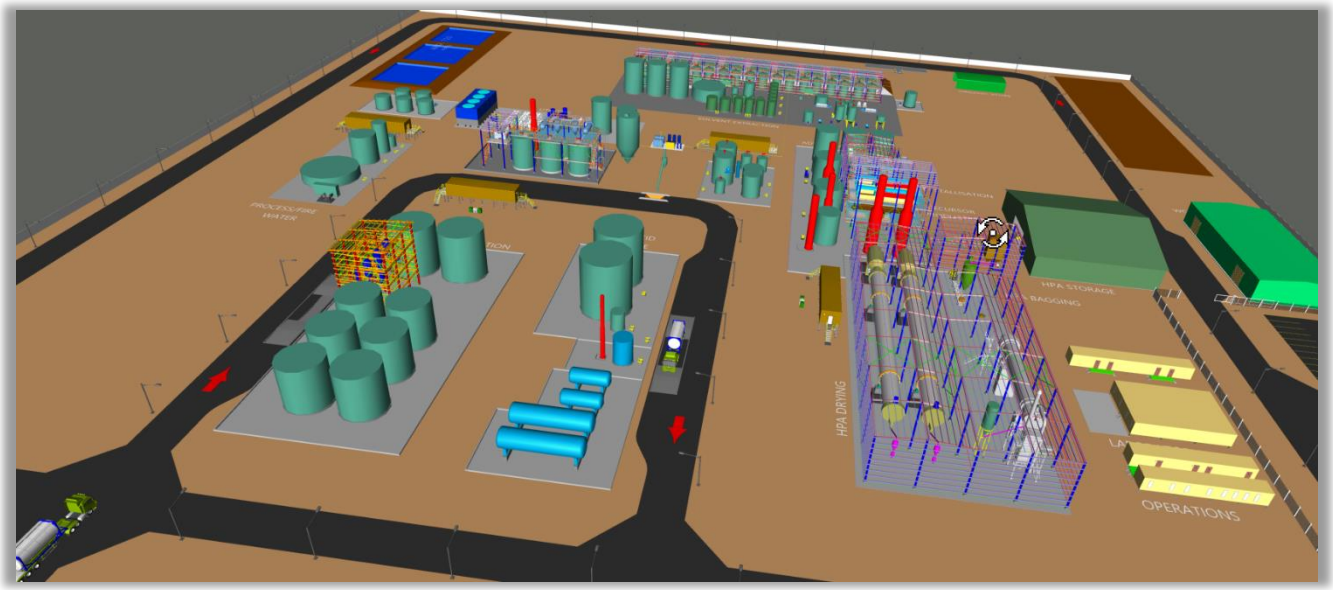
Pilot Plant Production Run

A Pilot Plant production will start in early November, commencing with a 2-week solvent extraction (SX) campaign. The Pilot Plant production run is not connected to the DFS, but is instead designed to meet expected end-user demand for HPA samples.

HPA FIRST PROJECT DFS

With two end-to-end operations of the HPA First Pilot Plant now having been run, key process data has been collected, allowing for DFS engineering work to accelerate.

- DFS process design basis updated using the Pilot Plant results.
- Equipment register has been issued
- Quotations for all major equipment items have been received.
- Evaluation of technical/commercial quotations is now underway.
- Project layout is being finalised – see 3D layout below.
- Operating costs are being confirmed and refined.
- Finalisation of plant utilities/infrastructure requirements.
- Piping and Instrumentation Diagrams (P&ID's) – 80% complete.



Interim 3D Project Layout

STRATEGIC COUNTERPARTY DISCUSSIONS

The Company has substantially progressed discussions with both HPA end-users and chemical counterparty groups during the quarter.

HPA End Users

The Company continued its market outreach programme into the application of HPA in the lithium-ion battery sector and has identified a number of large HPA end-users, in multiple jurisdictions.

Ongoing dialogue has resulted in the Company having a sound understanding of individual customer specifications and desired volumes. Milled product from the Company's HPA First Pilot program be distributed to these potential offtake partners for commercial qualification testwork early in the December quarter.

A marketing trip is planned for later in the December quarter to advance discussions with HPA end-users.

Chemical Counterparties

The Company has advanced discussions with key chemical counterparties, with respect to the supply of process reagents and sale of process by-product. These discussions have included by-product specification and quality control, potential infrastructure sharing and risk assessments, as well as the supply of Pilot Plant by-product for by-product qualification testwork.

These discussions will largely dictate the final HPA First Project location. As has been reported in previous quarters, Alpha HPA is evaluating project sites within the industrial port precincts of Newcastle NSW, Gladstone QLD and Kwinana WA. The Company has already reserved a suitable land parcel within the Gladstone State Development Area (SDA), and is assessing suitable land parcels in Kwinana, with the assistance of Development WA.

The Company is hopeful of agreeing indicative commercial terms with a preferred counterparty, and finalising the Project location, in the December quarter.

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

No exploration activities were completed during the quarter.

WONOGIRI PROJECT – INDONESIA (45% Alpha HPA)

Work on advancement of the AMDAL study (environmental impact study) for the Randu Kuning gold-copper deposit and associated aggregate deposit continued with a short hiatus prior to the Indonesian elections.

The Company successfully had its request to suspend its licence until January 2020 approved to allow it to complete the AMDAL.

CORPORATE

SUCCESSFUL SHARE PLACEMENT RAISES $3.5M

In July, the Company completed a capital raising of $3.5M at $0.10 per share from sophisticated investors. This capital raising will enable the Company to deliver a number of key milestones scheduled for CY2019 including additional Pilot Plant testwork, delivery of its Definitive Feasibility Study and advancement of its chemical counterparty and land acquisition discussions.

SUCCESSFUL SALE OF RAJAWALI INTEREST IN ALPHA HPA

In August, 110,536,400 shares representing an 18.36% interest in the Company at the time, owned by PT Muara Mulya Propertindo (a subsidiary company of the Rajawali Group) were sold to a major Australian institutional fund manager and a collection of high net worth individuals. The increased institutional support is considered to be validation of the progress the Company has made in delivering its HPA First Pilot Plant programme and advancing its engagement with potential commercial partners.

SUCCESSFUL AMGC GRANT APPLICATION

In September, the Company was granted $400,000 of funding by the Advanced Manufacturing Growth Centre ('AMGC') for the operation of the HPA First Pilot Plant, vendor testwork and in support of the HPA First Definitive Feasibility Study.

The funding is supplied under the Advanced Manufacturing Early Stage Research Fund and will be matched by funding from the Company. The successful application came after a detailed technical and commercial evaluation of the HPA First project.

R&D CLAIM

During the quarter the Company received an R&D claim for FY18 of $235,034. The claim is a precursor to a substantially larger FY19 claim.

OPTION CONVERSION

Subsequent to quarter end, 17.1M options, each exercisable at $0.10, held by the Alpha HPA Board and management team were converted into ordinary shares in the Company resulting in $1.71M being added to the Company's treasury.

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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 of high purity alumina (HPA) 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 Pre-Feasibility Study (PFS), updated in March 2019, Alpha HPA is now completing a pilot plant program at its dedicated laboratory facility in Brisbane, as part of a full definitive Feasibility Study (DFS) due for delivery in CY2019.

Key highlights of the PFS (ASX: 7 March 2019):

- Unit production costs of **US$5,123** per tonne of HPA (after by-product credits)
- Annual Free Cash Flow (FCF) at full production rate, of **US$199 million** (assuming US$25,000/t HPA)
- Capital Expenditure of US$149 million

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: 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.

Cautionary Statement

The Pre-Feasibility Study (PFS) referred to in this announcement has been undertaken to assess the technical and financial viability of the HPA First Project. Further evaluation work including a Definitive Feasibility Study (DFS) is required before the Company will be in a position to provide any assurance of an economic development case. The PFS is based on the material assumptions about the availability of funding and the pricing received for HPA. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this PFS will be achieved. To achieve the range of outcomes indicated in the PFS, Pre-Production Capital in the order of $198 million plus working capital will likely be required. Investors should note that there is no certainty that the Company will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other "value realisation" strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce the Company's proportionate ownership of the project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS.

Forward Looking Statements

This PFS 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 this PFS in light of those disclosures.

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