



Manufacturing innovation made reality

# **The Supersonic Opportunity Additive Manufacturing Company**

June 2023



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# What is the vision for Titomic?

To provide cutting edge capability for production and protection of parts with high-performance materials, at speed and scale.



Shortened supply chains  
*Manufacture on demand from powder*



Lower cost to manufacture  
*Manufacture to near net shape*



Increased sustainability  
*Repair rather than replace*



Increased up time  
*Immediate impact on bottom line*



# What problem is being solved?

Titomic shortens supply chains, reduces costs, and increases sustainability and up time

## What are the problems?

### Supply Chain

*Disruptions due to ongoing and possible conflicts*

### Costs

*Rising material and manufacturing prices*

### Sustainability

*Easier to replace than to repair*

### Up Time

*Increases lead to stronger earnings*

## Which sectors are targeted?

Defence & Aerospace

Manufacturing

Resources

## How does Titomic provide solutions?

Additive  
Manufacturing

Cold Spray Coatings  
& Repairs



# Titomic targets large, fast growing markets

## Burgeoning markets

### Defence & Aerospace

2022: \$1,076b  
5.9% CAGR to 2027<sup>1</sup>

### Manufacturing – Glass Packaging

2021: \$75b<sup>6</sup>  
4.4% CAGR to 2028<sup>2</sup>

### Resources - Oil & Gas Infrastructure

2021: \$620b  
6% CAGR to 2030<sup>3</sup>

## Demand for Titomic solutions growing exponentially

### Additive Manufacturing

2020: \$12.8b  
25% CAGR to 2027<sup>4</sup>

### Cold Spray Coatings & Repairs

2022: \$1b  
6.4% CAGR to 2030<sup>5</sup>

1. <https://www.thebusinessresearchcompany.com/report/aerospace-defense-global-market-report>

2. <https://www.mordorintelligence.com/industry-reports/global-glass-bottles-containers-market-industry>

3. <https://www.gminsights.com/industry-analysis/oil-and-gas-infrastructure-market>

4. Wohlers Report 2020

5. GrandView Research, Cold Spray Technology Market Analysis 2023

6. Mattingly Consulting, 2023



# Leadership with proven industry experience

A combined 165 years of cold spray experience across the staff and board

## Board of Directors



**Humphrey Nolan**

Non-Executive Chairman



**Mira Ricardel**

Non-Executive Director



**Andreas Schwer**

Non-Executive Director



**Dag Stromme**

Non-Executive Director



**Richard Willson**

Non-Executive Director

## Leadership Team



**Herbert Koeck**

Managing Director



**Jon Nield**

Chief Financial Officer



**Chris Healy**

Legal Counsel  
Company Secretary



**Dominic Parsonson**

Head of Sales & Marketing



**Neil Matthews**

Senior Technical Fellow



**Michael Rochford**

General Manager Australia



**Klaas Rozema**

General Manager Europe



**Bruce Colter**

General Manager USA



**Beau Lang**

Business Operations



# Titomic Machine/Solutions Portfolio



### TKF 9000 (Custom)

- High pressure Cold Spray additive manufacturing and coating
- Demonstration of Titomic's ability to engineer and construct bespoke AM systems
- Build volume of 40.5m<sup>3</sup>
- Deployed in the Titomic Melbourne Bureau



### TKF 1000

- High pressure Cold Spray additive manufacturing and coating
- Designed for prototyping and low volume production tasks
- Build volume of 0.75m<sup>3</sup>
- 1<sup>st</sup> gen system operating at Titomic Melbourne Bureau
- 2<sup>nd</sup> gen system installed at TWI (UK)



### ISB Series

- Low or medium pressure Cold Spray coating
- Robotic or linear coating system
- Automated loading and unloading of parts
- Utilises D523 or D623 core cold spray system
- Ideal for R&D deployment or as a base for customised automated coating systems



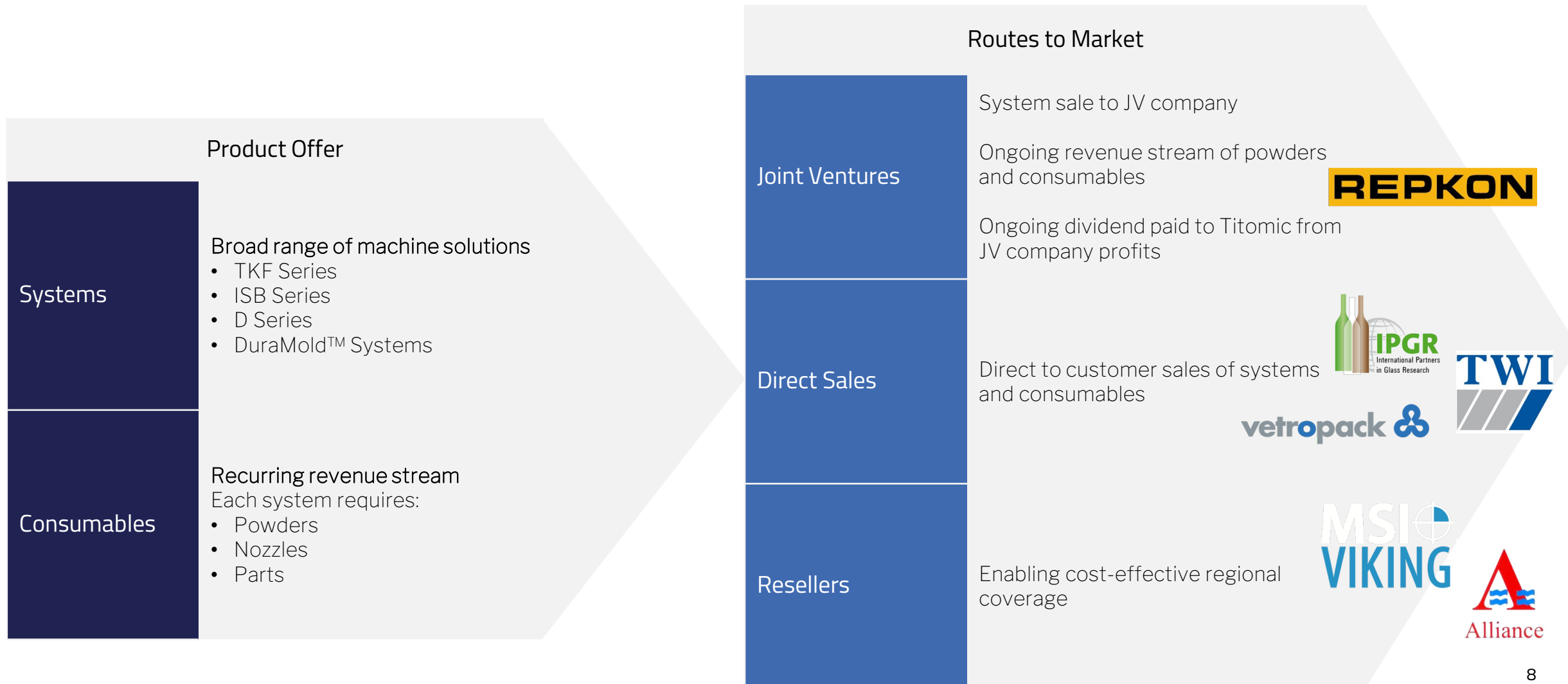
### D523 & D623

- Low and medium pressure Cold Spray coatings
- Modular portable repair system
- Designed for robotic or manual repair and coatings
- Deployable for in-field repairs



# What do we sell and how do we sell it?

Systems and consumables, with multiple routes to market

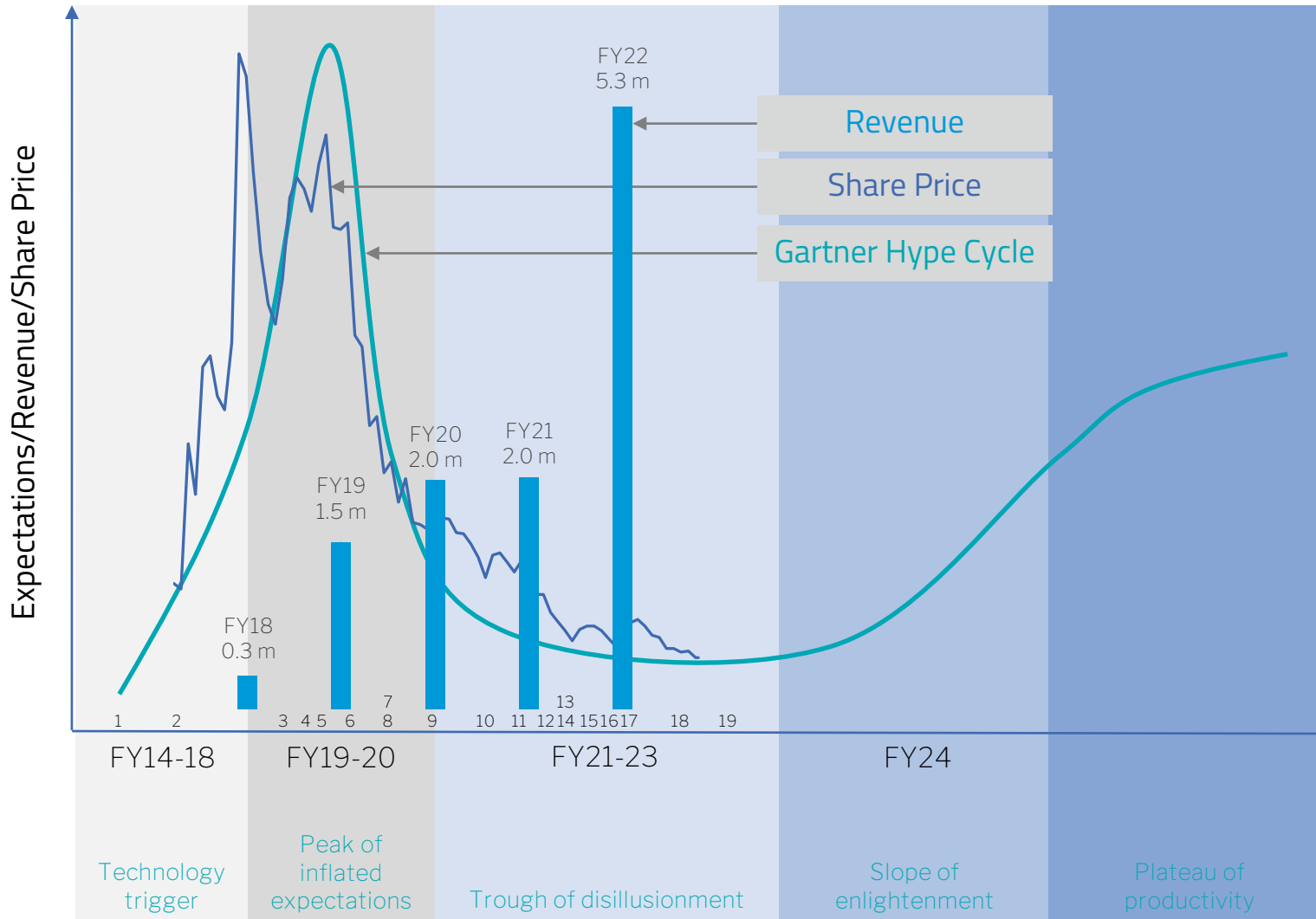






# Where are we on the journey?

Completed development and moving to commercialisation



## Significant Events

- |  |              |
|--|--------------|
| 1. CSIRO development                             | 2014 to 2017 |
| 2. \$6.5m IPO                                    | Sep 17       |
| 3. TAUUV MoU                                     | Oct 18       |
| 4. \$12m Cap Raise                               | Apr 19       |
| 5. Further patents licensed                      | Feb 19       |
| 6. \$7m Cap Raise                                | Jul 19       |
| 7. Composite tech deal                           | Feb 20       |
| 8. \$19m Cap raise                               | Feb 20       |
| 9. Board changes                                 | Jun 20       |
| 10. Management changes                           | Dec 20       |
| 11. Herbert appointed CEO                        | May 21       |
| 12. Tri-D Acquisition                            | Jul 21       |
| 13. TWI TKF 1000 sale                            | Aug 21       |
| 14. Space Grant                                  | Aug 21       |
| 15. \$11m Cap Raise                              | Oct 21       |
| 16. Dycomet Acquisition                          | Dec 21       |
| 17. Neos & Repkon JV signed                      | Jun 22       |
| 18. \$5.1m Cap Raise                             | Dec 22       |
| 19. Vetropack Installed                          | Mar 23       |
| 20. Boeing purchase order                        | Mar 23       |
| 21. Triton purchase order                        | Mar 23       |
| 22. Anywise 3 <sup>rd</sup> reseller added in US | May 23       |



# What progress has been made?

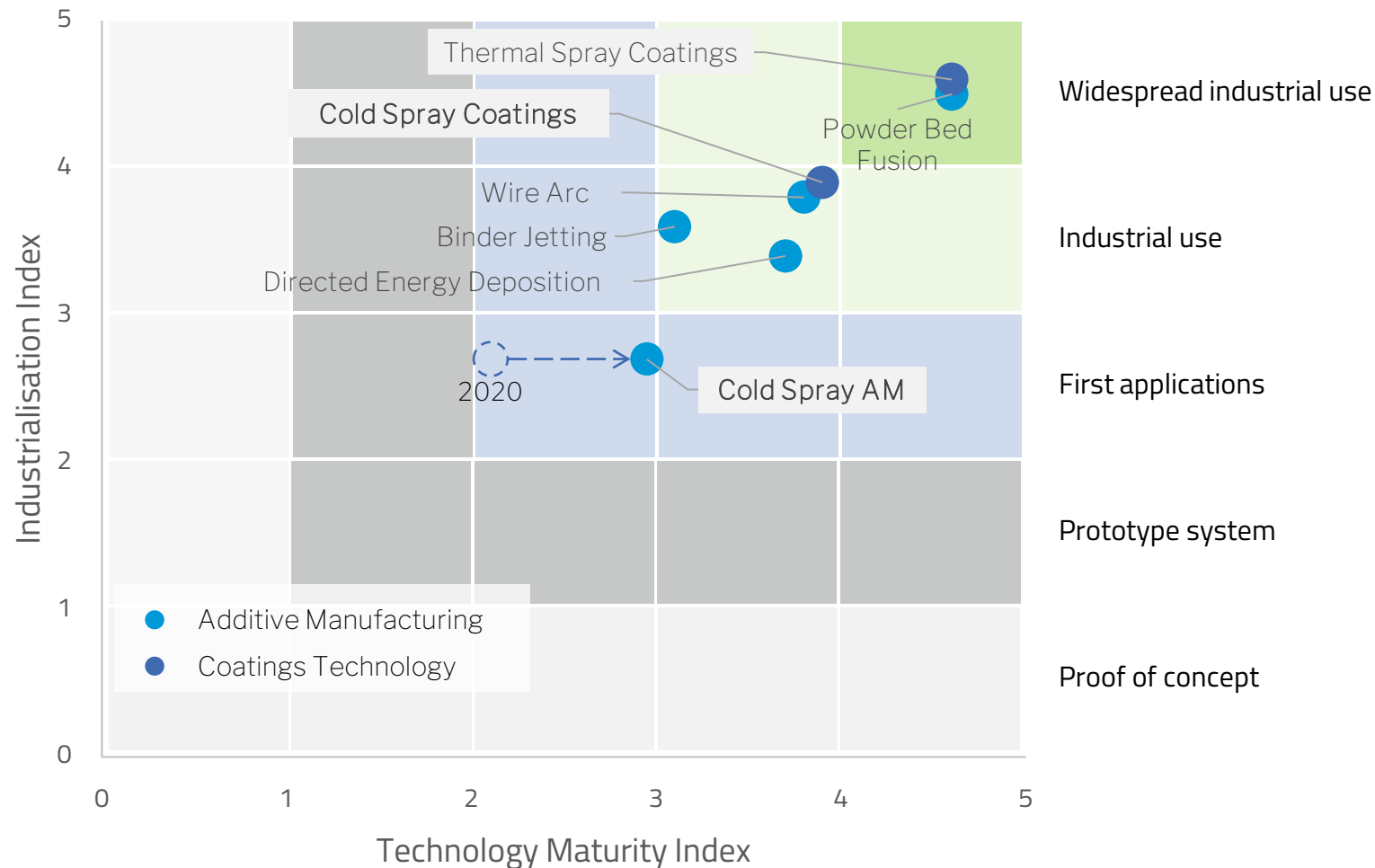
Performance to plan with progress across focus applications

Category	Application	FY23	FY2024	FY2025	FY2026	FY2027	FY2027
Aerospace & Defence	Armaments	JV with Repkon signed ✓ Production in Australia Delivery of custom system - TKF3250R Production in JV New product lines added					
	Ballistics	Testing to STANAG Lvl 2 ✓ Engagement with industry partner Route to market identified					
	Radiation Shielding	Demonstrations with space grant ✓ Engagement with Fleetspace Launch on Fleetspace vehicle					
	Structures	Demonstration of titanium structures ✓ Engagement with aerospace prime for flight qualifications ✓ Ongoing manufacturing of structures					
	Tooling	Engagement with companies for JVs ✓ Ongoing production of Tooling faceplates in JV					
Manufacturing	Wear Resistance	Glass Solution installed at Vetropack ✓ Business case developed ✓ Sales to other glass packaging companies					
	Repairs & Corrosion	Validation of repairs for rail application Repairs of automotive casting tools					
Resources	Energy	D523 validated for Wind Energy Repairs ✓ System installed in Alaska ✓					
	Mining and Oil & Gas	Approved supplier for Diesel Engine Repair ✓ Multiple D523's in market ✓					



# How mature is Cold Spray?

Coatings in industrial use and AM on the cusp



Cold Spray continues to mature towards widespread industrial use in Additive Manufacturing

In coatings & repairs, Cold Spray is already in industrial use, with room for growth to rival other thermal spray processes



# Our rapidly growing trusted global customer base





# Wear Resistance

Titomic maximising uptime

## Value Proposition

- Extending the life of equipment
- Restoring damaged parts to original
- Replacing worn-out or corroded metal parts
- Portable in-field repairs in compact areas

## Progress

- Installation of first automated commercial production machine
- Extending material portfolio to expand applications to adjacent use cases
- Engagement of more customers globally

## Market

- Glass packaging industry worth \$75b growing at CAGR 4.4%
- Revenue will flow from sales of powder, nozzles, consumables and servicing



## Glass Equipment Coatings

Targeting glass manufacturing industries



Manufacturing  
made sustainable

# Structures

For lighter stronger titanium components

## Value proposition

- Affordable titanium structures
- Near-net shape manufacturing
- Low-cost HDH titanium powder
- Melt-free manufacturing process
- Energy, emissions & environmental benefits

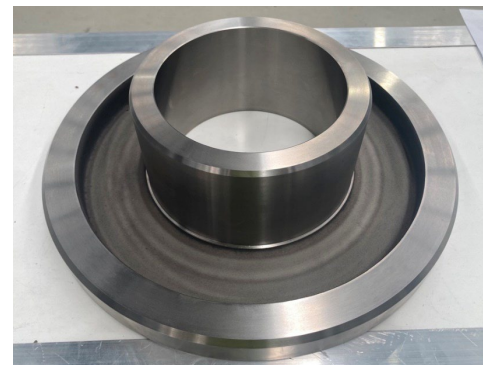
## Progress

- Material optimisation completed for CP Titanium
- Engineering projects underway for technical and manufacturing processes
- High value-added applications identified
- Samples with major customer for application approval

## Market

- High end steel manufacturing
- Existing Titanium manufacturing

Titanium Ring Partially machined



Titanium Ring 1.4m diameter



Seamless Titanium Tank



## Structures

Exploiting Titomic's technology and cost benefits for lightweight, rapidly manufactured solutions



# Armaments

Titomic enabling high performance barrels

## Value Proposition

- Unique manufacturing solution for high performance barrels
- The process combines the TKF system and Repkon's patented free flowforming technology
- Enabling better material selection for:
  - Improved erosion and corrosion resistance
  - Improved strength to weight ratios
  - Higher velocity rounds



Repkon's flowforming technology



## Progress

- Repkon JV signed
  - Demonstrator barrels supplied
  - Qualification of demonstrators underway
  - Machine 1 design completed
  - Machine 2 design in progress
- Further JVs to be explored globally

## Market

- Revenue will be in the JVs (equity accounted)
  - Likely to commence from late 2023
- Revenues of up to \$50 - 55m to FY27

Barrels

Targeting the Defence Industry



# Tooling

Titomic enabling a simplified supply chain

## Value Proposition

Offers numerous benefits for our partners and customers

- Improved lead times
- Near net shape – Minimal post-production and machining
- TKF process makes Titanium tooling a viable option (stronger, thinner, lighter, corrosion resistant)
- Reduced welding, assembly and lead times
- Multi-material solutions, for improved heat distribution
- Ability for embedded sensors, heating and cooling

## Progress

- Neos JV agreement signed
  - Demonstrator faceplates supplied
- Machine design completed and quotation submitted
- Further JVs being explored globally (4 additional players already in pipeline)

## Market

- Revenue will be in the JVs (equity accounted)
  - Likely to commence from mid 2023
- Revenues of up to \$55-65m to FY27



Invar Face Plates



Invar Repair



Titanium Tooling

Tooling

Targeting the Aerospace & Defence Industries





# Coating & Repair

Titomic extending asset life

## Value Proposition

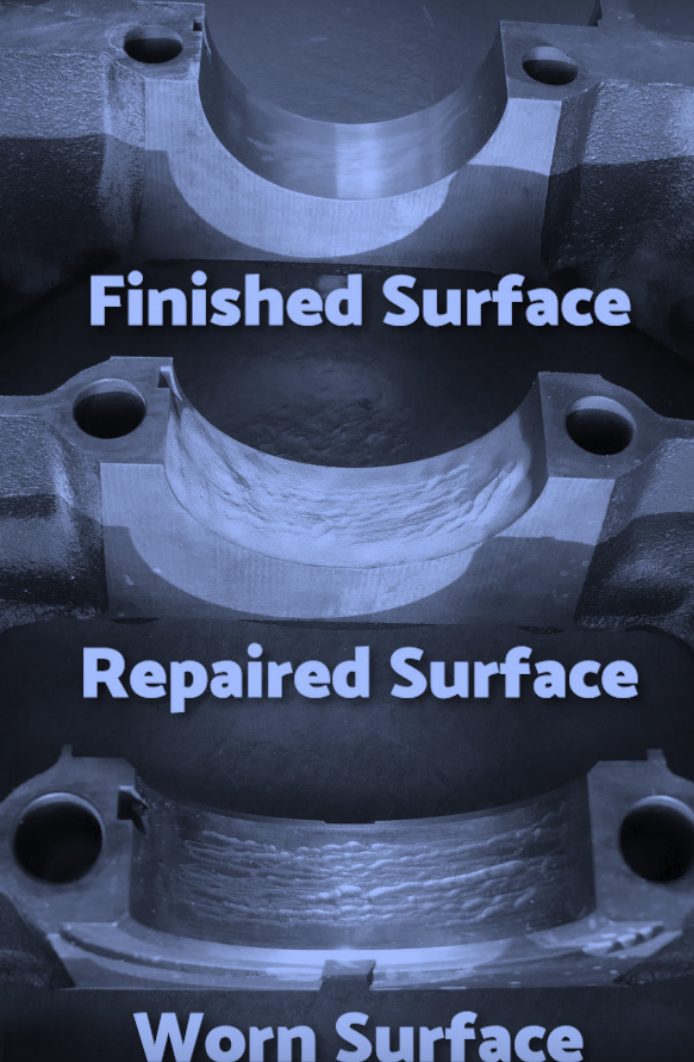
- Unique material solutions for repair
- Ability to restore geometries
- Repair in-situ
- Cold solid state repair process – no hot work
- Increase of functionality

## Progress

- Proven process and materials
- Mature solutions platform
- Global sales network with off-the-shelf solution
  - Growing quickly with resellers added regularly

## Market

- Corrosion costs the global economy up to an estimated \$2.5 trillion annually
- The cost of corrosion remediation in Australia is estimated at \$78b annually



## Coating and Repair

Targeting Mining, Oil & Gas, Transport and Marine Industries



# Unlocking unprecedented potential

## Large & expanding market

- Strong tailwind with additive manufacturing market set to **grow by 29% to 2025<sup>1</sup>**
- Buoyed by rapid prototyping, faster turnaround, less waste and lower emissions<sup>2</sup>
- Reduced costs and risks **fuelling fourth industrial revolution**

## Global foothold

- Transitioning to formal **joint venture partnerships** with shared risks and rewards
- **Set to scale globally** across aerospace, defence and other high-value markets
- Expansion underway with signed agreements in the US, Europe, Middle East and Australia

## Unparalleled expertise

- New board of directors and management team with **strong industry, government and capital markets experience**
- **Deep scientific pedigree** including Technical Advisory Committee with **world-renowned scientists**

## Proven process & industry leading technology platform

- **Pioneering patented technology** co-developed with the CSIRO, Australia's national science agency
- Strong cost advantage within Titanium alloys with patent protection
- **Overcomes challenges** like long lead times, limited scalability and excess waste seen in traditional manufacturing

## Compelling business model with attractive financial business profile

- Partnership manufacturing model with clients to deliver attractive unit economics with added benefit of sale of consumables and services
- Unique powder supply to reduce risk as well as cost of titanium parts while **boosting performance**
- **Operating leverage** will drive profitability

<sup>1</sup> AMPower Report 2021

<sup>2</sup> CSIRO study of Cold Spray vs Electroplating





## Titomic – Head Office

Ground Floor, 365 Ferntree Gully Road  
Mount Waverley, VIC 3149 Australia

## Titomic USA

980 S. Amphlett Blvd.  
San Mateo, California, 94402 USA

## Titomic Europe

It Vegelinskampke 9a  
8491 PD Akkrum, The Netherlands

[info@titomic.com](mailto:info@titomic.com) | [titomic.com](https://titomic.com)