

The Manager Companies - ASX Limited
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ASX Announcement
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(4 pages)

STAGE 1 HPA LINE NEARS COMPLETION SUPPLYING DE-CARBONISATION

STAGE 1 – PPF

- Installation of HPA circuit into Stage 1 PPF nears completion
- Commissioning of installed equipment well advanced
- HPA tunnel kiln commissioning, 2-3x higher throughput rates than design
- 4 of 5 HPA rotary kilns now commissioned
- Jet mill room installed
- Rolls crusher installation complete
- Solar array fully installed and in final testing
- Al-Nitrate precursor production to date at +200 tonnes at 5N (99.999%) purity

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide an update on project activities for the Company's Stage 1, Precursor Production Facility (PPF) in Gladstone, QLD. The Stage 1 PPF is currently in small scale commercial production for its 5N purity aluminium nitrate (Al-nitrate) precursors and is currently expanding to provide for the production of the full range of Alpha's high purity aluminium products.



Stage 1 PPF – showing completed rooftop solar installation

STAGE 1 – PPF

HPA circuit expansion

Alpha is now in the final stages of deploying the \$15.5 million grant awarded under the Critical Minerals Development Program (CMDP) to install a small-scale commercial high-purity aluminas (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 been delivered and installed, with commissioning activities underway.

The HPA circuit is on track to be fully commissioned by the end of calendar 2023 and will facilitate:

- the expansion of Stage 1 PPF production capacity of aluminium nitrate and aluminium sulphate;
- the design capacity to produce up to 15tpa of additional capacity of HPA production, this capacity is now being revisited to the upside, see below
- Nano HPA production to service end-users in the semi-conductor (CMP) sector;
- the capability to produce up to an additional 10tpa of high purity boehmite;
- the capacity to produce 15-25tpa of high purity alumina-trihydrate (ATH)
- the production of HPA tablets for synthetic sapphire glass growth, and

The HPA precursor area, which feeds the HPA circuit is now fully commissioned.



HPA tunnel kiln – in final commissioning

HPA calcination circuits

The HPA tunnel kiln and 4 of 5 rotary kilns are now installed, operational and in final stage commissioning.

These circuits will allow Alpha to service product orders for an range of end users, including HPA sales for the South Korean semi-conductor sector (Ref: ASX 22 August, 2023) and for the manufacture of sintered HPA tablets for sapphire glass growth.

Encouragingly, throughput rates through tunnel kiln commissioning indicate throughput times are likely to be reduced from 24 hours, possibly down to as low as 8 hours, indicating potential for a 2 to 3 times throughput benefit over design.

HPA milling circuits

The soundproof jet mill enclosure is now installed and connected to ventilation, awaiting arrival for the scaled-up jet mill, due next month.

The HPA lined three-stage rolls crusher, to be used to meet custom HPA specifications developed with customers, is also installed.



Jet mill enclosure (LHS) and HPA rolls crusher (RHS) installed

Boehmite and ATH circuit

This high purity boehmite and ATH circuit is largely installed, with minor pipework and valve installation being progressed prior to commissioning.

Other

Various product conveyors and materials handling equipment are being installed and commissioned.

The HPA dryer unit arrived on site this week (see below), with the HPA tablet sinter oven arrived in Brisbane and due for delivery this week.

The only remaining key equipment for delivery is the jet mill, which is due for delivery in November.



HPA dryer arriving at site this week

Stage 1 production

Stable production of high purity Al-nitrate precursor has continued, with cumulative Al-nitrate production having now reached approximately 200 tonnes at the target 5N (99.999%) purity level. Production levels are being maintained at around 850kg per day. Approximately 50% of the Al-nitrate production has been dedicated to conversion into HPA once the Stage 1 HPA circuit is fully commissioned. The remainder is being allocated for sales once final contracts are concluded.

Ahead of the commissioning of the new HPA circuitry, the Stage 1 Facility is producing 4N purity alpha phase and gamma phase HPA at small scale to support the Brisbane facility in supplying sales and product test orders. This includes the ongoing production of custom-shaped sintered HPA tablets for sapphire growth testing by Ebner-Fametec in Austria.

These production lines are now servicing approximately 500kg 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 trihydrate (ATH) and high purity nano-aluminas.

Solar Array

The 360kW, rooftop solar array is now fully installed, operational and undergoing final testing (refer photo on first page). During peak generation, the rooftop array is estimated to be capable of generating ~30% of the Stage 1 PPF electricity demand.

About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of high purity aluminium materials 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) and 5N (>99.999% purity) aluminium materials for sale into high technology markets including the semiconductor, lithium-ion battery and LED lighting sectors.

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. The Stage 1 facility is also now being expanded to produce the full range of Alpha's high-purity aluminium materials with \$15.5M grant funding from the Australian Government.

The Company is now in the mature phases of market outreach and project financing with respect to the full scale Stage 2 HPA First Project, with the expectation of positioning Stage 2 to Final investment Decision.

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