



Investor Presentation

October 2016

David Marino, CEO & Managing Director
Quickstep Holdings Limited (ASX:QHL)

AEROSPACE
AUTOMOTIVE



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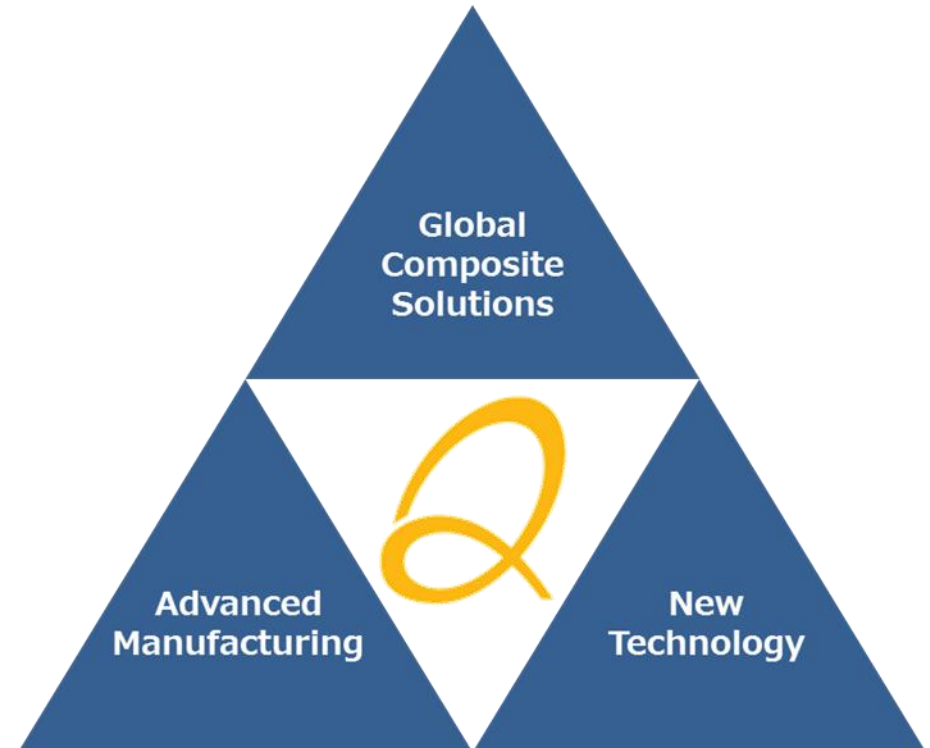
Quickstep is well positioned to become a **global leader in composite manufacturing solutions** through:

» **Aerospace Manufacturing**

- Manufacturer of composite components & complex assemblies, utilising Advanced Manufacturing processes
- Largest independent Carbon Fibre Components Manufacturer in Australia

» **New Innovative Technology**

- Global provider of parts using disruptive patented manufacturing technologies, lowering the cost of traditional composite parts production
- Structural or Class-A components for the Automotive, Transport, Aerospace, Defence & Marine sectors



Leading global innovator & provider of advanced composites manufacturing solutions

- » Advanced composites manufacturing
- » Production processes & systems
- » Manufacturing process equipment
- » Materials development

Headquarters in Australia, with manufacturing & development in NSW, Victoria and Germany

- » Largest independent, aerospace-grade composites manufacturer in Australia
- » Traditional Autoclave & leading edge Out-of-Autoclave production technologies
- » Partnering with some of the world's largest aerospace / defence organisations

Growing outside Aerospace & Defence industries, into Automotive, Marine and other Transport sectors

- » Well positioned to become a global leader in composite manufacturing solutions

Leading innovator of advanced manufacturing process technologies, with patents in place

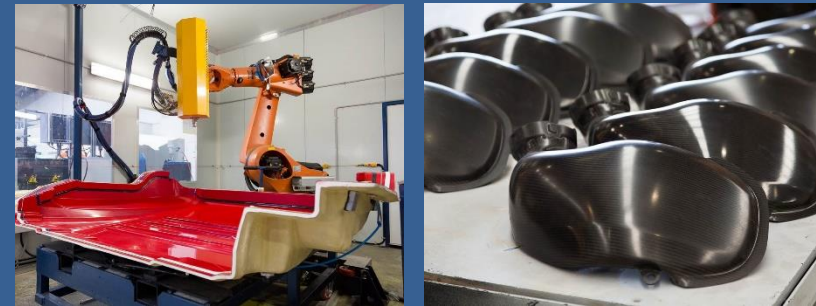


Aerospace Manufacturing

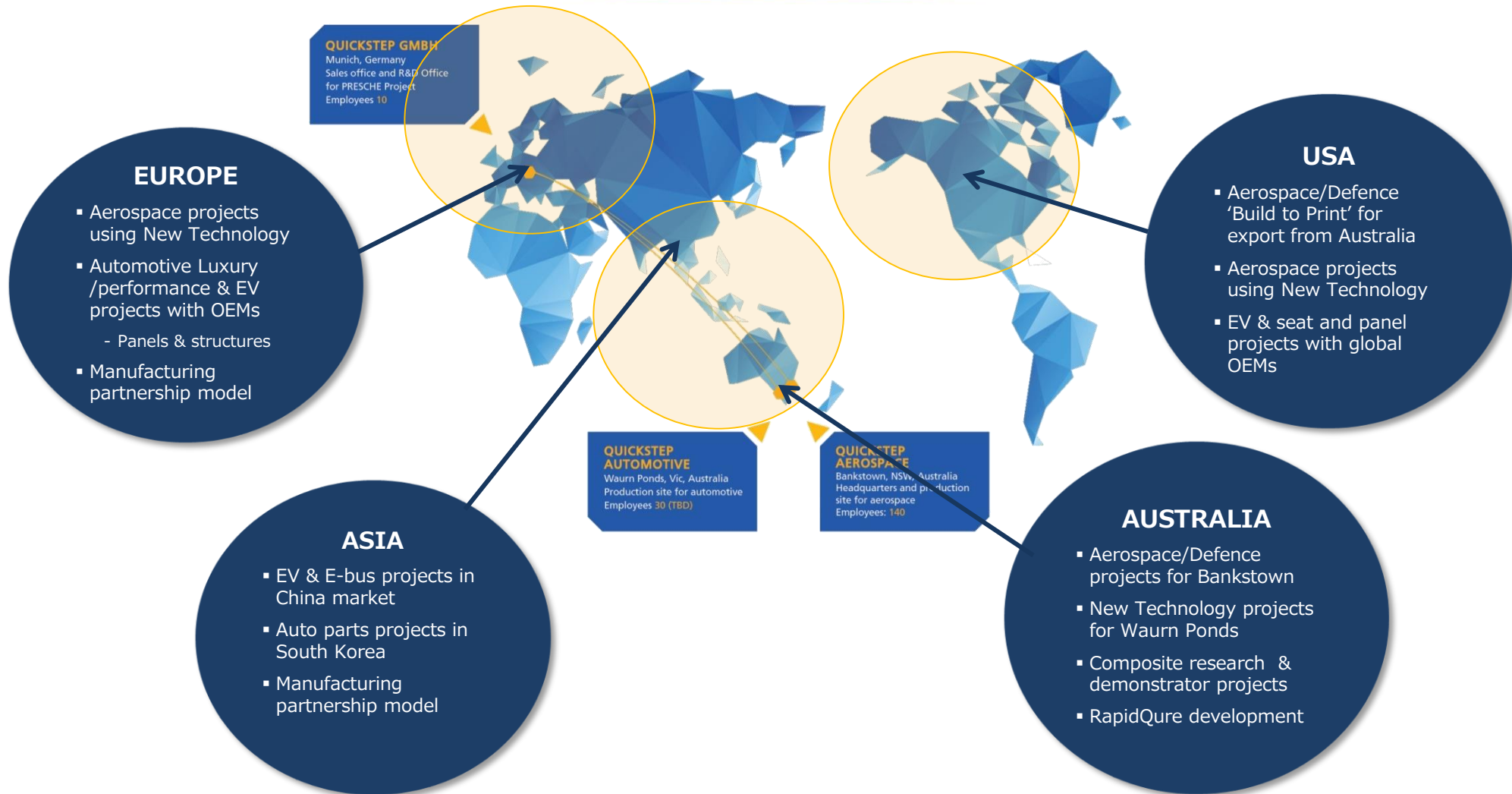


- » Advanced manufacturing of composite components & complex assemblies
- » AS9100 certification, NADCAP accreditation
- » Competitively awarded-global parts contracts for Joint Strike Fighter(JSF) & C-130J aircraft
- » All facets of aerospace & defence manufacturing with growth opportunities
- » Strong forward order book; capacity for growth

New Technology



- » Resin Spray Transfer (RST) for cost effective combining of dry fibre & resin to reduce cost
- » Qure – Out Of Autoclave (OOA) Curing solution
- » Reduces processing time & investment costs
- » Delivers high quality components, core structural parts/assemblies
- » Parts manufacturing contracts already secured
- » RapidQure – Next generation of development



Quickstep has various levels of activities in each of its target markets

FY16 Full Year Results

Record sales of A\$50.1 million in FY16, up 27% y.o.y., driven by Aerospace Manufacturing

EBIT pre R&D & significant items of A\$4.0 million

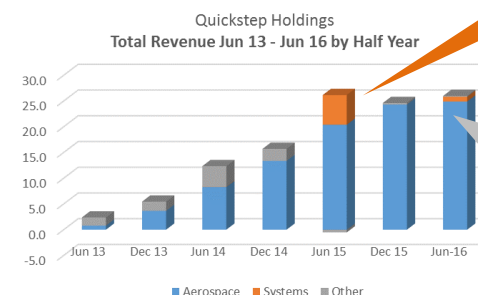
» Aerospace Manufacturing continuing to drive sales revenue growth & EBIT

- 35 ship-sets to Lockheed Martin for C-130J
- 590 JSF parts delivered to Northrop Grumman & BAE Systems
- Aerospace manufacturing FY16 sales A\$49.2m, an increase of 46% versus FY15
- Aerospace Manufacturing gross profit increase of 49% versus FY15

» Strong progress in New Technology development

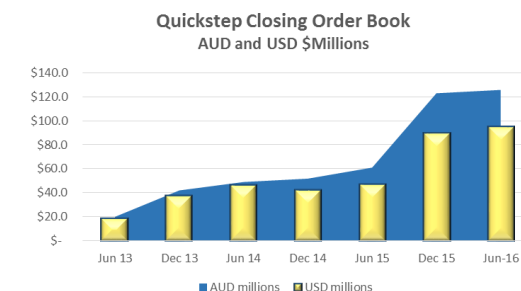
- R&D investment boosted to A\$3.5m, up from A\$2.1m
- Ford carbon fibre air intake duct program commenced
- First Hawkei body panels supplied to Thales
- Development project commenced on Light Aircraft parts
- MoU signed with DCNS for defence marine parts
- Several development projects commenced

» Closing order book 30 June 2016 in excess of A\$125 million



Orpe System sale
H2 FY15

Grant revenue
decreased &
sales of
aerospace
parts
increasing



FY16 Financial Performance



AUD millions	FY16	FY15	\$ Var	% Change
Revenue	\$50.1	\$39.5	\$10.6	27%
Gross Profit	\$10.4	\$7.0	\$3.5	50%
Earnings before R&D expenditure, interest, tax and significant items	\$4.0	\$1.3	\$2.7	200%
R&D/New Technology costs	\$(3.5)	\$(2.1)	\$(1.4)	70%
EBIT pre Significant Items	\$0.5	\$(0.7)	\$1.2	up
Net financing Costs	\$(2.1)	\$(3.2)	\$1.1	-35%
Significant Items	\$(4.2)	\$0.0	\$(4.2)	n/a
Net Loss after tax	\$(5.8)	\$(3.9)	\$(1.8)	-47%

Total revenue growth of 27% was driven by Aerospace Manufacturing with capital projects continuing to provide further capacity and efficiencies.

Gross Profit growth doubled the pace of revenue, growing by 50%.

R&D and New Technology spend was boosted by \$1.4m to move from pure R&D to product development and commercialisation of Qure and RST.

The Aerospace Manufacturing business is profitable with continuing investment in R&D and New Technology.

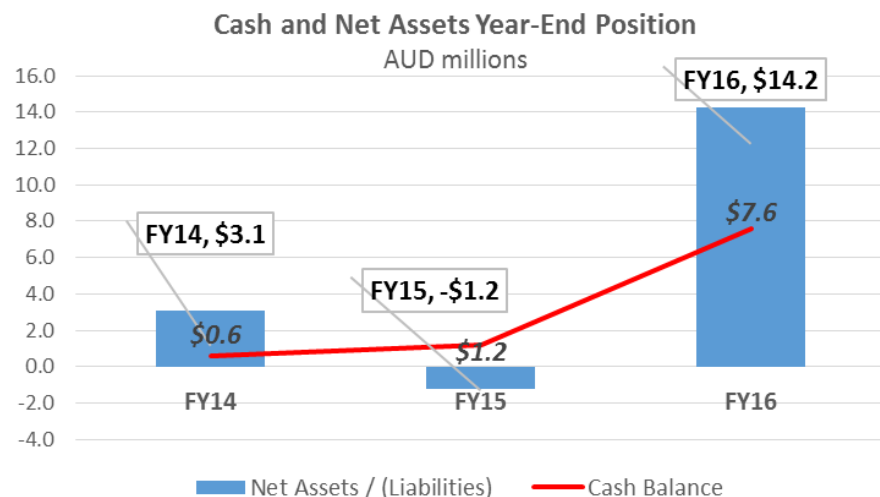
Significant items of \$4.2m were recognised in FY16 for Vertical Tail start-up, restructuring of the management team, German indirect taxes and financing costs.

Net assets finished FY16 at \$14.2 million, a strong position post the FY16 capital raise, with closing cash of \$7.6 million.

Capital raise net funds of \$20.9 million were used to pay down short-term debt, fund R&D, provide capital investment and fund working capital for Aerospace Manufacturing's growth.

FY16 cash was impacted by an increase in inventory of \$5.9 million from FY15. This inventory increase was due to Aerospace manufacturing sales growth (\$3.0m), KIST project (\$0.7m) and safety stock held during the implementation of capital relating to capital projects at Bankstown (\$2.0m).

Cash is expected close higher than June 2016 with inventory expected to reduce by \$1m in Q1 and a further \$1m in Q2 FY17.



Aerospace Manufacturing

<i>AUD millions</i>	FY16	FY15
Revenue	\$49.2	\$33.8
Other Income	\$0.3	\$0.0
EBIT pre Significant Items	\$5.3	\$(0.4)
Segment Profit/(Loss)	\$1.5	\$(3.6)
Net Assets	\$14.4	\$(2.1)

- » Revenue increased by 46% with 590 JSF parts (prior year 466) and 35 C-130 shipsets (prior year 31).
- » VT qualification completed, with 20 parts delivered in FY16 and learning curve costs of \$0.6m incurred.
- » EBIT pre Significant Items of \$5.3 million (11% to revenue).
- » Capital investment undertaken to increase production capacity to more than 100 JSF parts per month.
- » Inventory build of \$5m to support growth and safety stock for capex, with a \$2 million reduction expected by December 2016.
- » **Profitable segment with booked and additional growth opportunities to further improve profitability.**

New Technology

<i>AUD millions</i>	FY16	FY15
Revenue	\$0.9	\$5.8
Other Income	\$0.1	\$1.8
EBIT pre Significant Items	\$(4.8)	\$(0.3)
Segment Profit/(Loss)	\$(7.3)	\$(0.3)
Net Assets	\$(0.2)	\$0.9

- » Income in FY15 related to the Orpe system sale.
- » FY16 revenue related to Ford project, initial Thales Hawkei production and the final 5% of Orpe.
- » The new R&D and manufacturing facility was set up at Waurn Ponds.
- » Other Income reduced. \$1.8m was received as cash in the prior year relating to R&D tax incentives, however this is no longer available as a cash benefit as total Group sales are above \$20m.
- » **Facilities, teams and resources in place to deliver New Technology product strategy**

Aerospace Manufacturing

- » Deliver sales revenue in the order of \$48.8M ✓ \$50.1m in FY16 versus \$39.5m in FY15
- » Install additional capital to support customer volume increases ✓ \$3M capital installed at Bankstown in FY16
- » Delivered all customer orders on time & to required quality ✓ Accepted awaiting final shipment
- » Secure new contracts for aerospace/defence production parts ✗ Under development – Long lead timing

New Technology

- » Establish production-ready manufacturing operation in Waurin Ponds ✓ Established & now operational
- » Commence first production Automotive contract with Ford ✓ Production commenced in Feb '16
- » Supply Thales with 10 sets of prototype parts for Hawkei program ✓ 10 sets supplied by Aug '16
- » Quote a number of niche programs for supply in Australia ✓ Several development projects underway
- » Identified opportunities for composite supply internationally ✓ KIST project; DCNS MoU; Other markets
- » Establish the Global R&D & Technical Centre at Deakin's campus ✓ Established in Nov '15 & fully staffed
- » Commence development of RapidQure for higher volume production ✓ Commenced - first stage KIST Jan 17

- » Newly formed strong & experienced management team, with extensive aerospace & automotive manufacturing experience
- » Significant experience in technology deployment, establishing & running manufacturing facilities in Australia & globally

David Marino
Managing Director & CEO

- » Joined Quickstep in Feb 2015 as CEO
- » Previously COO Futuris Automotive; led team of 1,600; responsible for businesses in Australia, Thailand, China, USA



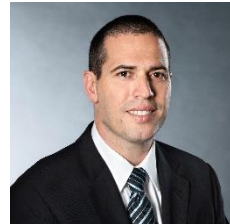
Andrew Crane
Chief Financial Officer

- » Joined Quickstep in September 2015
- » Previously GM, Finance & Commercial for GWA & CFO for SCA Hygiene Aust



Kevin Boyle
Chief Operating Officer

- » Extensive experience in the automotive sector in Australia & overseas
- » Responsible for development & performance of all Quickstep operations



Jacque Courtney-Pittman
Executive General Manager - HR

- » Experienced professional, joined in 2016
- » Has held a number of senior & executive roles in both listed & private companies



Carl De Koning
Executive General Manager, BD (Auto) & External Relations

- » Joined Quickstep in 2016, after 35 years in automotive sector
- » Previously with Futuris Automotive



Tim Olding
Vice President – Systems

- » Appointed in February 2015; 25 years' automotive industry experience
- » 19 years at GM, culminating as Managing Engineer of Advanced Vehicle Development



Michael Hau
Director, European Operations

- » Joined Quickstep in 2016, focused on business growth in the European markets
- » Previous aerospace & materials experience



Michael Schramko
Vice President – Operations

- » Joined Quickstep in 2011 as Vice President, Manufacturing & Operations
- » Aerospace experience includes Airbus (UK); Hawker De Havilland & Boeing



John Johnson
Vice President - Commercial

- » Joined in 2009, responsible for all commercial & administration activities
- » Extensive aerospace & defence experience with Boeing, ASTA & BAE



Aerospace Manufacturing – Status and Future Strategy

» **Global aerospace composites market is valued at US\$9.95bn in 2016 growing to US\$19.13bn in 2026 at CAGR of 6.8%**

» **Aerospace composites market is segmented into four major sub-sectors**

- Carbon Fibre Reinforced Polymers (CFRP)
- Glass Fibre Reinforced Polymers (GFRP)
- Aramid Fibres Reinforced Polymers
- Ceramic Matrix Composites (CMC)

» **CFRP is the largest sub-sector in aerospace, worth US\$5.46bn in 2016 growing to US\$11.41bn in 2026 at CAGR of 7.6%**

» **CFRP has become the composite of choice in the aerospace sector**

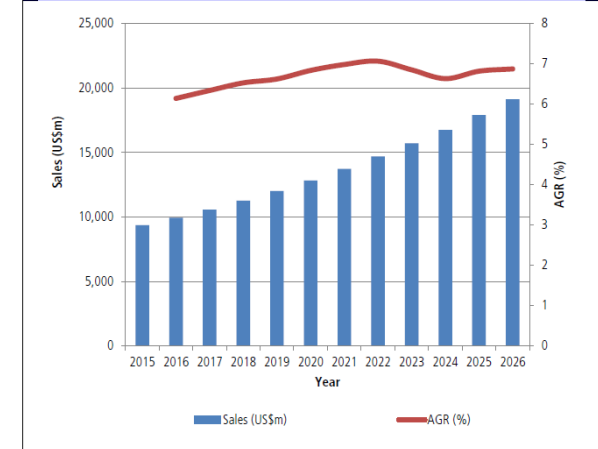
- Traditionally used in wings & tails sections of aircraft
- Now extending to other structures & components

» **Aerospace market is made up of four aircraft sectors using CFRP, with commercial being the largest**

Commercial – US\$3.46bn in 2016 growing to US\$7.81bn by 2026
 Military – US\$0.91bn in 2016 growing to US\$1.83bn by 2026
 GA – US\$0.56bn in 2016 growing to US\$0.92bn by 2026
 Helicopter – US\$0.52bn in 2016 growing to US\$0.85bn by 2026

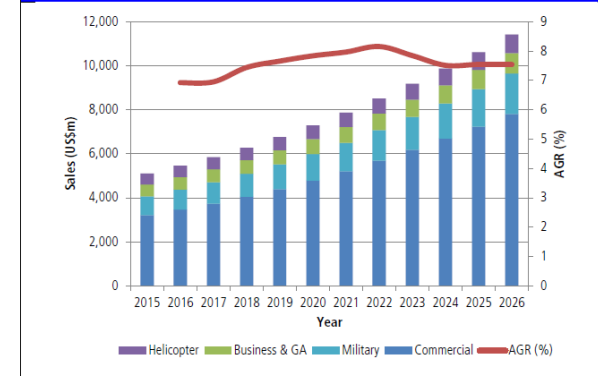
Source: visiongain 2016

Figure 3.1 Global Aerospace Composites Market Forecast 2016-2026 (US\$m, AGR %)



Source: visiongain 2016

Figure 4.13 Global Aerospace Composites Carbon Fibre Reinforced Polymer Submarket by Aircraft Platform 2016-2026 (US\$m, Global AGR %)



Source: visiongain 2016

JSF F-35 Lightning II Program

- » Quickstep is a significant composites supplier to the estimated US\$382 Billion JSF Program
- » Northrop Grumman – (A\$700m sales over program life)
 - Doors & panels
 - Lower side skins
 - Maintenance access panels
 - Fuel tank cover
 - Lower skin
- » BAE Systems (A\$139m sales over program Life)
 - Vertical Tail Spars
 - Skins
 - Fairings
- » Components are supplied from Bankstown, Australia to all JSF aircraft globally



Lockheed Martin C-130J Contract

- » Quickstep selected to manufacture wing flaps for C-130J military transport aircraft in 2012. Won this contract against global competition
- » First delivery made in December 2013
- » Overall agreement valued at US\$75-\$100m to Quickstep over five years at a rate of 2 ship sets a month
- » Additional requirements for spare parts required on as needs basis
- » Investment in Capital for robotic drilling and increased efficiency commissioning December 2016
- » Components are supplied from Bankstown, Australia to all C-130J aircraft globally



Significant Capital Investment Completed

- Advanced Manufacturing Investment in excess of A\$28m in capital for both JSF & C-130J programs completed
- Further capital investment in key advanced manufacturing processes due for completion in CY16

Opportunity for Growth

- From January 2017 current production footprint averages 60% utilisation (2 shift 5 day basis)
- Aerospace manufacturing FY16 sales A\$49.2m with expected 10% CAGR based on secured contracts over next 5 years (based on customer forecast volume) with significant step growth in FY18/FY19 period
- Full 3 shift 6 day utilisation will accommodate growth rates of >15% CAGR with limited capital investment
- Australian government purchases identified in Defence White Paper provides significant opportunities for Australian supplier involvement
- Increased content opportunities on JSF and C-130J with existing customers
- MoU signed with DCNS Group (France) for SEA 1000 program
- New project opportunities actively in discussion with existing and new Defence Contractors



New Technology – Patented Solutions



Resin Spray Transfer (RST) – Lay-up

- » Spray or deposit resin onto tool
- » Pick & place 3D dry fibre preform onto sprayed resin
- » Vacuum bag the resin / preform layup
- » Cure
- » Demoulding

Benefits

- » Automated process
- » Faster processing times
- » Resin rich surface for exterior panels
- » Surface finish
- » Reduced material costs
- » Reduced tooling costs
- » Paintability

Qure Process – Moulding / Curing

- » Fast curing of composite using fluid heat transfer
- » Turnkey manufacturing solutions for Aerospace, Defence & Automotive business clients
- » Significant advantages over traditional industry-based manufacturing techniques

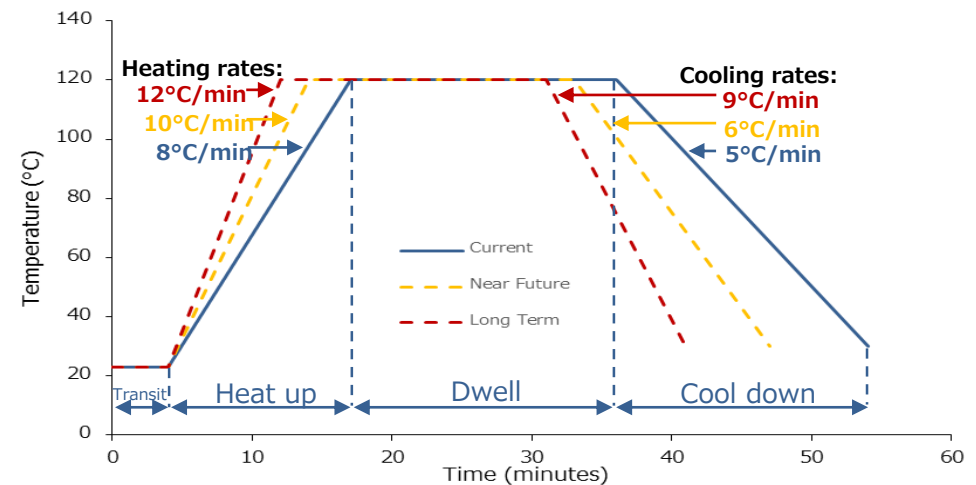
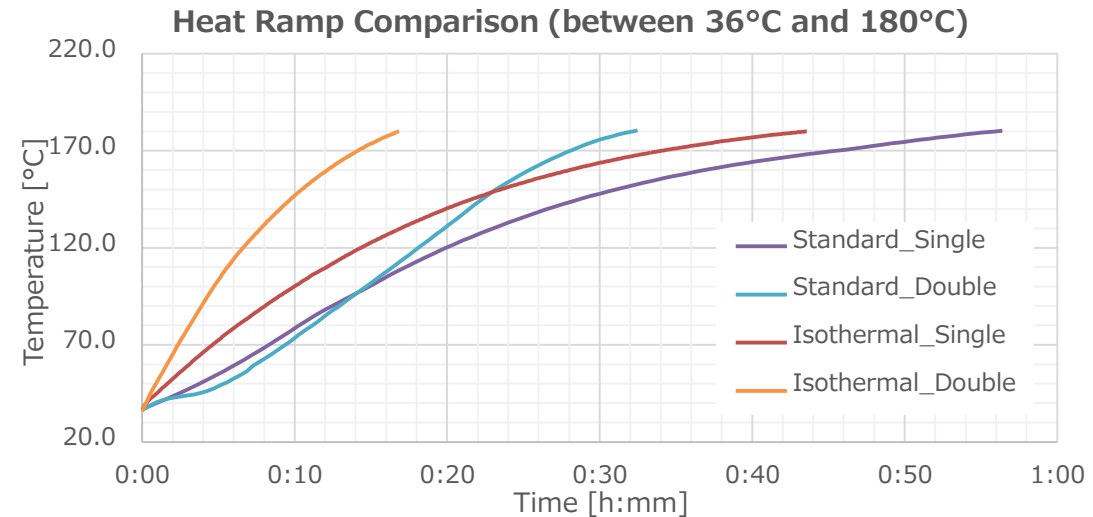
Benefits

- » Reduced production time
- » Greater design flexibility
- » Better end-product technical characteristics
- » Reduced capital investment
- » Reduced energy consumption
- » Lower tooling costs
- » Greater control over cure cycle

Two patented process technologies delivering clients lower costs & improved quality & finish

Substantial progress made on increasing the heating rate for our Qure technology

- » Isothermal machine halves time taken to reach the target cure temperature
- » In conjunction with rapid curing resins, Isothermal Qure will allow a 30 minute cure time
- » Fast heat up rates are required with strong interest in the aerospace industry to address high production rates for next generation aircraft where existing autoclave cure rates are typically 8 hours



Quickstep has now started using its patented RST process for production projects

- » RST is operational in Waurin Ponds facility
- » Now being used in the manufacture of body parts for the Thales Hawkei military vehicle program
- » Quickstep's product development team is now focused on improving process through delivery of:
 - » A range of RST resins to suit different product categories and optimise mixing and pumping system solutions
 - » Optimised fibre solutions to improve "wet out" and resin impregnation for product
 - » Tooling solutions to reduce manufacturing time through multi cavity options under a single cure bladder
 - » Preform technology to support improving cure cycles



Bonnet tool in RST spray booth

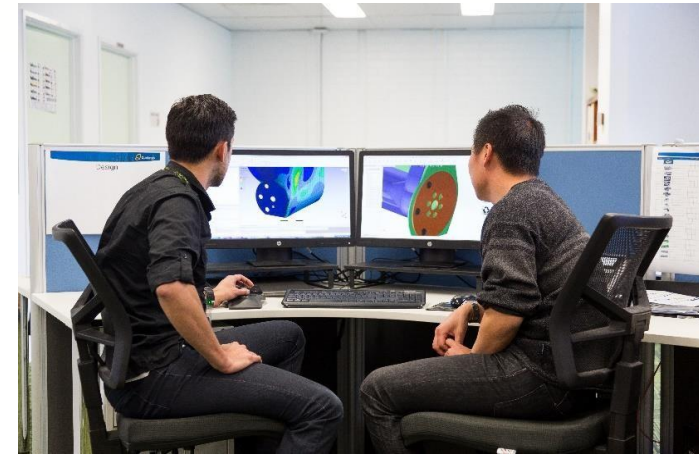


Finished Thales bonnet manufactured using RST

Quickstep continues to enhance its composite engineering and manufacturing technology capability

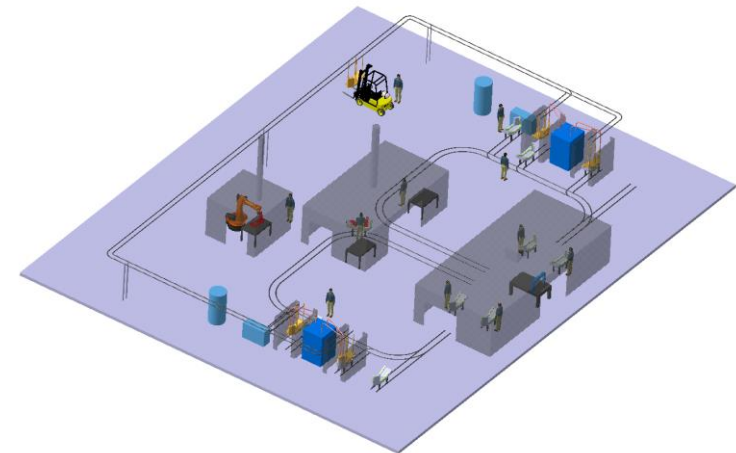
Engineering Full Service Supply

- » Investment in developing full service engineering supply solutions
 - 30 Technical and process manufacturing staff working on New Technology product development and project deployment in Waurin Ponds and Germany
 - Optimised materials for customer required specifications
 - Optimised low cost tooling designs with speed to market
 - Finite Element Analysis capability for part optimisation
 - Manufacturing process and capital design to suit part requirements

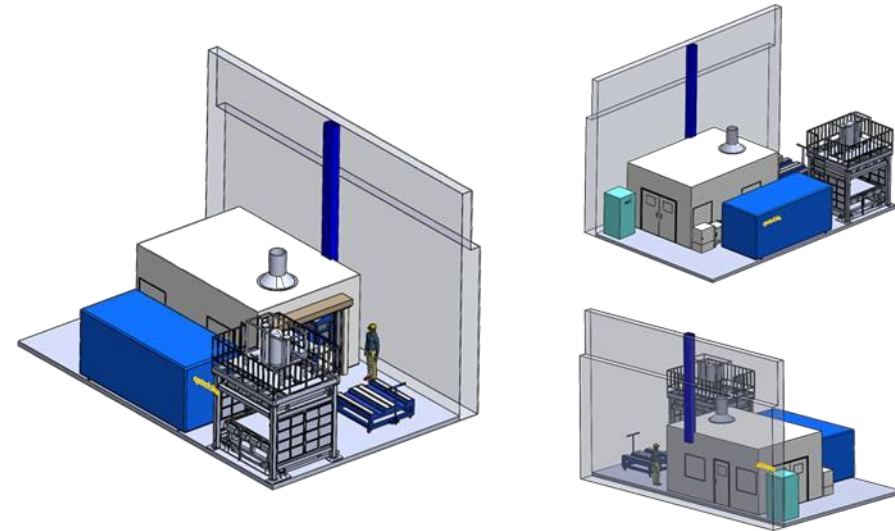


RapidQure Process

- » Next generation Qure process capable of mass production (>30,000 parts p.a.)
- » Line balanced manufacturing solutions in progress with key customers to achieve required volume performance
- » Product Quality and consistency programs in development to ensure part capability at accelerated rates



- » KIST (Korea Institute of Science and Technology) contract secured by Quickstep in early 2016
 - » Supply of RST cell & Qure machine to KIST by end-2016
 - » Machine design, development and manufacture in progress utilising latest machine technologies for optimised manufacturing time
- » Manufacturing system for KIST being optimised for niche-to medium-volume automotive industry production
 - » Contract will drive further development of RST & Qure systems with specific Korean customers for higher volume production
 - » Will deliver 30 minute Qure time with A-Class finish
 - » Opens up opportunities for Quickstep to partner and manufacture in one of the world's largest automotive production markets



New Technology – Market and Strategy

» **Global automotive composites market is valued at US\$12.1bn in 2016**

- Forecast to grow at CAGR of 9.8% through to 2026
- Market forecast to be worth US\$30.9bn in 2026

» **Market growth driven by number of factors**

- Increasingly demanding CO2 emissions regulations
- Increased demand for hybrid & electric vehicles globally
- Decreases in material & process costs of composites

» **Automotive composites market is segmented into three major sub-sectors**

- Polymer Matrix Composites (PMC); Metal Matrix Composites (MMC); Ceramic Matrix Composites (CMC)

» **PMC is the largest sub-sector in automotive, worth US\$9.71bn in 2016**

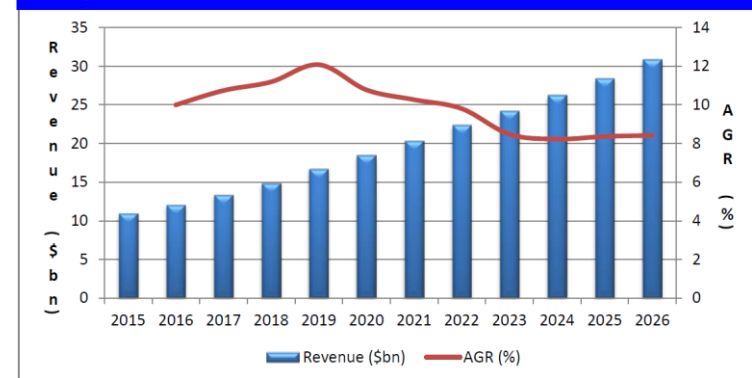
- Forecast to grow at CAGR of 10.4% through to 2026
- Market forecast to be worth US\$24.4bn in 2026

» **Carbon Fibre Reinforced Polymer (CFRP) is the major growth segment in PMC, valued at US\$3.4bn in 2016**

- Forecast to grow at CAGR of 15.7% through to 2026
- Market forecast to be worth US\$14.58bn in 2026
- CFRP will represent 59.6% of PMC sub-sector by 2026

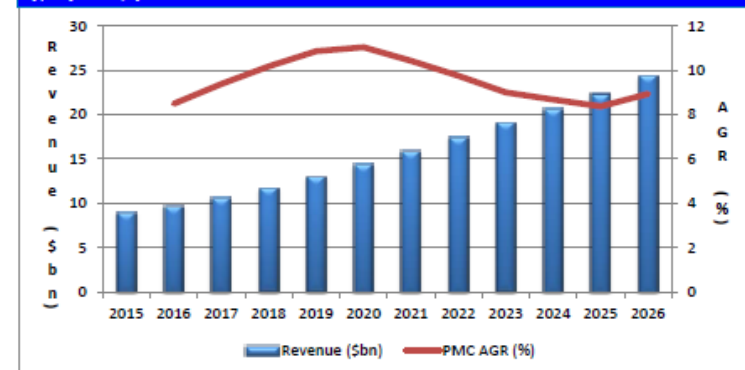
Source: visiongain 2016

Figure 3.1 Global Automotive Composites Market Size Forecast 2016-2026 (\$bn, AGR%)



Source: Visiongain 2016

Figure 3.6 Automotive Polymer Matrix Composites Submarket Forecast 2016-2026 (\$bn, AGR%)

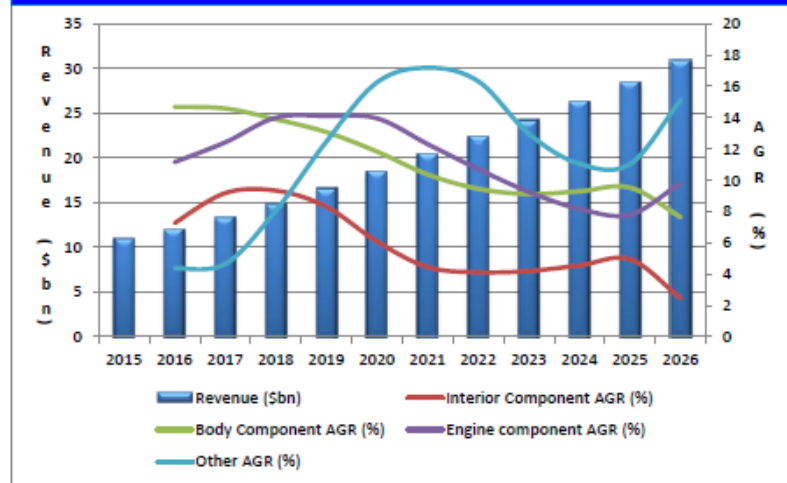


Source: Visiongain 2016

- » **Automotive composites market is made up of four product groupings**
 - **Interior components:** seats, door panels, Instrument Panels, headliners, floor systems, boot trim etc.
 - **Body components:** chassis, body panels, bonnets, bootlids, doors, load-floors, bumpers
 - **Engine components:** driveshaft, engine insulation & covers, gearbox components, differentials
 - **Other components:** suspension parts, tyres, petrol & CNC tanks etc.
- » **Interior & Body components are the largest segments, with 62% combined share**
 - Interiors using a range of composite materials
 - Body parts are heavy & provide significant weight saving opportunities to OEMs
- » **Interiors is a large segment for composites, valued at US\$3.92bn in 2016 and forecast to grow to US\$7.05bn by 2026**
- » **Body parts is the major growth segment for composites, worth US\$3.59bn in 2016 and forecast to grow to US\$10.9bn by 2026**

Source: visiongain 2016

Figure 3.31 Global Automotive Composites Market Size Forecast 2016-2026 by Composite Components (\$bn, AGR%)



Source: Visiongain 2016

Table 3.24 Global Automotive Composites Market Size Forecast 2016-2026 by Composite Components (\$bn, AGR%)

Revenues (\$bn)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Interior Components	3.65	3.92	4.28	4.68	5.07	5.38	5.62	5.85	6.09	6.37	6.69	7.05
AGR(%)		7.3	9.2	9.3	8.3	6.1	4.5	4.1	4.2	4.6	4.9	5.5
Body Components	3.13	3.59	4.11	4.68	5.29	5.92	6.53	7.15	7.80	8.52	9.34	10.05
AGR(%)		14.7	14.6	13.9	13.1	11.8	10.4	9.5	9.1	9.3	9.5	7.6
Engine & Drivetrain	2.24	2.49	2.80	3.19	3.64	4.15	4.66	5.16	5.64	6.10	6.58	7.02
AGR(%)		11.2	12.4	14.0	14.1	14.0	12.3	10.7	9.3	8.2	7.8	6.7
Other Components	2.01	2.10	2.19	2.37	2.67	3.10	3.63	4.23	4.77	5.30	5.89	6.78
AGR(%)		4.4	4.7	8.1	12.5	16.3	17.2	16.3	13.0	11.0	11.0	15.1
TOTAL	11.03	12.09	13.38	14.92	16.67	18.54	20.44	22.38	24.31	26.30	28.49	30.90

Source: Visiongain 2016

- » Quickstep is shifting its New Technology segment from pure R&D and product development
- » This also aligns with a shift from capital supplier into a volume parts manufacture globally
- » Build full service capability for each customer in design, materials development, and optimised manufacturing process definition to tailor solutions to customers needs
- » Develop demonstrator parts and provide run at rate trials to establish quality performance of targeted panel and structure components in Waurin Ponds and Germany on existing capital
- » Established product development programs with key customers from Australia and Europe development base
- » Commence and win supply of Automotive contracts (eg. Ford) at niche volumes to establish Automotive composite manufacturing quality and rate performance
- » Export from Australia for smaller volumes
- » Deploy capital in country where contract volumes will support



Quickstep's New Technology facility located at Deakin University's Waurin Ponds campus



Engine compartment component developed for Ford, part weight reduced by 48%, using carbon fibre to replace thermoplastics



Small Cars & Electric Vehicles

(Closures & Structural Parts)



- Vehicles requiring lightweighting for improved driving range & performance
- Focus on providing cost effective solutions for lower cost vehicles
- Strong focus on large structural parts to reduce vehicle weight

Performance & Luxury Vehicles

(Class A & Structural Parts)



- Number of luxury & performance vehicles utilising CFRP components
- Focus niche volume programs for performance vehicles
- Qualification of materials & Quickstep processes with vehicle manufacturers

Trucks & Transit Vehicles

(Structural Parts & Large Panels)



- Lightweighting of structural parts to reduce vehicle weight & improve vehicle driving & towing performance
- Replacement of heavy steel parts with CFRP composite components
- Focus on beams, panels & assemblies

Lightweight Sandwich/Core Structures (Class-A Surfaces)



- Qure low-medium pressure cure process protects core/sandwich structure
 - Bonnets, decklids, door skins
- Prepreg or RST solutions for 'Class A' surface finish
- Suits low-medium volume production

Lightweight Structural Parts (Structural Interiors)



- Structural interior parts
- Focus on lower volume niche programs for export
- Significant weight savings & greater strength compared to steel

Lightweight Structural Body Parts (Sound Absorptive)



- Parts with relatively flat, large surface areas & NVH requirements
- Processes provide cost benefits for automotive companies
- Targeting non-global platform models

Global Market

- » Global seat structures market ~ US\$16bn p.a.
 - ~91.4m seat frame sets to OEMs globally in CY2016 (Source : IHS 2016)
- » Lighter-weight seats particularly relevant for:
 - Luxury & performance vehicles; SUVs; Electric Vehicles

Project Scope

- » Design & development of composite structures
 - Structural requirements from OEM end-user
 - Quality levels (Class A) – Painted/unpainted
- » Optimised composite manufacturing solution
 - RapidQure process solution
 - Meet medium-level production volumes

In Development

- » Integrated front seat back - Engineered solution
 - Collaboration with a Tier One supplier
- » Rear seat structure - Engineered solution
 - Substitution of metal with composite structure
 - Collaboration with global OEM on 2nd & 3rd row seats



Composite Front Seat Back Structures manufactured at Quickstep's Waurin Ponds facility



Metal Rear Seat Structures - Engineered in Composites

Global Market

- » Body panels represent ~30% vehicle's weight
 - Additional 20% weight associated with chassis system
- » Light-weight panels particularly relevant for:
 - Luxury & performance vehicles (10.9m vehicles p.a. globally)
 - Electric vehicles, SUVs, Crossovers & Heavy trucks

Project Scope

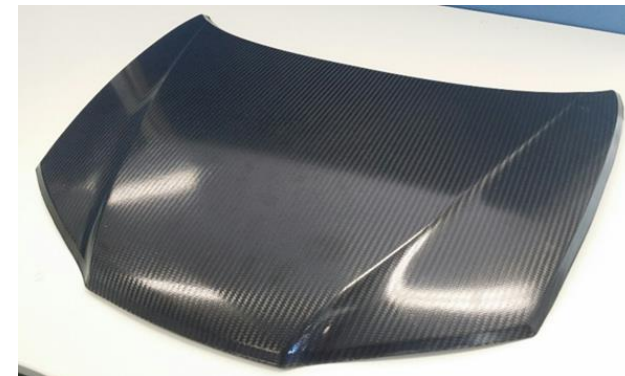
- » Design & development panels & closures
 - Structural requirements from OEM end-user
 - Quality levels (Class A) – Painted/unpainted
- » Optimised composite manufacturing solution
 - Application of RapidQure process solution
 - Meet medium-level production volumes
 - Materials, process, tooling & equipment
 - 'Asset Light' model for supply in market

In Development

- » Composite front fender - engineered solution
 - Collaboration with a European OEM
- » Composite body panel - engineered solution
 - Collaboration with two Chinese EV OEMs
 - Engineering project with global vehicle OEM

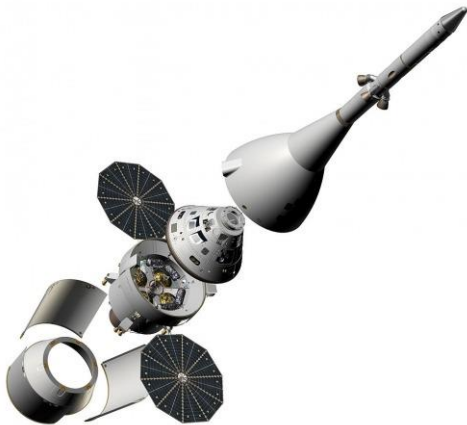


Composite Front Fender development program



Demonstrator mini bonnet developed at Waurn Ponds facility using Qure and RST Technology

Space & Exploration Aircraft (Unmanned)



- Use of **Qure** process to manufacture spacecraft & UAV parts – i.e. ORPE
- Focus on supply to low-medium volume production customers
- Customers potentially in developing markets – i.e. Russia, China, India

Light & Sports Aircraft (Small to medium size)



- Use of **Qure** process to manufacture light & sports aircraft components
- Flexible manufacturing solution for low volume multiple tooling opportunities
- Exploring opportunities in both developing & mature markets

Defence & Commercial Aircraft (Large global platforms)



- Qualification of **Qure** with Defence & Commercial producers
- Use of **Qure** process to manufacture parts for large PRIMES & Tier 1 suppliers
- Identify opportunities for Rapid**Qure** in the aerospace & defence sectors
- Manufacturing of parts in-house; outside Australia in asset light model

Quickstep first Aerospace parts using Qure machine technology

ORPE Technologiya

- » First commercial sale of **Qure** technology achieved in FY15
 - Integrated, assembled, tested and approved by customer
 - Delivery completed in FY16
- » Significant cost savings for customer
 - Estimated at 10% of the capital cost of traditional Autoclave process
- » Strong endorsement of Quickstep's Qure process
- » Parallel Integration of two Qure 250kW machines delivering and overall composite part (satellite shield) on 6m X 4m tool.
- » Technology shown to be scalable for large single cure products



Qure machine for 6x4m satellite shield for ORPE producing parts at Quickstep Germany

Global Market

- » Relatively new segment, small, simple to fly & must meet certain regulations
 - Market for very light aircraft & Light-Sport-type aircraft is ~3,000 units p.a. worldwide
- » Number of LA producers, producing between 20-200 aircraft p.a.
 - Emerging players, producing higher volumes

Value Proposition

- » Segment fits with Quickstep's current state of technology commercialisation & cycle times
 - Low/niche volume production of skins / flat parts
 - Weight restrictions see CFRP as material of choice
- » Qure has volume advantages over Autoclave
 - Ability to produce up to 20k flying parts p.a.
 - Part cost saving to producer in vicinity of 30%



Demonstrator skin developed & manufactured for LA producer

Current Activities

- » Demonstrator Development part manufacture
 - Testing program for laminate quality and specification requirements under review
 - Discussions underway with other aircraft companies

» Aerospace Manufacturing

- Complete capital investment plan to support growth
- Leverage existing customer relationships on new project opportunities
- Surpass volumes of 100 parts per month for JSF
- Improve manufacturing efficiencies and reduce inventory post capital installation
- Deliver new customer build-to-print programs

» New Technology

- Deliver Qure & RST to KIST, with 30 minute part cure time & Class A surface performance
- Work with global customers on product development programs & demonstrator parts for future contracts
- Continue to grow engineering & design capabilities to deliver full-service supply to growing customer base
- Win contracts for target products
- Match material & process technologies to meet increasing rate and performance requirements at optimised costs
- Work with partners (Deakin, CSIRO, key suppliers) on material science programs
- Continue commercialisation of New Technology manufacturing through maturing of RapidQure process



Advanced Manufacturing, Smart Technology in one Quickstep

- » Carbon fibre composites market is growing – Aerospace & Automotive
- » Long term Aerospace manufacturing contracts (JSF & C-130J) secured
- » Threefold JSF growth expected from FY16 to FY19
- » Capacity for growth in Aerospace Manufacturing from invested capital
- » Waurin Ponds new facility now fully commissioned with new product development projects underway with global OEMs & Partners
- » Disruptive Manufacturing Technologies (Qure & RST) in commercialisation
- » New Technology accepted for component manufacture - Hawkei program
- » New Technology accepted for equipment supply – ORPE & KIST programs
- » Global Automotive component supply OEM (Ford) in progress
- » Strong management team in place to deliver Quickstep's strategy

