

Alpha HPA

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

ASX: **A4N**
ASX Announcement
23 January 2023
(8 pages)

ACTIVITIES REPORT FOR THE QUARTER ENDED 31 DECEMBER 2022

HIGHLIGHTS

STAGE 1 – PPF: SUCCESSFUL COMMISSIONING AND RAMP-UP

- Stage 1 commissioning complete and now ramping-up to nameplate capacity
- Al-nitrate production of ~16 tonnes at target 5N (99.999%) purity during commissioning
- First tranche of Critical Mineral Development Program (CMDP) grant received
- Orders placed for key long-lead equipment for Stage 1 HPA circuit

STAGE 2 – FULL SCALE PROJECT

- Further advancement of engineering design
- Multiple stakeholder site visits

PRODUCT MARKETING

- Follow-on order from large EU based cathode manufacturer
- Multiple new orders from EU based Li-battery manufacturer
- Development of new high purity aluminium trihydrate (ATH) with multiple orders received and shipped
- First nano-HPA sale order from Lumileds
- 25kg Al-nitrate order for EU catalysts manufacturer
- Market research confirms steep rise for Al-sulphate demand to 2030

CORPORATE

- Alpha and Orica expand strategic partnership:
 - Orica acquire a 5% equity interest in Alpha
 - MoU signed with Orica for a new manufacturing facility in North America

HPA FIRST PROJECT

SUPPLYING DE-CARBONISATION

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide the December 2022 quarterly activities report.

Alpha 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 high-technology sectors including:

- LED lighting;
- Lithium-ion batteries; and
- Semi-conductors.

HPA First Project activities in the December 2022 quarter were focused on:

- Construction and commissioning activities related to the delivery of the Stage 1 Precursor Production Facility ('PPF'). The Stage 1 PPF is the Company's first commercial production facility representing the acceleration of commercial production of the Company's ultra-high purity aluminium precursors. By the end of the quarter, commissioning of the Stage 1 PPF had been successfully completed with production volumes to be progressively scaled up to 100% of nameplate capacity during the March 2023 quarter.
- Expansion and acceleration of the Stage 1 PPF production capacity funded by the A\$15.5M federal Government Government's Critical Minerals Development Program (CMDP).
- Ongoing product marketing and product development activities of the Company's suite of ultra high-purity precursor and alumina products, bolstered by further small-volume product sales and increasingly advanced offtake discussion with a growing array of potential end users.
- 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 activities are outlined below.

STAGE 1 - PPF

First reagent deliveries from Orica

During the quarter the Stage 1 PPF successfully received and offloaded its first bulk reagent chemicals from Orica, allowing for commencement of chemical commissioning.

Commissioning complete, ramping up to full nameplate capacity

Chemical commissioning of the aluminium nitrate circuit commenced in November 2022 and completed in December 2022. By the end of the quarter production of aluminium nitrate (Al-nitrate) during commissioning phase had reached approximately 16 tonnes, with assays confirming production at the **target 5N (99.999%) purity level**.

With the commissioning phase completed, Alpha has shifted to ramp-up and throughput optimisation with process rates to progressively increase from ~70% (during commissioning) to 100% over the course of the March 2023 quarter.

Al-nitrate production was paused for one week over the Christmas period to allow for the tie-in of downstream equipment and the conversion of Al-nitrates to high purity alumina (HPA). This will facilitate larger volumes of HPA production to service multiple sample orders from Li-ion battery and sapphire glass end-users.



5N purity aluminium nitrate inventory



Completed Stage 1 PPF

First funds from Critical Minerals Grant with orders placed for key long-lead equipment

During the quarter, Alpha received the first tranche of \$6.82 million (including GST) of a \$15.5 million Federal Government Critical Minerals Development Grant. These funds have been applied towards immediately expanding and accelerating the production capability of the PPF.

Specifically, the grant funding has is being directed towards:

- further expanding Stage 1 PPF production capacity of aluminium nitrate and aluminium sulphate;
- facilitating up to 10tpa of additional capacity of HPA production;
- facilitating up to 10tpa of additional capacity of High Purity Boehmite production;
- facilitating the addition of tableting capacity to produce HPA tablets for sapphire glass growth; and
- installation of a large rooftop solar array and battery storage capacity.

Orders for the following key long-lead items were placed during the quarter:

- Rotary dryer
- Boehmite spray dryer
- Boehmite filter press
- Al-Sulphate centrifuge
- HPA tunnel kiln
- HPA tablet press
- Sinter oven for HPA tablets (for sapphire glass production)

This equipment will enable several existing tonnage-scale product orders to be fulfilled during 2023 and will see the Stage 1 facility capable of making commercial volumes of the Company's entire suite of high-purity aluminium products.

PRODUCT MARKETING

The December quarter saw the Company continue to make consistent progress in its ongoing product qualification and discussion with potential end users across its range of ultra-high purity aluminium products.

The quarter's marketing activities were highlighted by the following developments.

HPA delivery to sapphire glass counterparty in the EU

Alpha delivered a large (100kg) test sample order of high-density (+3.5 g/cm³), HPA (>99.995%) as sintered tablets to an EU based sapphire growth counterparty as part of final qualification.



Alpha's 100kg – HPA tablet delivery

Supply bid prices accepted for HPA to Japan-based chemical company

Following successful qualification of Alpha's nano-HPA with a Japanese based chemical company which manufactures specialist materials for the LED sector, the Company was notified its supply pricing had been accepted with the parties now moving to sales contract documentation.

Initial product volumes are modest, with an upper estimate of 10 tonnes per annum, however the application is for a premium product, with pricing at the top-end of the Definitive Feasibility Study (DFS) pricing scenarios.

Al-sulphate orders for cathode manufacture

Alpha received and delivered additional high purity aluminium sulphate test orders for a large lithium-ion cathode manufacturer.

Supply bids submitted for US semiconductor users

Alpha successfully delivered multiple product test orders for high purity boehmite, nano-alumina and high purity aluminium nitrate to end users within the US semi-conductor sector. Each of these products are used in polishing slurries for semi-conductor substrates (CMP polishing).

On request, supply bid pricing was submitted to a large North American based end-user.

Additional sales of Al-nitrate and HPA powders

The Company placed further small volume high value sales for Al-Nitrate (6kg @ US\$350/kg) and HPA powder (10kg @ ¥95,000/kg) to research end-users.

These sales are expected to continue and assist in the development of longer-dated research-linked markets.

First test orders for new high purity Al(OH)₃ product

In response to multiple end-user requests, Alpha successfully developed a process for the manufacture of a >99.99% (4N) purity aluminium tri-hydrate ('ATH' or Al(OH)₃). First test orders for this product were shipped to several potential customers in November for qualification testing. One counter-party responded rapidly with an additional order, which was shortly followed by a new order from an EU battery maker.

Follow-on order for large EU based cathode manufacturer

Following successful low volume (1kg) sample testwork and a related project site visit, Alpha received a larger volume (60kg) follow-on order of a specific HPA product for the next stage of qualification with an EU based cathode manufacturer. This order is expected to be completed and shipped by the end of January 2023.

Multiple new orders from EU based Li-battery manufacturer

Following a review of Alpha's products and low-carbon process, a large EU based Li-ion battery manufacturer ordered four test samples across most of Alpha's product range. These are currently being shipped.

The potential customer noted the ability to satisfy demand for multiple high purity aluminium products from a single production source was a key strategic advantage of Alpha's process.

First nano-HPA sale order for Lumileds

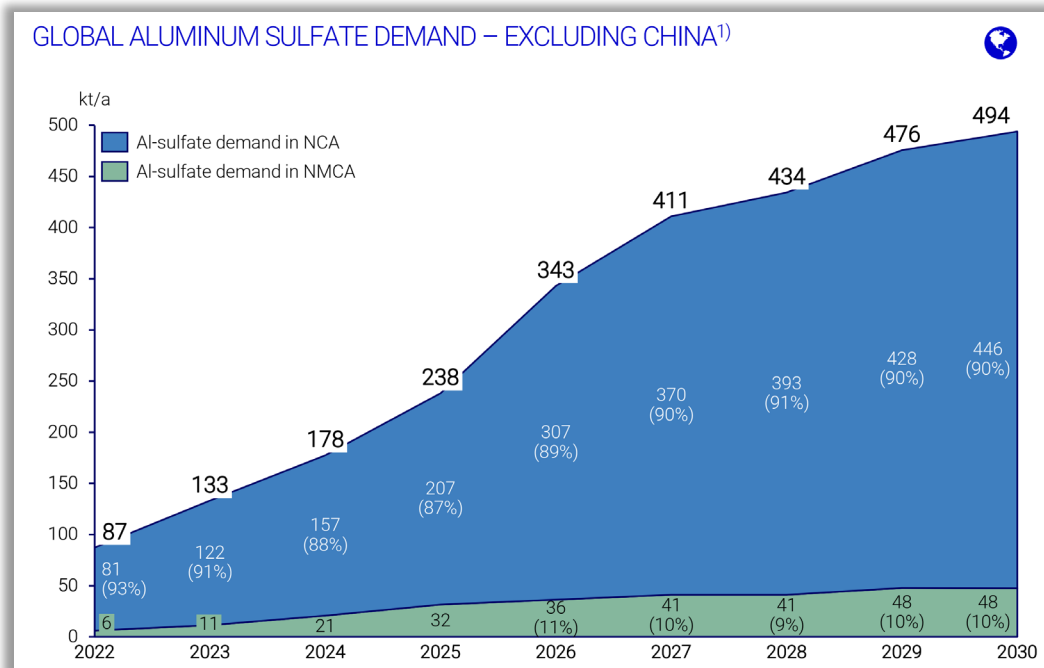
After multiple rounds of sample product testing with leading global LED manufacturer Lumileds, Alpha received its first sale order of nano HPA (5kg). A successful production run of this order by Lumileds is expected to lead to substantially larger production orders in 2023.

25kg Al-nitrate order for EU catalysts manufacturer

Alpha supplied quotes for the supply of Al-nitrate to an EU catalysts manufacturer in October 2022 and subsequently received and serviced a sample test order for 25kg for a qualification production run to complete in January 2023.

Market research confirms steep rise in Al-sulphate demand to 2030

Research by the highly regarded P3 Group (commissioned by Alpha) has forecast a dramatic escalation in Al-sulphate demand in Li-ion cathode applications. P3's research indicates ex-China demand growth for Al-sulphate from 87kt in 2022 to 494kt pa by 2030. This is considered highly favourable to Alpha's high-purity Al-sulphate product and market entry timing and correlates with the increased interest observed by Alpha in this product.



PRODUCT DEVELOPMENT

Successful development of Tri-Hydroxide (ATH)

Following interactions with several significant lithium-ion cathode manufacturers and a global advanced materials company, Alpha's product development team successfully developed a 4N+ $\text{Al}(\text{OH})_3$ (ATH) product with sample product having now been shipped and under qualification testing. This product is a potential high volume product across a diverse spectrum of applications including lithium refining and as a dopant in cathode and speciality glass manufacture.

STAGE 2 - FULL SCALE PROJECT

Further advancement of engineering design

During the quarter Alpha continued to advance engineering studies to incorporate multiple high purity aluminium products into Stage 2 of the HPA First Project. The Company has engaged an engineering and Structural, Mechanical & Piping (SMP) firm that specialises in off-site plant pre-assembly with a view to delivering material capital expenditure reductions in a final delivered plant.

Multiple stakeholder site visits

Alpha hosted multiple site visits to the HPA Project site with respect to participation in the Stage 2 Project finance and construction. Participants included potential strategic investors, existing investors as well as engineering firms engaged to progress the Stage 2 design.

CORPORATE

North American Memorandum of Understanding

In November Alpha signed a non-binding Memorandum of Understanding (MoU) with Orica to mutually investigate the technical and commercial feasibility of establishing a new manufacturing facility in North America to produce high-purity aluminium products for the rapidly expanding future-facing industries in the region.

The facility would seek to leverage and replicate the chemical process synergies that have been successfully established between Orica and Alpha in the development of the HPA First Project at Gladstone, Queensland. This would include the supply of process reagents and the offtake of process by-products to/from Alpha's and Orica's manufacturing facility, supporting circularity between the two parties.

The rationale for exploring an operational footprint in North America for Alpha is to provide a local production source to supply and capitalise on the rapidly expanding manufacturing capacity across future-facing industries in the region, including the lithium-ion battery sector, and re-shoring of supply chains into the semiconductor sector. Both sectors are key markets for Alpha's high-purity aluminium products, and both are being stimulated by key legislative initiatives including the US Inflation Reduction Act and the US CHIPS Act.

Alpha and Orica will initially focus on the technical and commercial feasibility through 2023 of a new manufacturing facility to produce high-purity aluminium products near Orica's Carseland manufacturing centre in Alberta, Canada.

Strategic Equity Placement

Concurrent with the establishment of its North American MoU, Alpha and Orica executed and completed a Subscription Agreement with Orica acquiring a 5% equity interest in the Company.

The funds will be used to accelerate final engineering and product marketing for the full-scale HPA First Project at Gladstone, and to advance feasibility studies on the potential of an additional HPA manufacturing facility in North America, with the remaining funds used for general working capital. Under the Subscription Agreement Orica subscribed for 44,982,980 ordinary shares at \$0.44 per share to raise ~\$19.8M.

Related Party Expenditures

During the December quarter, the aggregate amount of payment to related parties and their associates totalled \$395,222 comprising \$328,222 of payments to Directors or Director related entities for Directors' consulting fees and \$67,000 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, business development, staff, rental accommodation, services and supplies to the Group.

About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production 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 products and 5N (>99.999% purity) aluminium salts for sale into the lithium-ion battery, semi-conductor and LED lighting industry.

Alpha is now in commercial production of 5N purity aluminium nitrate at its Stage 1, Precursor Production Facility and is currently expanding the Stage 1 production capability as funded by the Australian Government \$15.5M CMDP Grant.

Alpha completed a Definitive Feasibility Study in March 2020 following a successful pilot plant campaign in 2019 and has now adapted and scaled the Brisbane facility to service ongoing product marketing orders and product development.

Alpha has delivered over 100 test samples to end users globally and 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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Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of entity

Alpha HPA Limited

ABN

79 106 879 690

Quarter ended ("current quarter")

31 December 2022

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	2	2
1.2 Payments for		
(a) research and development	(531)	(1,731)
(b) product manufacturing and operating costs	-	-
(c) advertising and marketing	-	-
(d) leased assets	-	-
(e) staff costs	(1,379)	(2,300)
(f) administration and corporate costs	(1,003)	(1,776)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	58	100
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	6,820	8,821
1.8 Other (provide details if material)	-	-
1.9 Net cash from / (used in) operating activities	3,967	3,116
2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	(3,229)	(14,943)
(d) investments	-	-
(e) intellectual property	-	-

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
(f) other non-current assets	(34)	(34)
2.2 Proceeds from disposal of:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
2.6 Net cash from / (used in) investing activities	(3,263)	(14,977)

3. Cash flows from financing activities		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	19,792	19,792
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	3,540
3.4 Transaction costs related to issues of equity securities or convertible debt securities	(31)	(49)
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
3.10 Net cash from / (used in) financing activities	19,761	23,283

4. Net increase / (decrease) in cash and cash equivalents for the period		
4.1 Cash and cash equivalents at beginning of period	7,783	16,825
4.2 Net cash from / (used in) operating activities (item 1.9 above)	3,967	3,116
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(3,263)	(14,977)

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	19,761	23,283
4.5	Effect of movement in exchange rates on cash held	10	11
4.6	Cash and cash equivalents at end of period	28,258	28,258

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	28,258	7,783
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	28,258	7,783

6. Payments to related parties of the entity and their associates

6.1 Aggregate amount of payments to related parties and their associates included in item 1

6.2 Aggregate amount of payments to related parties and their associates included in item 2

**Current quarter
\$A'000**

395

-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

Director fees, salaries and superannuation payments.

Quarterly cash flow report for entities subject to Listing Rule 4.7B

7. Financing facilities

Note: the term "facility" includes all forms of financing arrangements available to the entity.

Add notes as necessary for an understanding of the sources of finance available to the entity.

	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 Total financing facilities	-	-

7.5 **Unused financing facilities available at quarter end** -

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

N/A

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (item 1.9)	-
8.2 Cash and cash equivalents at quarter end (item 4.6)	-
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 Total available funding (item 8.2 + item 8.3)	-
8.5 Estimated quarters of funding available (item 8.4 divided by item 8.1)	N/A

Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.

8.6 If Item 8.5 is less than 2 quarters, please provide answers to the following questions:

8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Not applicable.

8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Not applicable.

8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Not applicable.

Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 23 January 2023.

Authorised by: By the Board.
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.