

The Manager Companies - ASX Limited  
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ASX Announcement  
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## MAIDEN SAPPHIRE GROWTH



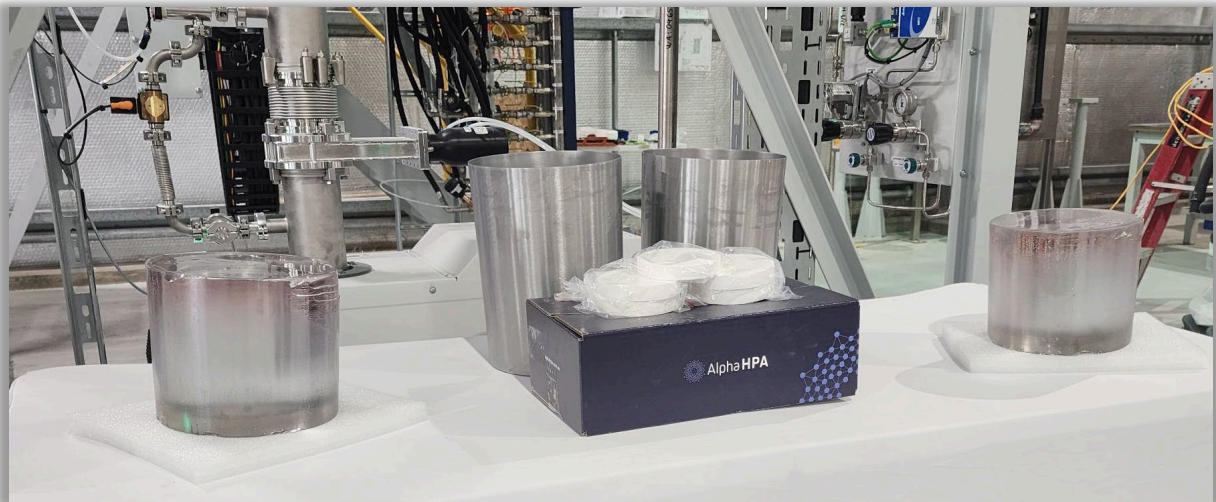
Alpha **SAPPHIRE**

- **Alpha Sapphire completes maiden synthetic sapphire growth**
- **Production of 300kg of C-axis 8” sapphire boules**
- **Next production run commenced**

Alpha HPA Limited (**Alpha** or **the Company**) (ASX: A4N) is pleased to provide an update on project activities for **Alpha Sapphire**. Alpha Sapphire is a wholly owned subsidiary of Alpha, established to commercialise the first and only synthetic sapphire growth capability in Australia utilising the Ebner-Fametec sapphire growth technology and Alpha’s high purity alumina feedstock.

Alpha is delighted to advise that the Company has successfully grown the first ~300kg of C-axis synthetic sapphire crystal boules, as maiden growth runs from the Company’s first 2 sapphire growth units at the Company’s HPA facility in Gladstone, QLD. Next production runs will commence immediately.

The sapphire boules will be sent to the Ebner/Fametec facility in Austria for further quality assurance review to confirm performance test criteria are on track. Alpha Sapphire will also send 2 boules for sapphire processing into ingots for further testing ahead of the start of customer qualification.



*Two of the first sapphire boules (left and right) grown from the maiden sapphire growth run. Crucibles and feedstock shown at the centre of the image*

Alpha’s Managing Director, Rimas Kairaitis said, “*This is a very exciting milestone for the Company, and also represents what we believe is the first production of synthetic sapphire in Australia. The Alpha HPA process and the Ebner-Fametec growth technology each represent innovative and disruptive technologies and are perfectly matched in the production of low-carbon synthetic sapphire.*”

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### About Alpha Sapphire

Alpha Sapphire is a 100% owned Alpha HPA subsidiary dedicated to the commercialisation of the growth, processing and sale of high value synthetic sapphire glass utilising Alpha's high purity alumina feedstock.

Synthetic sapphire glass is the pure crystalline form of high purity alumina, or  $Al_2O_3$ , grown under controlled conditions as a single monolithic crystal. Synthetic sapphire glass has unique physical properties related to its purity, crystal matrix and hardness, that makes it a critical, high value input into LED lighting substrates and various optical applications including consumer electronics, medical application and defence.

In March 2023, Alpha entered agreements with Austria based technology provider Ebner-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.

Alpha has a Letter of Intent (LOI) with Ebner-Fametec to purchase and roll-out sapphire growth units in the following phases:

- **Phase A:** Purchase and installation of an initial 2 synthetic sapphire growth units: **Complete**
- **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**

In June 2023, the agreement between Alpha and Ebner-Fametec was expanded to include a LOI to work co-operatively on sapphire marketing and to target 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.

Alpha Sapphire has secured up to \$30 million project funding from Queensland Critical Minerals and Battery Technology Fund (QCMBTF) and has secured matching equity funding from a strategic placement in November 2023.

Alpha has undertaken a detailed assessment of the business opportunity presented by synthetic sapphire growth. This includes direct engagement with end-users in both the LED and sapphire optics markets and includes detailed price discovery with respect to expected pricing and processing costs.

Alpha considers the financial opportunity for sapphire glass growth to be robust, driven by:

- Highly favourable market supply and demand dynamics
- The higher utilisation of sapphire using the Ebner-Fametec sapphire growth technology.
- The more efficient use of energy in the Ebner-Fametec sapphire growth technology.
- The available price of renewable electrical energy.

Based on a range of scenario splits between sales to the Optics and LED end markets, Alpha has modelled EBITDA returns of between US\$516K to US\$693Kpa per sapphire growth unit (refer ASX: 2 November 2023).