

Alpha **HPA**

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

ASX: **A4N**
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HPA FIRST PROJECT UPDATE

SUPPLYING DE-CARBONISATION

STAGE 1 – PPF

- **PPF construction on schedule**
- **Earthworks and civils proceeding well**
- **PPF throughput capacity expanded by 75% to +350tpa (from 200tpa)**
- **Process equipment deliveries commenced**

PRODUCT MARKETING

- **HPA pellets (for sapphire glass) qualified with premium end-user**
- **Further product sales as lead orders**
 - **50kg Al-Nitrate precursor (US\$40/kg)**
- **10 further product test orders received in CY22 to date**
- **Active coating testwork underway with Li-ion anode manufacturers**

STAGE 2 - FULL SCALE PROJECT

- **Study underway to adopt higher precursor volumes**
- **Lender due diligence advanced**

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide an update on project activities for its HPA First Project, representing the commercialisation and production of critical high purity aluminium products driving de-carbonisation.

Alpha is fully funded to commercial production at its Stage 1, Precursor Production Facility (PPF) which is under construction in Gladstone, QLD and scheduled to commence commercial production of the Company's high purity Aluminium Precursors from September Qtr 2022.

The Company is concurrently satisfying the remaining conditions precedent to the full-scale Project Final Investment Decision, with a focus on product sales and offtakes and project financing.

STAGE 1 - PPF

The Company continues to make good progress on the Stage 1 PPF component of the HPA First Project, as detailed below:



Aerial overview of HPA First Project Site, Gladstone – showing civil construction progress on left hand side



Main PPF building steel delivered on site, ready for erection



Process equipment deliveries commencing to the Alpha staging shed - Gladstone

Earthworks and civil works well advanced

Following the completion of the site excavation and fill, approximately 50% of the main building slab has been poured, with the full slab on schedule for completion by early March. Service conduits for electricals, and underground piping are largely complete.

PPF Building onsite

Alpha has taken delivery of the structural and sheeting steel for the PPF building at the project site (*refer images above*). Building erection will commence during March once the main building slab installation is complete.

Process equipment deliveries commenced

All contracts for mechanical fabrication and process equipment for the PPF have now been awarded. Deliveries of fabricated process equipment has commenced to Alpha's staging shed in Gladstone (*refer images above*), ahead of installation into the PPF.

Upscaled PPF throughput

Alpha has elected to capture a number of opportunities through the PPF design and fabrication stages to materially upscale the capacity of the PPF. This is based on marketing feedback suggesting larger volumes on AI-Nitrate precursor can be placed into the market if available. Changes adopted to increase throughput include:

- Increased tank sizes
- Large diameter hard piping, and
- Upgraded process control system

As a result, the PPF capacity has expanded by approximately 75%, and expected to be in excess of 350tpa on an AI-nitrate basis, scaled up from 200tpa.

Common Infrastructure

Alpha has also taken the opportunity to scale up key infrastructure installation to allow for common use of this infrastructure with both the PPF and the future Stage 2 facility. Common infrastructure installations include:

- High performance fibre optics data link
- Firewater tankage, pumping and piping
- Septic facilities
- Potable water connections
- Grid power connections

Other

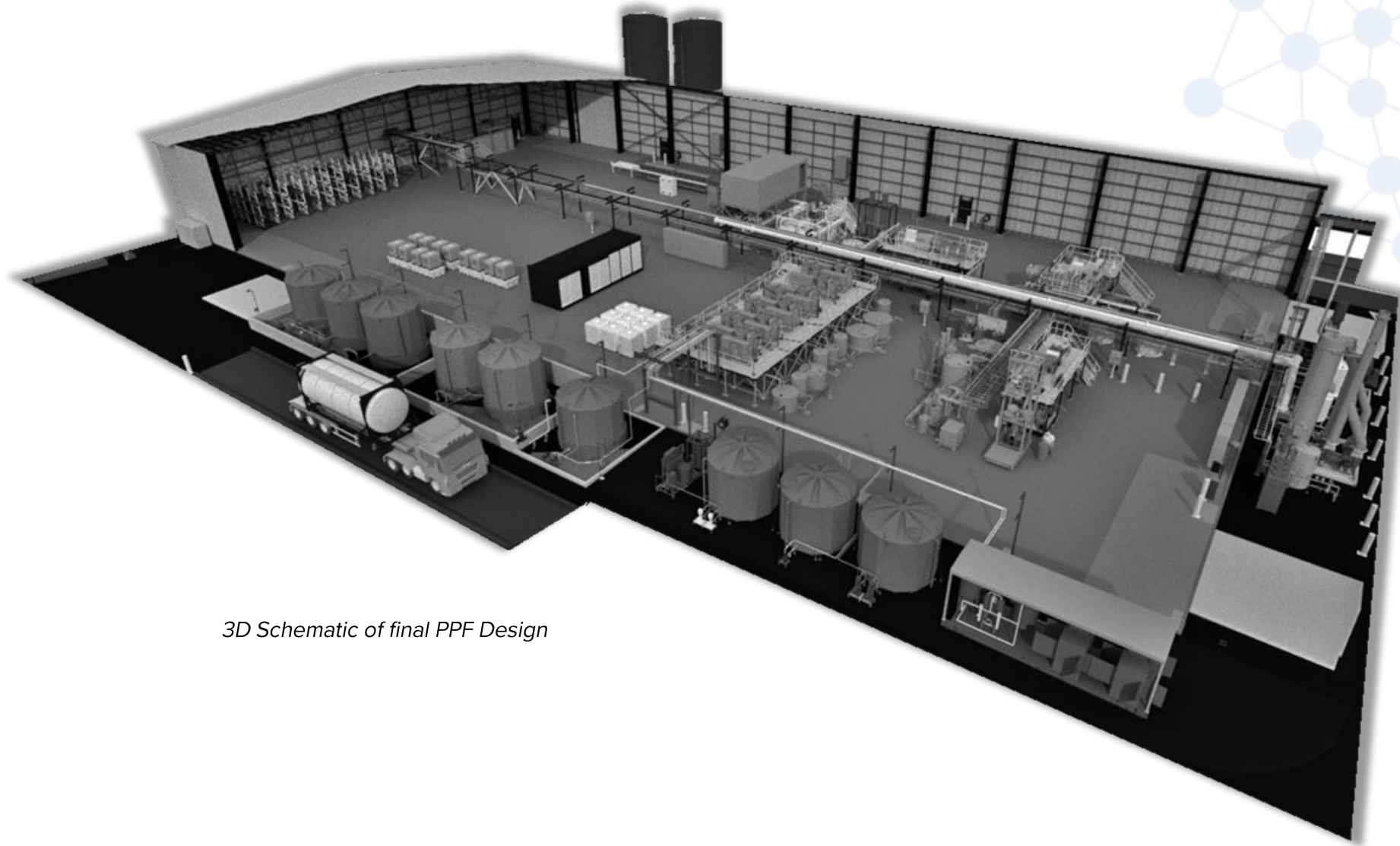
The remaining key contracts about to be awarded include:

- Structural, Mechanical and Piping installation (SMP)
- Electrical, Instrumentation and Control (EI&C)

PPF Budget Update

Alpha has increased the PPF CapEx budget by approximately \$7.9m to accommodate the following:

- Upscaled tankage, piping and process control system to allow for PPF capacity increase
- Additional engineering hours to allow for PPF capacity increase
- Increased earthworks and civils budget, to allow for larger volumes of clean fill and concrete



3D Schematic of final PPF Design

PRODUCT MARKETING

Alpha maintains an active product marketing program, with a number of engagements now maturing to the commercial stage. In addition, Alpha continues to outreach to new markets and jurisdictions, as well as continuing to receive inbound product test and sales orders.

HPA Pellets (for sapphire glass) qualified with premium end-user

Alpha's HPA pellet feedstock has now been qualified for sapphire glass manufacturer by a premium European based end-user.

The end-user has now requested 2nd stage orders using the same feed material (from Alpha) and the same sapphire glass manufacturer.

The 2nd stage order volumes are expected to be 1-3 tonnes, and represents a pre-commercial order ahead of potential larger contracts next year.

The 2nd stage request is considered a significant endorsement of Alpha's product quality, as the premium consumable electronics market represents the most demanding quality requirements for sapphire glass.



Alpha's pellets as feedstock to sapphire glass

Further lead sales orders

Alpha has recently satisfied a number of product sales orders. Each of these sales are considered lead orders for potential larger volume contracts. New sales orders this year include:

50kg Al-Nitrate precursor (US\$40/kg)

Alpha has completed a sales order for its 5N purity Al-Nitrate precursor as a lead order for the development of laser crystals for medical applications. Multi-tonnage orders are expected if testwork is successful.

Further product test orders

Alpha continues to receive product test orders from potential customers with a further 10 product test orders this calendar year to date, including:

- Multiple products for a European based developer of micro-LED phosphors
- Multiple products for a global lighting company
- Al-nitrate sample for an EU based manufacturer and distributor

Further pricing bids submitted

In the calendar year to date, Alpha has submitted a further two pricing bids to supply:

- High dispersible boehmites at >100tpa
- Al-nitrate precursors at 2-5tpa

Alpha has now submitted 14 supply bids for price, volume and freight terms and remains active in advancing supply discussions where existing bids have been supplied, and where supply negotiations have commenced.

Active coating testwork underway with Li-ion anode manufacturers

As well as actively marketing its 5N purity aluminium-precursors to lithium-ion battery cathode end-users, Alpha is working with end-users co-ordinating a number of rounds of testwork coating a range of their lithium-ion anode active materials material with high purity alumina. The application of coatings on both anode and cathode active materials is now an entrenched technology, with established benefits in lithium-ion battery performance.

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:

Lender Due Diligence

Alpha continues to advance due diligence with key lenders. Materials being provided to lenders include:

- Updated HPA Market Report (CRU- January 2022)
- Stage 1 ITE report (Bankers Engineers)
- Environmental & Social (E&S) due diligence report – completed by Bankers Engineer
- Indigenous Engagement Strategy (IES)
- Climate Reporting and Emissions Reductions Strategy
- Legal DD – Lender s legal appointment imminent
- Insurance – Alpha's insurance brokers appointed

Study underway to adopt higher precursor volumes

Alpha is now completing a revised Project scenario modelling based on a range of updated product mixes informed by the Company's marketing activities. The re-configured Project will include higher volumes of aluminium precursors.

The re-configured HPA First Project product scenarios will form the final basis for Project Financing.

About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of ~10,000tpa equivalent 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 and 5N (>99.999% purity) for sale into the lithium-ion battery and LED lighting industry.

Alpha completed a Definitive Feasibility Study in March 2020 following a successful pilot plant campaign in 2019. Alpha has since upscaled its Brisbane facility to demonstration scale and has now recorded over 4,000 operating hours and delivered an expanded range of over 80 high purity product orders to end-users globally.

Alpha is fully funded to the commercial production at its Stage 1, Precursor Production Facility which is scheduled to commence commercial production for the Company's high purity Aluminium Precursors from September quarter 2022.

The Company 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.

For further information, please contact:

Rimas Kairaitis

Managing Director

rkairaitis@alphaHPA.com.au

+61 (0) 408 414 474

pjn11139

Cameron Peacock

Investor Relations & Business Development

cpeacock@alphaHPA.com.au

+61 (0) 439 908 732