

# AML3D August 2023 Update



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## **Investment Thesis Slide**

AML3D is a world leading supplier of advanced additive manufacturing technology, with a clear strategy to deliver shareholder value over the immediate, medium and longer term.

- AML3D's proven proprietary technology has attracted interest and demand from the US Department of Defence / US Navy.
- Growing US additive manufacturing market creates a substantial opportunity.
- Established global Tier 1 corporate clients including Boeing, Chevron, BAE Systems.
- Clear strategy to rapidly scale presence in US defence market, driven by Value Added Reseller agreement and establishing local presence.
- Future proofing technology advantage through partnerships with respected R&D institutions, including RMIT, Queensland University, Curtin University, Flinders University.



## **Corporate Overview**

AML3D combines patented technology, sophisticated software, robotics and leading-edge metallurgical science to supply advanced, industrial scale, metal 3D printing solutions to Tier 1 clients in Defence, Oil & Gas and other sectors.

ASX: AL3	
Share Price (31/07/23)	\$0.07
Shares on Issue	235,553,713
Options	11,500,000
Market Capitalisation	\$16.5m
Net Cash	\$4.5m*





Noel Cornish AM Chairman, Non-Executive Director

Noel Cornish AM is one of Australia's foremost business leaders. Noel has achieved international and Australian business success including roles as President, Northstar BHP LLC in the USA and Chief Executive of Bluescope Steel's Australian and New Zealand businesses.

## Board of Directors



Sean Ebert Interim CEO Executive Director

Sean has over 25 years of executive and board level experience within the engineering sectors of oil and gas, mining and resources and emerging technologies in Australia and internationally.



Andrew Sales Executive Director, CTO

Founding director of AML3D. A Chartered Engineer and expert in welding technology with 30 years of global experience within the oil & gas, resources and mining, and advanced manufacturing sectors.



Kaitlin Smith Company Secretary

Kaitlin has over 10 years' professional experience as the Company Secretary of several ASX listed companies in a variety of industries. Kaitlin holds a Bachelor of Commerce is a Chartered Accountant and Fellow of the Governance Institute of Australia.

What is AML3D's Technology

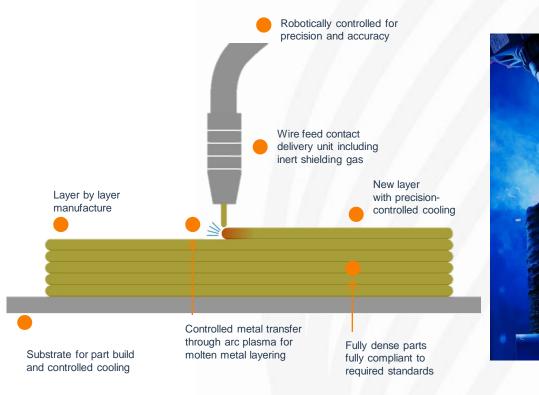


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# What is Wire-arc Additive Manufacturing (WAM<sup>®</sup>)?

WAM<sup>®</sup> uses an electric arc to precisely deposit layers of wire feedstock to produce high performing, industrial scale, metal components

- Combines sophisticated robotics technology and cutting-edge arc welding science
- WAM<sup>®</sup> process uses precision arc direct energy deposition (DED) to precisely deposit layers of wire feedstock to 3D metal print
- WAM<sup>®</sup> printed industrial scale metal components created to near net shape which is then machine finished
- Uses AML3D's proprietary software and materials database to manage the deposition process

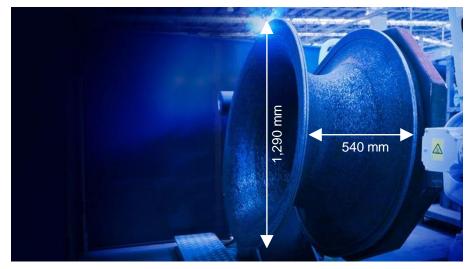


## **Unique Technological Offering**

Proprietary WAM® technology is industry leading and enhances the relevance of the 3D metal printing sector

### **Industrial scale 3D metal printing**

 Proprietary, Industry 4.0 Wire Additive Manufacturing technology for industrial scale 3D metal printing solutions



Marine industry: Panama chock

### **On-demand 3D metal printing**

 Using WAM<sup>®</sup>ARCEMY<sup>®</sup> enables customers to metal 3D print parts on demand and close to point of need, While providing a cost and time effective supply chain solution



ARCEMY® is a metal 3D printer for medium to large-scale parts

## WAM<sup>®</sup> & ARCEMY<sup>®</sup> Benefits

Patented Wire-arc Additive Manufacturing has many benefits to large-scale and exotic material metal part manufacturers that supply to Aerospace, Defence, Energy, Maritime, and Oil & Gas industries









Can test up to **2 times higher<sup>2</sup>** than designed working load compared to traditional methods

### Stronger

Produces material properties up to **30% stronger**<sup>3</sup> than seen in traditionally cast or forged parts

## **More Resistant**

Up to **50% more** resistant<sup>4</sup> to metal fatigue for Nickel Aluminium Bronze WAM<sup>®</sup> products

## Faster

Can be manufactured up to **75% faster**<sup>5</sup> than forging or casting without tooling investments.



### **Less Waste**

Has the potential to produce up to **95% in material waste savings<sup>6</sup>** when compared to billet machining.

1 Certified through Lloyd's Register, DNV, with ISO9001:2015 QMS, AWS D.20.1 2 Learn more: https://bit.ly/3ElEaiK 3 Learn more: https://bit.ly/3iOAVn 4 AML3D internal study. 5 Learn more: https://bit.ly/3Gyhqw0 6 Learn more: https://bit.ly/3YOPCgZ

Australian Patent 2019251514. Japan Patent 7225501 // AML3D®, WAM®, WAMSoft®, ARCEMY® are all registered trademarks for AML3D Limited.

## **AML3D Certifications**

AML3D is the first Wire-arc Additive Manufacturer service provider to receive both DNV Approval for Maritime Manufacturing and Lloyd's Register Additive Manufacturing Facility Qualification



In 2022, AML3D was the first Wire Additive Manufacturer to receive Approval of Manufacturer for shipbuilding AML3D became the world's first Lloyd's Register certified Wire additive manufacturing facility in 2018

MANUFACTURING

Achieved ISO 9001:2015 Quality Management System in 2018 AWS American Welding Society

Compliant with AWS specification for fabrication of metal components using additive manufacturing

Other accreditations in progress include AS 9100D and ISO 45001



ARCEMY<sup>®</sup> printers commissioned on customer sites can be Lloyd's Register certified, ensuring products manufactured meet global standards.



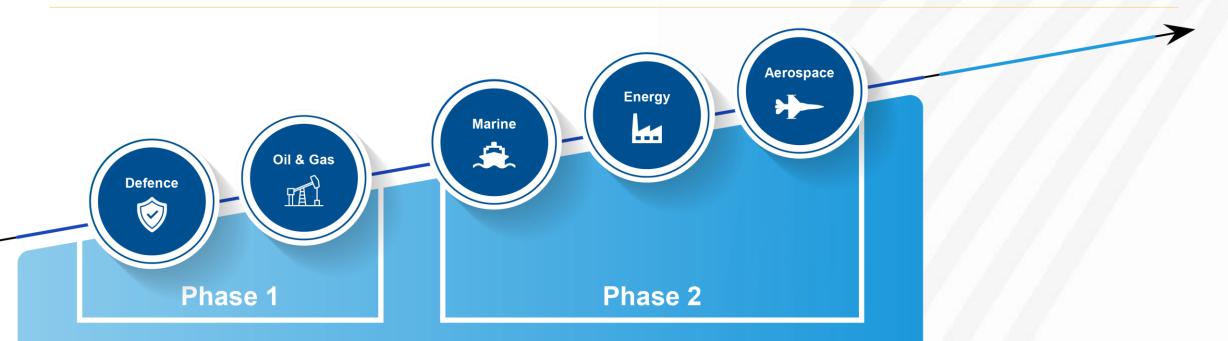
AML3D is an ABB Robotics Value Provider

# **Business Model**



## **Broad Addressable Markets with Strong Demand**

AML3D address multiple sophisticated and geographically diverse markets



- Build new, progress and continue to develop existing relationships across
  Asia Pacific and North American regions
- Progress negotiations and proof of concept prototypes to evolve ARCEMY<sup>®</sup> sales
- Deliver ARCEMY<sup>®</sup> metal 3D printing systems globally, including software licensing, support and training

Phase 1 and 2 are driven by AML3D's Australian and North American sales teams and Phillips Corp.'s US Federal and Commercial Sales divisions

## **OEM Business Model**

Product & Go-To-Market strategy to meet demand in the industrial manufacturing sector

- AML3D offers the largest commercially available open-air additive manufacturing system to the market
- AML3D partners with clients, enabling them to become globally competitive metal part producers
- ARCEMY<sup>®</sup> disrupts traditional part manufacturing, creating digital parts library's and driving Industry 4.0 capability
- Available in four key configurations, ARCEMY<sup>®</sup> supports:
  - Manufacturing diversification
  - Supply chain resilience
  - Sustainable business growth
- Includes robust annual recurring revenue with software, hardware and support services



ARCEMY® system available in four robot-sized options, ARCEMY X® shown

# **ARCEMY®** Technology Stack

Invest in software to meet client requirement for enhanced ARCEMY® platform & grow revenue

#### **WAMSoft®**

• Better useability and outcomes for larger and more complex geometries

#### **AMLSoft**<sup>™</sup>

• Develop new features & functionality for new alloys, weld parameters and operating capabilities

#### Hardware

- Customer demand signals to lead expansion on ARCEMY<sup>®</sup> system hardware requirements and repeatable outcomes
- Enable client-funded specific Research and Development programs



## **Sustainable Revenues**

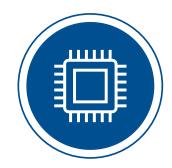
Faster path to profit with a robust annual recurring revenue program



#### **Software Licenses**

#### WAMSoft<sup>®</sup> & AMLSoft<sup>™</sup>

- Advanced Product Slicing and Path Planning System
- 3D Print Simulation Toolsets
- Operator Production User
  Interfaces
- Material Alloy Libraries



System Hardware Maintenance

- Robotics Routine Systems
  Maintenance
- 24/7 Service Level Response
- Electrical Systems Routine
  Maintenance



Technical Support and Parts Production Support

- Technical application support
- 24/7 Service Level Response available
  - Parts Production Support



Consumables

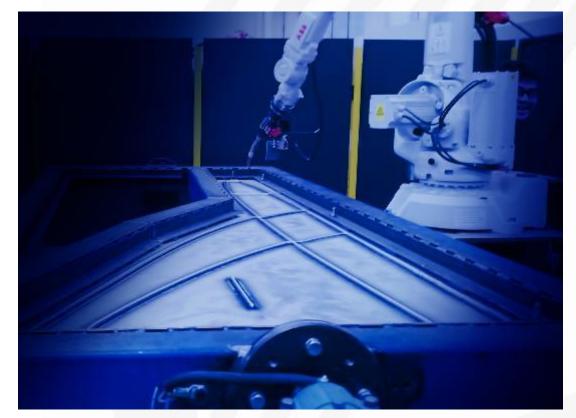
• Supply of AML3D certified wire feedstock



## **Proof of Concept Parts**

Ability to demonstrate performance of WAM<sup>®</sup> technology to potential customers or assist in facilitating small production runs remains critical

- Proof of Concept part manufacture is critical to demonstrating WAM<sup>®</sup> and ARCEMY<sup>®</sup> fit-for-purpose
- Presence of AML3D-owned ARCEMY<sup>®</sup> units in Australia and USA a critical element in demonstrating ability to produce products to customer specifications
- Ability to relocate existing Adelaide-based ARCEMY®
  units to USA for immediate capacity



# Execution of Business Plan

And in Frank



## **Unlock US Market – Expand US sales capability**

AML3D's WAM® technology positioned to access the massive & high growth US market

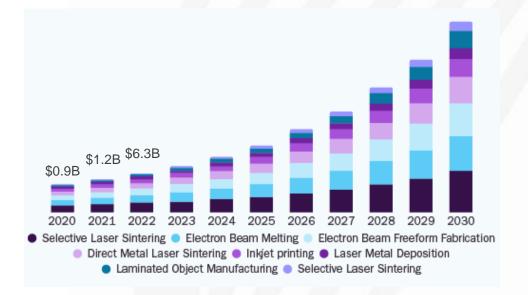
### **Direct Sales-Led Entry**

- Scale up AML3D's US sales team to include a US Sales Manager, a technical sales consultant and technical support position
- Leverage Value Added Reseller, Philips Corp's, US Defence, Federal and Commercial networks
- Identify additional distributors and value-added resellers to scale up the channel sales model for the ARCEMY<sup>®</sup> product line
- Market valued at USD\$6.3B in 2022 and projected to expand at a CAGR of 23.2% to 2030<sup>1.</sup>

1) Source: Grandview Research, Metal 3D Printing Market Size, Share & Trends Analysis Report By Component (Hardware, Software, Services), By Technology, By Software, By Application, By Vertical, By Region, And Segment Forecasts, 2022 – 2030 (https://www.grandviewresearch.com/industry-analysis/metal-3d-printing-market)

Australian Patent 2019251514, Japan Patent 7225501 // AML3D®, WAM®, WAMSoft®, ARCEMY® are all registered trademarks for AML3D Limited.

### North American Metal 3D Printing Market<sup>1</sup>



# **Unlock US Market – Strategic ARCEMY® Deployments**

Successful delivery of initial ARCEMY X contracts establish presence at key US bases servicing US Navy & Tier 1 clients

### **US Market Entry**

**ARCEMY X** Base Profile order date Largest science and energy national laboratory in Department **Oak Ridge National** Feb 2023 of Energy system and major Laboratory, TN partner to NAVSEA (US Navy), Boeing and other strategic targets Home to NAVSEA Additive Manufacturing Centre **Danville Centre of** of Excellence. Supporting the **July 2023** Submarine Industrial Base Excellence(CoE), VA adoption and training of additive technologies.

**US Additive Manufacturing Bases** 

- Two ARCEMY X systems and alloy testing ٠ contracts to support US Navy already secured
- Delivery of current US ARCEMY<sup>®</sup> orders to • establish presence in US additive manufacturing and drive demand
- Scale up sales & account management team • to develop future pipeline.
- Leverage existing ARCEMY<sup>®</sup> sales • relationships with US based Global Tier 1 clients

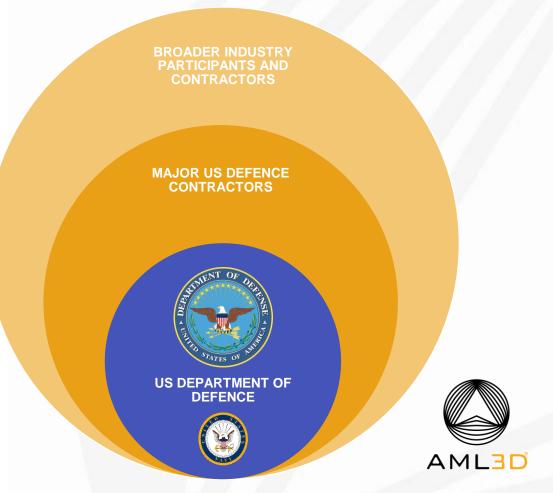
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## Focus on expanding customer network in 2023

We are the 'centre of the onion' right now

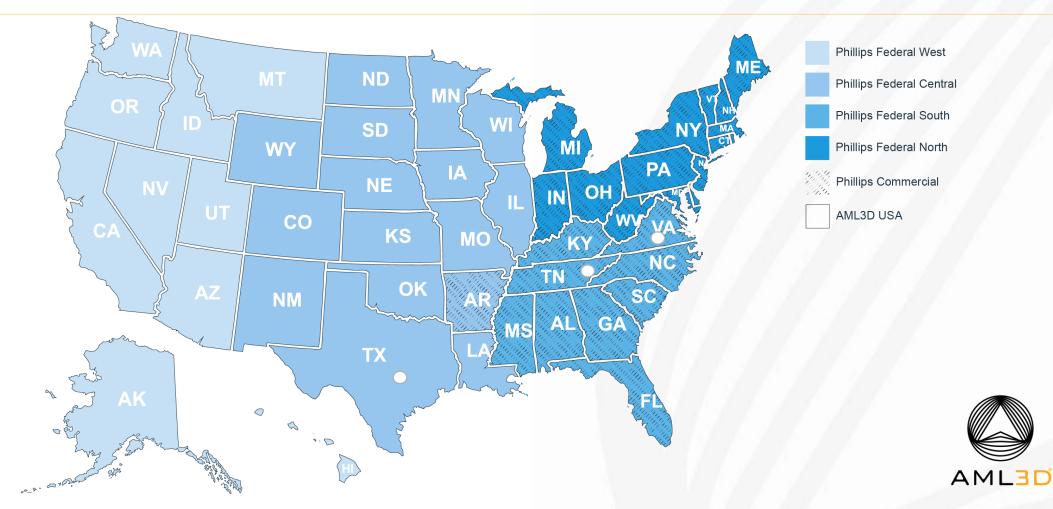
# US Department of Defence (US Navy) orders brought a spotlight to our technology

- Immediate focus on converting this opportunity into further commercial orders in defence supply chain
- Department of Defence sits at the middle of the US military-industrial complex with Tier 1 credibility boost presenting many options for AML3D
- USA based Defence Contractors are a priority target with an expectation of demand for ARCEMY<sup>®</sup> system sales
- New alliances in USA with Tier-1 groups set to drive far improved distribution and sales networks



## **AML3D USA & Phillips Corp Sales Teams**

The art of the possible with a team of 12 salespeople in North America



## **AML3D Performance Aspirations**

Success in our delivery will strengthen AML3Ds partnerships and improve software development cycles

- Successful installation of US Department of Defence ARCEMY<sup>®</sup> systems into Oakridge National Laboratory (ORNL), and Danville Centre of Excellence (CoE) facilities
- Continue to expand into US Defence and Oil & Gas via existing US based customers
- Leverage sales and distribution relationship with Phillips Corp across the US region:
  - Increase ARCEMY<sup>®</sup> sales into US Defence manufacturing supply chain
  - Supply into Phase 2 market sectors of Energy, Maritime and Aerospace
- Establish US operating base with local leadership, business development, system construction and Proof of Concept production
- Advance next release of WAMSoft<sup>®</sup> and AMLSoft<sup>™</sup> platforms to include AI driven closed loop optimisation

AMLED

Resize the Australian business operations

# Recent Updates

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## Business Update: 1 June 2023 US pipeline, Chevron Visit & Software Development

AML3D continues to build momentum in high growth US market

#### While the US Defence sector is our key focus, we continue to support our global Tier 1 Oil and Gas and Energy customers, like Chevron Australia

- Large scale ARCEMY<sup>®</sup> X system, in support of US Navy, to ship in June 2023 as AML3D delivers against OEM supplier strategy
- US Department of Defence alloy characterisation testing contract in support of US Navy submarine industrial base successfully moves into testing phase
- Chevron Australia completes site visit and extends subsea pipeline fittings contract as AML3D looks to expand OEM strategy into Oil and Gas
- Strategic investment in software suite to expand AML3D's IP, extend technology advantage and reinforce AML3D's position as a premium OEM supplier

Continuing successful delivery of these early US Defence contracts is helping to drive the rapid expansion of AML3D's US sales pipeline, with multiple additional US Defence contract negotiations now underway.

## Business Update: 23 June 2023 Enterprise ARCEMY<sup>®</sup> Sale Advances AML3D Growth Strategy

AML3D is playing a critical role in upskilling Australia's defence manufacturing capabilities

Curtin University purchases A\$1 million enterprise-level ARCEMY® system to expand its additive manufacturing teaching and research capability

- This ARCEMY<sup>®</sup> system will complement existing small-scale R&D capabilities in Curtin's new Additive Manufacturing Microfactory Facility
- The sale supports the growth of advanced 3D wire additive manufacturing at leading educational and research institutions, which will play a critical role in upskilling Australia's defence manufacturing capabilities
- Sale aligns with AML3D's strategy to focus as a supplier, to industrial manufactures, of advanced ARCEMY<sup>®</sup> systems for defence, maritime and oil & gas
- AML3D to utilise the new ARCEMY<sup>®</sup> system at Curtin as a demonstration facility for existing and potential customers

The Curtin Microfactory will act as a satellite R&D platform for AML3D to demonstrate ARCEMY® 's capabilities to potential customers across WA's Mining, Agriculture, Oil & Gas and Defence Maritime industries.

## Business Update: 20 July 2023 ARCEMY<sup>®</sup> Ordered for the US Navy's Centre of Excellence

AML3D's ARCEMY® is contributing to creating a resilient, competitive, and sustainable supply chain

#### **ARCEMY® 'X-EDITION 6700' ordered for the US NAVY's Centre of Excellence**

- AUD\$1.1 million<sup>1</sup> order for an ARCEMY<sup>®</sup> 'X-Edition 6700', received from AML3D's value added reseller, Phillips Corporation
- This order for a second ARCEMY<sup>®</sup> X, for use by the US Navy, follows the supply of an ARCEMY<sup>®</sup> X in February 2023 to accelerate use of advanced additive manufacturing technologies across the US defence industrial base
- The deal demonstrates continuing success of AML3D's strategy to focus on ARCEMY<sup>®</sup> systems sales to the US maritime and defence sectors
- Sale further strengthens the US Navy's on-demand manufacturing capabilities and demonstrates their confidence in AML3D's technology
- The US Navy's Additive Manufacturing Centre of Excellence is working to rapidly adopt advanced manufacturing technologies to drive innovation and competitiveness within a sovereign defence and submarine industrial base.

Phillips Corporation are sourcing the ARCEMY<sup>®</sup> X to contribute to the establishment of a US Navy supply chain and industrial base that is resilient, competitive, and sustainable.





# Thank you

# ARC EMY

