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# ADDITIVE MANUFACTURING ASX:3DA

**CEO's Presentation** 

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# **Corporate timeline**



Shanahan appointed to Advisory Board David Wolf appointed as defence offsets advisor Adelaide facility launched EOS M400 installed Factory testing of SP500, SP100 machines completed Award of AS9100 Certification (Melbourne) Strategic Alloys JV with PPK Boeing PO for evaluation parts Ken Davis appointed as VP North America Memko teaming agreement Placement raises \$9m

Q4 2020

Q3 2020

Award of AS9100 Certification (Los Angeles) SP260 and SP400 machines launched PO secured with Gilmour Space Tooling PO secured with SMR HoA submitted for Middle East printing facility Titanium powder plant announced DISP Approval Tuan TranPham appointed to Advisory Board Testing and development for Fletcher's tooling testing and development completed Confirmed properties of Amaero H.O.T Co

02 2021

### Q1 2021

SPP raises \$4.825m Nissan PO for tooling Raytheon PO for evaluation specimens secured Rio Tinto agreement Award of AS9100 Certification (Adelaide) Ti Powder

03 2021

Gilmour Space HoA Lease secured for titanium plant; building specs and layouts confirmed

> Q4 2021 to date

Titanium plant progress: equipment ordered, key personnel recruited, test of technology confirms improved yields and earnings upgrade from \$30m up to \$40m. Expected ROI on capex now approx. 5 months





# Key projects

## Titanium Powder Plant

- Will enable production of aerospace-grade titanium to the highest standards at approximately half the cost of the nearest competitor Planned to be
- constructed and commissioned over a 12month period
- Located in Victoria, Australia
- Titanium powder manufacture to play a major role in revenue and profit generation in the short-medium term.

# Middle East

- Development of a proposed 3D printing centre in the Middle East
- Funded by one of the world's largest defence companies
- Project anticipated to be worth more than \$100m and the largest metal 3D printing facillty of its type globally

### **Fletcher Insulation**

- Testing and developing an additive manufacturing tooling application for Fletcher's Glass "pink batts" insulation systems
- Amaero has built a protoype for a recycled Fletchers Glass spinner
- Heads of Agreement (HoA) expected to be signed this quarter

### Boeing

- Purchase order for evaluation parts
- Amaero building out its USA facilities to cater for expanded relationships with Boeing's various divisions

## **Gilmour Space**

- HoA to lead to a longterm supply agreement for the manufacture of rocket components
- Supply agreement is expected to deliver total revenues to Amaero of approximately \$1.7m
- Production of the components for the supply agreement will commenced in Q4 2021

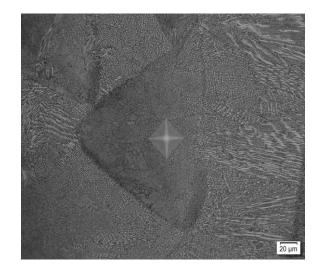


# FY21 highlights

- Successful build of the recycled Fletcher Insulation glass spinner with IN718 alloy completed, spinner tooling repair patent finalised, full specification filed and production geometry in the production alloy built
- Delivery of Purchase Order to Boeing
- Receipt of first batch of ingots manufactured by Rio Tinto under collaboration for "Amaero HOT AI"
- Draft Heads of Agreement submitted for proposed 3D printing centre in the Middle East
- Establishment of Joint Venture company with PPK Group (ASX: PPK) to focus on the development of new super strength alloys
- Christopher Pyne and Tuan TranPham appointed to Global Advisory Board; Ken Davis appointed VP of North American operations
- Placement and SPP raise \$13.825 million; cash balance of approximately \$11.5 million
- Amaero investing heavily in R&D which is applications focused R&D tax refunds received of >\$500k



#### Completed build of the Fletcher tool



#### Amaero H.O.T. Co 3D printed



# 1H FY22 update

#### Titanium plant announced:

- New plant expected to be the most advanced titanium alloy powder plant in the world
- Revised revenue guidance for the plant to ~A\$40.8m p.a. following evaluation trials confirming yields of metal powder products are better than the base case
- Lease for facilities secured; select component testing completed, machines being constructed

#### Gilmour Space:

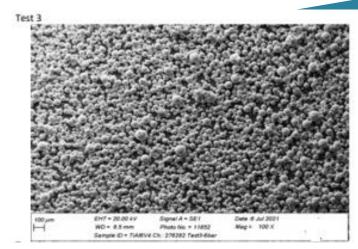
Heads of Agreement (HoA) secured: will lead to a long-term supply agreement for the manufacture of rocket components expected to deliver total revenues of ~ \$1.7m

#### Fletcher Insulation:

- After some delays, we expect an HoA to be signed this quarter.
- Alloy developed with an increase of 22% yield strength at 2100 F and 32% harder under a Vickers hardness test

### Rio Tinto:

- Freight delays due to ongoing COVID-19 supply chain issues have caused project timing slippage.
- First batch is being atomised into powder and testing will commence in the current quarter.
- Second shipment of Amaero H.O.T. Al has left Rio Tinto



#### Powder from Amaero tech trial (SEM)



Second shipment of Amaero H.O.T. Al leaves Rio Tinto

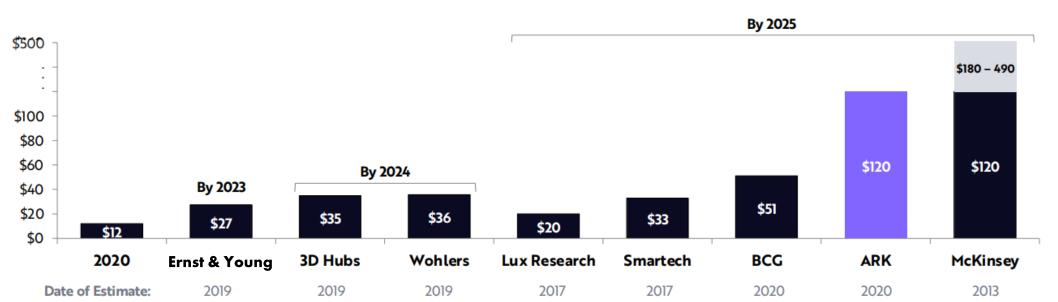


# Market opportunity

**Billons**, USD

# ARK believes that the global 3D printing market will scale at a compound annual rate of 60% during the next five years, from \$12 billion to roughly \$120 billion by 2025.





Forecasts are inherently limited and cannot be relied upon. For informational purposes only and should not be considered investment advice, or a recommendation to buy, sell or hold any particular security. Source: ARK Investment Management LLC, 2020 based on data sourced from 3D Printing Trends 2020: Industry Highlights and Market Trends. 3D Hubs Manufacturing LLC, 2020, www.3dhubs.com. "EY's Global 3D Printing Report 2019." Ey.com/De, Ernst & Young GmbH, Oct. 2019. McCue, TJ. "Significant 3D Printing Forecast Surges To \$35.6 Billion." Forbes, Forbes Magazine, 3 Apr. 2019, www.forbes.com/sites/tjmccue/2019/03/27/wohlers-report-2019-forecasts-35-6-billion-in-3d-printing-industry-growth-by-2024/#121d7a9d7d8a, The 3D printing market will quadruple to US\$12 billion by 2025. "3D Printing Market to Quadruple to \$12 Billion in 2025" [press release], Lux Research, April 29, 2014, http://www.luxresearchinc.com/news-and-events/press-releases/read/3d-printing-market-quadruple-12-billion-2025 "SmarTech Analysis Annual Additive Manufacturing Market Summary Report Says AM Market Grew to Over \$10B Worldwide in 2019." Attachment, www.globenewswire.com/NewsRoom/AttachmentNg/2bfad03b-3edd-4c69-b0a5-e83ca835ea6e/en. Küpper, Daniel, et al. "Get Ready for Industrialized Additive Manufacturing." BCG Global, BCG Global, 8 Jan. 2021, www.bcg.com/publications/2017/lean-manufacturing-industry-4.0-get-ready-for-industrialized-additive-manufacturing. Manyika, James, et al. "Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy." McKinsey & Company, McKinsey & Company, 1 Mar. 2013, www.mckinsey.com/insights/business\_technology/disruptive\_technologies.



# Growth strategy

Our growth strategy is to focus on immediately addressable commercial opportunities (such as the tooling market) whilst still providing growth optionality through long-term R&D with the global defence and aerospace industries.

Short term	Medium term	Longer term
(1-2 years)	(3-5 years)	(5+ years)
<ul> <li>Manufacture and sales of metal powders</li> <li>Assist countries to establish independent additive manufacturing facilities.</li> <li>Expand manufacture of components, tooling and services (e.g., Fletcher Insulation).</li> <li>Development and sale of 3D printing machines (and turnkey packages).</li> <li>Manufacture of components for aviation, defence and space.</li> <li>Development of additional alloy powders for sovereign capability in critical metals, including future materials in collaboration with our customers (e.g., Strategic Alloys JV with PPK).</li> </ul>	<ul> <li>Finalise expansion plan for the titanium powder plant rollout, expected to be between 5-10 times capacity of proposed plant.</li> <li>Demonstrate our technology and solutions expertise in qualification projects and preproduction for large projects in the defence and aerospace sector (e.g., defence prime contracts).</li> <li>Expansion of US facility to accommodate customer demand.</li> <li>Release of new machines with higherperformance lasers.</li> <li>Future materials on offer.</li> </ul>	<ul> <li>Further expansion of international presence</li> <li>Further expansion of powder manufacturing and future materials.</li> <li>Further expansion of additive manufacturing facilities.</li> <li>Consider strategic M&amp;A opportunities to deliver more extensive value chain coverage</li> </ul>

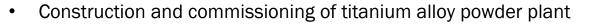
#### Focus areas:

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- Improve competitiveness and efficiencies in winning and delivering contracts with USA-based clients
- Expand presence in the tooling market (especially US) and in plastic injection tools and die casting moulds
- Sale of SP series 3D printers and consumable metal powders for the rapidly growing AM sector



# Outlook: Next 6-12 months



- HoA and tooling maintenance agreement expected to be secured with Fletcher Insulation
- HoA and binding agreement for Middle East project
- Additional purchase orders expected from Boeing following certification of multiple projects
- Further development and scale-out of H.O.T. Al production with Rio Tinto
- A number of key agreements with aerospace and defence firms expected to be signed
- Further expansion of US facilities expected





Artist's impressions of proposed Titanium alloy powder plant



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# Thank you. Questions?