

Alpha **HPA**

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

ASX: **A4N**
ASX Announcement
25 July 2023
(14 pages)

ACTIVITIES REPORT FOR THE QUARTER ENDED 30 JUNE 2023

STAGE 1 – PPF

- Cumulative Al-nitrate production of ~150 tonnes at target 5N (99.999%) purity
- HPA circuit equipment installation well progressed with first areas in commissioning phase

PRODUCT MARKETING

- Expanded engagement with global Li-B cathode and anode manufacturers
- Indicative end-user bids for up to 80% of Stage 1 PPF HPA capacity
- Semiconductor CMP test work on Alpha's nano HPA shows outperformance
- Continued demand for Alpha's high purity alumina tri-hydrate (ATH)
- Stage 1 and Brisbane facility currently servicing >40 test orders
- Successful REACH registration for Al-nitrate export to the EU

ALPHA SAPPHIRE

- Expansion of LOI with Ebner-Fametec for an additional 1,000 crystal growth units
- Construction of first sapphire growth units underway
- Assessment of site locations and renewable energy options underway
- Joint marketing activities with Ebner-Fametec commenced

FULL SCALE PROJECT

- Receipt of initial payment of Federal government MMI grant funding
- Project financing negotiations further advanced

CORPORATE

- Rob Williamson, COO, appointed as Executive Director
- EcoVadis Sustainability Rating – upgraded to Silver
- Receipt of \$1.6M R&D tax incentive

PROJECTS UPDATE

SUPPLYING DE-CARBONISATION

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide the June 2023 quarterly activities report.

Alpha remains strongly focused on the delivery of the HPA First and Alpha Sapphire Projects, each representing the commercialisation and production of critical high purity aluminium products driving de-carbonisation utilising the Company's proprietary aluminium purification and refining technology.

The HPA First and Alpha Sapphire Projects 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
- Semiconductors.

Activities in the June quarter were focused on:

- Continued production of 5N (>99.999%) purity aluminium nitrate (Al-nitrate) and demo-scale production of high purity alumina products within 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, the Stage 1 PPF had successfully produced more than 150 tonnes of 5N purity Al-nitrate.
- Ongoing deployment of the Federal Government's \$15.5M Critical Minerals Development Program (CMDP) on design and procurement of major equipment required for the Stage 1 PPF's high-purity aluminas (HPA) circuit.
- Expanding product marketing and product development activities of the Company's suite of ultra-high purity precursor and alumina products.
- Refinement of a robust process flow sheet for the production of high purity (5N) alumina tri-hydroxide (ATH).
- Expansion and implementation of the Company's collaboration with the Ebner-Fametec Group to accelerate the Company's stage entry into the downstream production of synthetic sapphire glass.
- Continuing to concurrently advance detailed engineering studies and project financing discussions with Government lending agencies to facilitate a Final Investment Decision for the full scale HPA First Project.

Further details on these activities are outlined below.

STAGE 1 – PPF

HPA circuit expansion

Across the quarter Alpha continued to deploy the \$15.5 million grant awarded under the Critical Minerals Development Program (CMDP) to install a small-scale commercial HPA circuit within Stage 1 and expand the capability of the Stage 1 PPF to include Alpha's full high purity aluminium product range.

Most major equipment orders have now been delivered and installed (see example images on following pages).

Items under construction off-site and due for delivery include an HPA sinter oven, jet mill and rotary dryer. The Stage 1 PPF rooftop solar array contract has been awarded with installation underway.

Once fully deployed, the CMDP grant funding will facilitate:

- the expansion of Stage 1 PPF production capacity of aluminium nitrate and aluminium sulphate;
- the capability to produce up to 15tpa of HPA production, including nano HPA production to service end-users in the (CMP) sector for Chemical Mechanical Polishing (CMP) of semi-conductor substrates.
- the capability to produce up to 10tpa of High Purity Boehmite;
- the production of HPA tablets for synthetic sapphire glass growth; and
- installation of a large rooftop solar array.

During the quarter, the HPA circuit design was slightly modified to accommodate small-scale commercial production of Alpha's high purity alumina-hydrate (ATH) to service the expanding end-user demand for this product.

Stage 1 production

Production of high purity Al-nitrate has continued, with cumulative Al-nitrate production having now reached approximately 150 tonnes at the target 5N (99.999%) purity level. Production levels are being maintained at around 850kg per day, as the conversion of Al-nitrate into additional product lines ramps up.

Ahead of the commissioning and installation of the Stage 1 HPA circuit, the Stage 1 PPF is now also at steady state for demonstration scale production of 4N purity gamma phase and alpha phase aluminas, as well as the production, on a 24 hour basis, of custom-shaped sintered HPA tablets for Ebner-Fametec.

These production lines are now servicing approximately 600kg of HPA product orders across a range of potential customers.

The Stage 1 PPF is also supplying Al-nitrate to the Brisbane facility to service end-user test orders for high purity boehmites (Al-O-OH), high purity alumina hydrate (ATH) and high purity nano-aluminas.

Production capacity will be materially increased once the HPA circuit within the Stage 1 PPF is fully installed and commissioned.



Rooftop Solar Installation – Stage 1 PPF



Aluminium Sulphate Centrifuge – delivered to site



Rotary HPA dryer/calciner – ready to ship



Automated HPA tablet press – delivered to site



HPA Tunnel Kiln – in place

Major equipment deliveries – Stage 1 – HPA Circuit

PRODUCT MARKETING

Alpha's global marketing effort has continued to gather momentum with a series of positive qualification test results and a number of significant global brands, particular in the lithium-ion (Li-ion) battery cathode sector, now working with the Company on expanded test work on Alpha's materials as cathode dopants. Inbound enquiries on the Company's high purity alumina tri-hydrate (ATH) and high purity nano-aluminas have also expanded.

The Company is currently servicing over 40 product test orders from both the Stage 1 PPF and the Product Development Centre in Brisbane.

Test work commenced with multiple new global Li-B cathode manufacturers

The Company has seen considerable expanded interest in Alpha's products from a number of global Li-B cathode manufacturers (OEMs).

A detailed matrix of qualification test work has now commenced with these new counterparties, including for the following products as cathode dopants*:

- aluminium sulphate;
- gamma phase high purity alumina; and
- high purity alumina-trihydrate (ATH).

Key drivers in this expanded engagement with cathode OEMs has been interest in Alpha's high purity, low-carbon materials as well as supply chain compliance with the US Inflation Reduction Act (IRA).

** Cathode dopant refers to the addition of aluminium bearing compounds into or onto the cathode to stabilise the cathode active material.*

European marketing trip scales up end-user engagement

From late May to mid-June, Alpha completed a comprehensive marketing trip within the EU, with a focus on:

- engaging new Li-B sector end-users through exhibiting at the Stuttgart Battery Show;
- consolidating existing end-user relationships;
- in-person site visits to potential strategic counterparties; and
- site visit to Ebner-Fametec (see Alpha Sapphire update below).

The Company was highly encouraged by the response from the various marketing efforts, with multiple new test work programs initiated and existing engagements materially advanced.

Further Expansion of Al-oxide coating of Li-B anode materials

Alpha has received a number of positive test results from end-users in respect of the Al-oxide coating process of graphite Li-B anode materials.

The coating process utilises Alpha's 5N Al-nitrate as the main aluminium precursor.

This has resulted in expanded test work, including small scale commercial coatings for a Japanese based battery manufacturer.

First stage testing by a major EU based developer has confirmed significant technical benefits of the Al-oxide coating on carbon and moved to second stage test work.

In addition, and significantly built on the Stuttgart Battery Show engagement, Alpha has commenced Al-oxide coating test work with a further five Li-B anode material developers and OEMs.

Indicative end-user bids for up to 80% of Stage 1 HPA capacity

Following two successful rounds of scaled up product test work and small-scale sales, Alpha has now received indicative bids to supply one of its HPA products to an end-user in the semiconductor sector commencing early 2024.

The application and pricing are considered premium, with the customer bidding to take up to 80% of the HPA production capacity of Stage 1 once the expanded HPA circuit is in full operation with future increased demand potential.

Supply discussions are being advanced, with a few remaining conditions precedent ahead of a final contract.

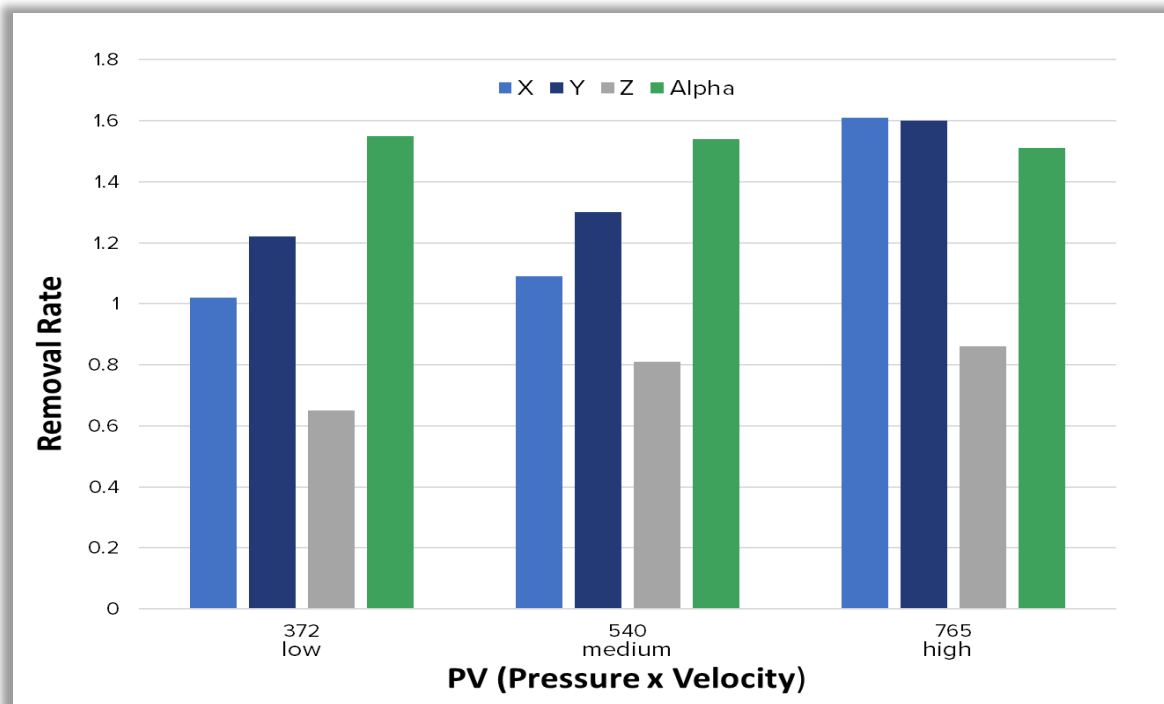
Semiconductor CMP test work on Alpha's nano HPA shows outperformance

As part of Alpha's wider engagement with the semiconductor sector on the application of its nano-HPA in CMP (Chemical Mechanical Polishing) slurries, the Company has commissioned specialist third party test work to understand the performance of our materials in this high-value application.

The test work was conducted both to educate our internal technical and sales team on Alpha's product offering and as a sales tool to assist in marketing to this sector.

Controlled test work assessing the performance of Alpha's nano-HPA as a CMP abrasive on silicon-carbide (SiC) semi-conductor substrates, confirmed outperformance when measured against industry incumbent slurries (shown as X, Y & Z in the graph below).

Summary results are shown below, confirming CMP slurries made with Alpha's material showed highest removal rates at the lowest PV values. PV values represent pressure multiplied by velocity of the polishing conditions, with performance at low PV's strongly preferred by the industry as this affords lower operating temperatures to minimise deformation of the substrate.



Removal rates of SiC substrates by CMP slurries at different PVs. Alumina based CMP Slurries made with Alpha's HPA (in green) is compared against industry incumbent alumina based slurries (X, Y & Z)

Continued demand for Alpha's ATH

End user demand for Alpha's ATH continues to build momentum, with test orders for ATH now representing approximately 30% of test orders by volume. End user demand applications include:

- Li-B cathode doping; a precursor to nano alumina for CMP polishing;
- a low carbon precursor to existing HPA production;
- a precursor to gamma alumina catalysts;
- a dopant for aluminium into alumina-silicate glass.

Successful REACH registration for Al-nitrate export to the EU

Alpha has now successfully completed its REACH registration with the European Chemicals Agency (ECHA) for the import of aluminium nitrate into the EU.

Successful REACH registration is a pre-condition for a significant supply contract with a major EU based end-user.

ALPHA SAPPHIRE



Expansion of synthetic sapphire glass agreements with the Ebner group to include further scale-up and joint marketing

In March 2023, the Company announced agreements with Ebner Industrieofenbau GmbH ('Ebner') and Ebner subsidiary Fametec GmbH ('Fametec'), to provide for the staged entry by Alpha into the production and sale of synthetic sapphire glass utilising Ebner-Fametec sapphire growth technology and utilising Alpha's custom HPA tablets as feedstock.

The agreements included the following:

- Commercial and Technical proposals
- Technology Licence Agreement
- Letter of Intent (LOI)

The staged entry under these agreements included:

- Phase A - Purchase and installation of an initial 2 synthetic sapphire growth units: *Now Underway*
- Phase B - Purchase and installation of a further 48 synthetic sapphire growth units: *Total 50*
- Phase C - Purchase and installation of a further 50 synthetic sapphire growth units: *Total 100*

Following expanded engineering and commercial interaction between Alpha and Ebner-Fametec, as well as broader engagement with potential customers, Government, potential strategic investors, and renewable energy providers, Alpha and Ebner-Fametec have elected to expand the existing LOI to include:

- an agreement to work co-operatively on an additional, large-scale expansion of the Australia based sapphire growth installation, to be referred to as the 'Nova Phase'. The Nova Phase will contemplate the purchase, construction, installation and operation of up to an additional 1,000 synthetic sapphire growth units;

the commercial premise for the addition of the Nova Phase being that once an expansion from Phase B to C (50 to 100) has been elected, the essential components of a successful business are established and may be readily expandable;

and:

- agreement to work co-operatively on the research and market outreach activities related to expanding the customer base for sapphire products, including;
 - cost sharing of market research;

- provision of market intelligence;
- co-ordinated identification of potential end-users and customers;
- co-ordinated market outreach; and
- potential establishment of a dedicated marketing entity.

The joint marketing arrangements will operate between the following counterparties:

- Alpha Sapphire Pty Ltd (a wholly owned subsidiary of Alpha) as a special purpose, Australian domiciled company, dedicated to the growth, processing and sale of Net-Zero CO₂ synthetic sapphire, and
- Arctic Sapphire AS, a wholly owned subsidiary of Fametec, as a special purpose, Norway domiciled company, dedicated to the growth, processing and sale of Net-Zero CO₂ synthetic sapphire.

Synthetic Sapphire Growth and Markets

Sapphire glass is the crystalline form of high purity alumina (HPA or Al₂O₃). It is grown in specialised growth units, which melts raw material (HPA) at +2,000°C and then crystallises the melt as a single crystal known as a sapphire 'boule'. The process is technically specialised, but also highly repeatable.

The process is energy intensive, so access to a low-cost, firm-supply of renewable Net-Zero CO₂ electricity is a key consideration.

Major synthetic sapphire applications include:

'Optics' - Optics is a group term including watch faces, sapphire windows, phone lens covers, specialised medical applications and also defence applications.

'LED/Semiconductors' - Sapphire wafers are cut along the c-axis plane from a c-axis grown ingot where they are polished, patterned and ultimately presented to LED manufacturers for 'epitaxy', being the growth of the LED circuitry onto the wafer substrate.

'Power Electronics (PE) /Semiconductors' - Sapphire wafers are cut along the c-axis plane from a c-axis grown ingot where they are polished, patterned and ultimately presented to PE manufacturers for 'epitaxy', being the growth of the PE chips onto the wafer substrate.

Sapphire Industry Dynamics and Investment Rationale

Synthetic sapphire glass is produced from premium purity HPA feedstock in bespoke, high technology growth furnaces.

After an extended period of investigation into the sapphire glass market and manufacturing process, Alpha has identified this as a unique opportunity to partner with a world class company and innovator and capitalise on a significant value adding downstream use of its HPA product.

Alpha estimates the adoption of the Ebner-Fametec technology for the conversion of HPA to sapphire glass represents a net revenue uplift of ~10x per unit of alumina

Alpha's view is that there are three key disruptions within the synthetic sapphire market which combined provide a unique opportunity to enter the synthetic sapphire market, being:

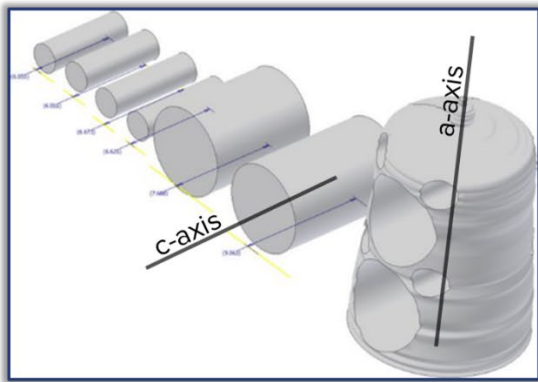
1. TECHNOLOGICAL DISRUPTION: THE FAMETEC MCSAP TECHNOLOGY

To date, the most proven and reliable growth method for high quality synthetic sapphire growth has been the Kyropolous or KY method.

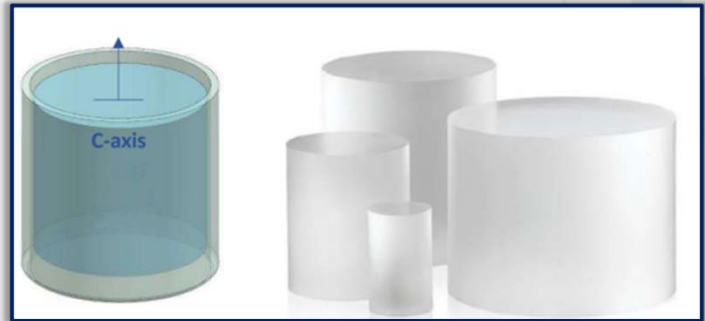
The KY method grows large boules (90-120kg), however the KY method is only proven for a-axis growth, which provides low utilisation rates of ~35-40% of sapphire per boule and high rates of energy consumed per kg of usable sapphire. The remaining ('crackle') is recycled or sold.

Fametec's crystal growth process, known as the McSAP (Multi c-Axis Sapphire) method has been developed over 10 years and with estimated R&D expenditure of over €20M.

C-axis sapphire crystal growth achieves +60% utilisation of the crystal boule (compared to ~35-40% for current industry standard a-axis crystals) with ~50% power saving (per kilogram of grown crystal) realised through greater utilisation per crystal boule and growth of multiple boules per production run, realising a significantly lower energy production. This combines to realise a materially lower carbon footprint than other crystal growth processes. The McSAP process is accordingly considered a well-suited complement to Alpha's low carbon HPA feedstock.



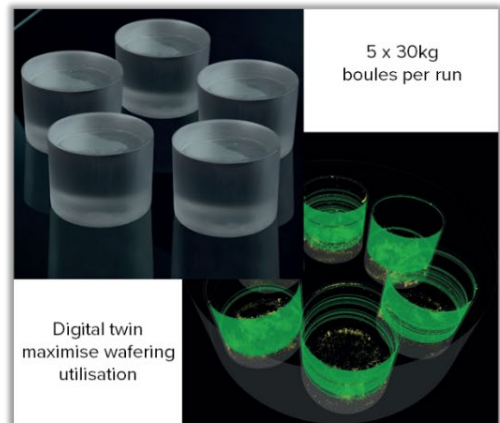
C-axis ingots produced from an a-axis Kyropoulos sapphire boule showing low utilisation



C-axis ingots produced from an c-axis grown McSAP sapphire boule showing high utilisation

Alpha estimates each growth unit will be capable of circa 4,000 kg (4 metric tonnes) of synthetic sapphire per annum.

In addition to higher utilisation rates in the production of sapphire ingots, Ebner-Fametec technology employs optical scanning to produce a unique 'digital twin' of each sapphire boule to ensure maximised utilisation during wafering (see below).



2. SUPPLY CONCERNS

Globally, high technology sectors are experiencing an intensifying global trend towards de-risking/re-shoring and friend-shoring supply chains.

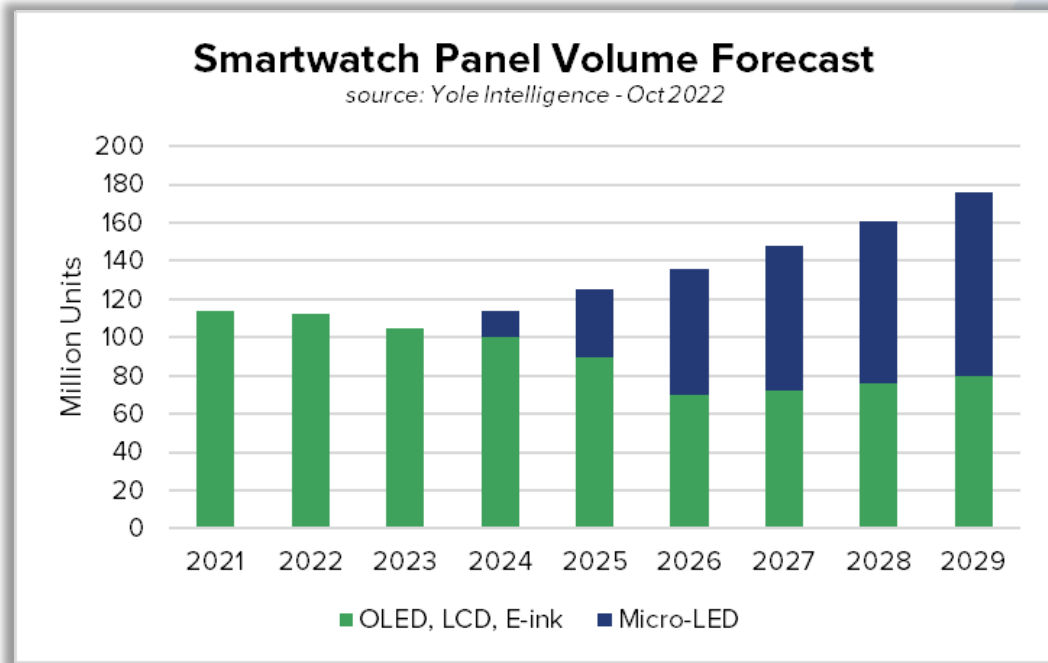
Traditionally, Russian and Chinese companies have dominated synthetics sapphire growth, accounting for >80% market share. However, there is now growing thematic amongst end-users to diversify supply to be sourced from preferred jurisdictions.

In addition, the end-user sectors are placing stronger emphasis to decarbonise supply chains to meet emission targets. With sapphire growth being an energy intensive process, the Ebner-Fametec lower energy technology, combined with Alpha's ability to access renewable energy provides an attractive alternative to the higher carbon intensity of the current global sapphire glass producers.

3. NEW DEMAND DRIVERS

Synthetic sapphire wafers are the dominant substrate in LED lighting. The increasing adoption of mini LEDs and micro LEDs, in particular within smartwatch displays is predicted to grow to US\$17B by 2026, with wafer demand for micro LEDs forecast to grow at a CAGR >500% between 2023-2027 (source *MarketWatch Inc*).

The adoption is driven by significant reduction in power draw and an improved user experience. As an example, the forecast adoption of micro LEDs into smartwatch displays is presented below.



*Forecast adoption of micro-LEDs into smartwatch panel displays
(Source: Yole Intelligence – Oct 2022)*

Construction of first sapphire growth units on schedule

The joint engineering team of Alpha and Ebner-Fametec are co-ordinating the construction and installation layout for the first two sapphire growth units purchased by the wholly owned Alpha subsidiary, Alpha Sapphire Pty Ltd, as per Phase A of the agreement with Ebner-Fametec.

The construction of the units remains on schedule, with first equipment deliveries due late 2023, for installation and commissioning targeted for early 2024.

Alpha representatives completed a site visit to Ebner-Fametec in June to view synthetic sapphire growth in operation with Alpha's feedstock materials and to conference on sapphire marketing strategies.



Synthetic sapphire growth units operating at Ebner-Fametec, Austria. These units are identical to those under construction for Alpha Sapphire and are currently being used to qualify Alpha's HPA feedstock.

Assessment of site locations and renewable energy options underway

Alpha has commenced a process of engaging with the market on renewable energy supply for the Alpha Sapphire Phase B/C Fab (100 units). This work will heavily influence site location, with the synthetic sapphire growth facility having the flexibility to be located for convenient access to reliable and competitively priced renewable energy. Space for expansion to the Nova phase (up to 1,000 additional units) in the same location is also a consideration in the assessment.

Joint marketing activities with Ebner-Fametec commenced

Alpha and Ebner-Fametec have commenced activities under the joint marketing arrangement agreed under the recently agreed LOI.

Activities have included site visits to target customers in the EU with upcoming marketing to the LED and semiconductor end-user sectors in the Bay Area, California at Semi-Con West.

Marketing activities have already generated requests for quotations to supply synthetic sapphire to the optics sector.

STAGE 2 – FULL SCALE PROJECT

Multi-product engineering advanced

The Company continues to work on updating the Definitive Feasibility Study (DFS) for the full scale Stage 2 HPA First Project which will include an expanded array of product lines. Discussions with key execution consultants and construction contractors have commenced to further the execution model. The major Structural, Mechanical, Piping (SMP) contractor under consideration has also submitted a competitive proposal for a large portion of the facility enabling a strong basis for cost estimation for the balance of the plant.

Focus on de-risking the schedule of works continues with a major milestone of signing the 'Offer to Connect' from Ergon, the electrical energy transmission corporation for Central Queensland. This has the benefit of locking in the timing for energisation of the facility. Other vendor engineering packages have also been reviewed and updated as part of the DFS update.

Final Stage Independent Technical Engineers' (ITE) review underway

Alpha has commenced the final stage ITE review process as will be required by project financiers including the new products added since their prior engagement. The ITE is expected to be completed in the coming months covering off on capital expenditure, project schedule and execution strategy in support of project financing timelines.

Project financing negotiations advanced

In the context of the multi-product engineering and the ITE process described above, project financing negotiations continue to be advanced with project financiers including industry participants and the Australian and Queensland Governments, with a view to finalising a financing package for the construction of the full-scale Stage 2 HPA First Project.

Modern manufacturing initiative – receipt of initial payment of Federal Government grant funding

The Company has received an initial payment of \$2.475 million (including GST) under the \$45 million Modern Manufacturing Initiative - Collaboration Stream ('MMI-C') grant from the Commonwealth Department of Industry, Science and Resources ('Department of Industry').

The \$45 million MMI-C grant will be applied toward the capital expenditure of the full-scale Stage 2 HPA First Project. Alpha was the lead applicant, with the grant application supported by Orica Ltd ('Orica') as joint applicant and 10% of the grant proceeds will flow to Orica to offset their capital expenditure required to support the HPA First Project.

The grant is anticipated to be paid as per the following schedule, subject to the completion of activity schedule milestones by the Company, summarised below:

Payment event	Payment amount (GST exc.)	Anticipated payment date
Initial payment	\$2,250,000	(payment received)
Progress payment	\$4,500,000	31 January 2024
Progress payment	\$13,500,000	31 July 2024
Progress payment	\$13,500,000	31 January 2025
Final payment	\$11,250,000	29 August 2025
Total	\$45,000,000	

CORPORATE

Executive Director appointment

During the quarter, the Board announced the appointment of Rob Williamson as an Executive Director of the Company. Rob has been the Company's Chief Operating Officer since June 2020, successfully overseeing the construction and commissioning of Stage 1 of the HPA First Project and building an operations and senior management team ahead of the Stage 2, full-scale implementation of the Project. Rob is a mechanical engineer and prior to joining the Company rebuilt and started up a new 155ktpa SX zinc refinery in the USA in the capacity of Vice President and GM of the facility. Rob has over 20 years of experience in large facility operations with his appointment reflecting his increasing contribution to key corporate and commercial elements of the business.

EcoVadis Sustainability Rating – upgraded to Silver

During the quarter the Company was pleased to receive a Bronze Medal sustainability rating following an initial ratings process from independent sustainability ratings agency, EcoVadis.

Subsequent to the end of the June quarter the Company was advised that the Company's rating had been upgraded to Silver, placing Alpha in the 91st percentile range of companies rated by EcoVadis.

The rating follows a detailed review of the Company's key sustainability policies and practises including in relation to the following fields:

- environment;
- labour and human rights;
- ethics; and
- sustainable procurement.

A Silver Medal rating is considered a very strong result for a Company of Alpha's size and growth stage.

The rating was initiated as a pre-condition to finalising supply contracts with a key target customer within the EU. An independent sustainability rating has also been flagged as a pre-condition to two additional target customers with which Alpha is in advanced product qualification.

Receipt of \$1.6 million R&D tax incentive

During the quarter the Company received an R&D Tax Incentive refund of \$1.6 million for the 2021/22 financial year. The R&D Tax Incentive is an Australian Government program under which companies receive cash refunds for 43.5% of eligible expenditure on research and development. The incentive refund results from R&D expenditure on the Company's HPA First Project.

Related Party Expenditures

During the June quarter, the aggregate amount of payment to related parties and their associates totalled \$496,507 comprising \$430,757 of payments to Directors or Director related entities for Directors' consulting fees and \$65,750 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, 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 aluminium 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 and 5N (>99.999% purity) for sale into high technology markets including semiconductors, lithium-ion battery and LED lighting.

Alpha completed a Definitive Feasibility Study in March 2020 following a successful pilot plant campaign in 2019.

Alpha is now in production at its Stage 1, Precursor Production Facility which has now completed a successful commissioning and entered production ramp-up phase. The Stage 1 facility is also now being expanded to produce the full range of Alpha's high-purity materials with \$15.5M grant funding from the Australian Government.

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pjn11756

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")

30 June 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	-	17
1.2 Payments for		
(a) research and development	(1,163)	(3,515)
(b) product manufacturing and operating costs	(2,538)	(5,024)
(c) advertising and marketing	(318)	(543)
(d) leased assets	-	-
(e) staff costs	(1,304)	(5,215)
(f) administration and corporate costs	(1,211)	(3,573)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	186	478
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	11,606	20,427
1.8 Other (GST on government grants)	1,000	1,082
1.9 Net cash from / (used in) operating activities	6,258	4,134
2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	(4,592)	(23,626)
(d) investments	-	-
(e) intellectual property	-	-

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
(f) other non-current assets	-	(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	(4,592)	(23,660)

3. Cash flows from financing activities		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	-	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	(1)	(53)
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	(1)	23,279

4. Net increase / (decrease) in cash and cash equivalents for the period		
4.1 Cash and cash equivalents at beginning of period	18,939	16,825
4.2 Net cash from / (used in) operating activities (item 1.9 above)	6,258	4,134
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(4,592)	(23,660)

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(1)	23,279
4.5	Effect of movement in exchange rates on cash held	(15)	11
4.6	Cash and cash equivalents at end of period	20,589	20,589

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	20,589	18,939
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)	20,589	18,939

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**

497

-

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, as well as fees paid to MIS Corporate Pty Ltd, an entity in which Director's Peter Nightingale and Norman Seckold hold a controlling interest which provides administrative, accounting, company secretarial and rental services to the Company.

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

7. Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
<i>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.</i>		
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)	6,258
8.2 Cash and cash equivalents at quarter end (item 4.6)	20,589
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 Total available funding (item 8.2 + item 8.3)	20,589
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: 25 July 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.