

Carbon Revolution

Half Year Results 2020

20th February 2020



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Authorised for lodgment to ASX by the Board of Directors of Carbon Revolution Limited.



31 Dec 2019 Results Presentation Agenda



Summary

Operational Highlights

Financial Results

2020 Outlook

Summary



Strong customer and consumer demand drives growth

Financial metrics on track:

- Positive sales mix and strong demand for Carbon Revolution wheels
- Cost per wheel trending down
- Scale benefits starting to be realised

Operations:

- Industrialisation progressing well with the rate of wheel production increasing. Production rates increasing further through the second half
- Alliance with Japanese trading house Mitsui & Co. Ltd. one of the most diversified trading, investment and service enterprises in the world, formed in September 2019
- Aerospace project progressing; design underway and new material technology selected

On track for:

- FY20 total revenue of \$62m with wheel sales of approximately 23,000 in FY20
- Becoming EBITDA positive during the last quarter of FY20

Operational Highlights

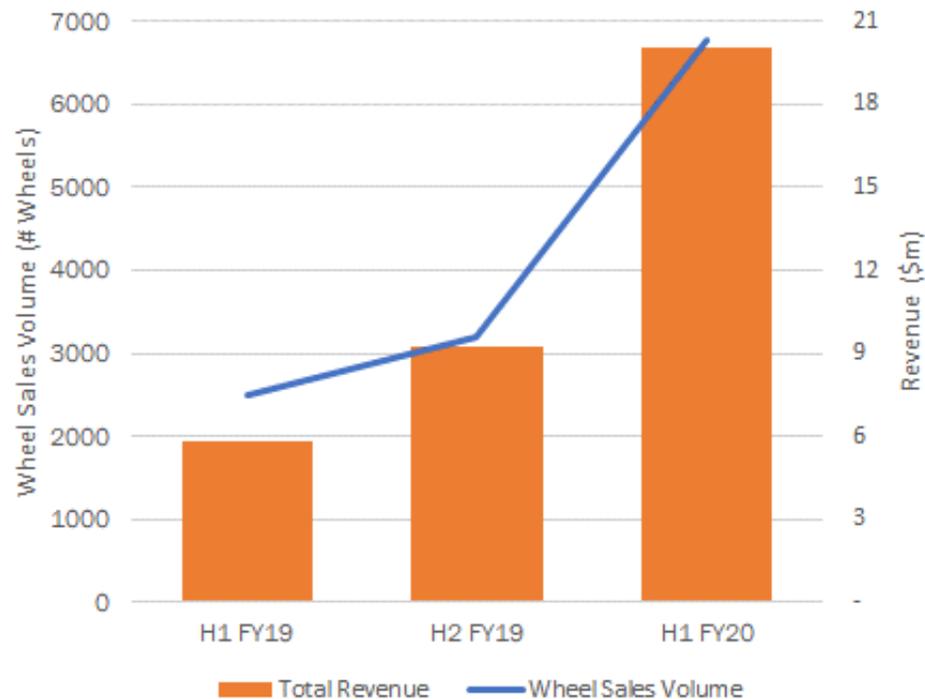


Revenue growth on track and second half volume step-up planned

Progress on industrialisation to meet customer volume demand is delivering the uplift in revenue for the forecast period

Wheel Sales & Total Revenue

H1 FY 19 - H1 FY20



1st half revenue overview

- 30% of Prospectus forecast wheel sales revenue delivered in first half FY20
- The key drivers of the Company's revenue were:
 - Strong consumer demand in key OEM programs
 - Investment in industrialisation assets and people is delivering volume growth
- Engineering and Tooling revenue up \$1.4m from previous corresponding period and in line with new programs and growth of existing programs

Drivers of revenue growth in 2nd half

- Continued strong consumer demand on key OEM programs
- Demand supported by strong growth in manufacturing throughput, enabled by:
 - Additional assets coming in Q3 and early Q4 FY20
 - Increasing the efficiency and output of existing assets
 - Process improvements to increase uptime
 - Investment in the team – staff numbers and training is well underway
 - Tightening inventory process

Operations update – Second half focus

Cutting

- New cutting machine due in March
- New cutting tools in March

Layup and preforming

- Virtual conveyer has commenced driving efficiencies
- Additional preforming capacity in April
- Face and bucket cooling has commenced, improving tooling flow and output



Moulding

- Additional high pressure capacity online in May, with new technology to increase throughput
- Lean-based low pressure capacity and productivity improvements
- Focus on efficient tooling flow and usage and training to deliver volume step-up
- Quality development in train

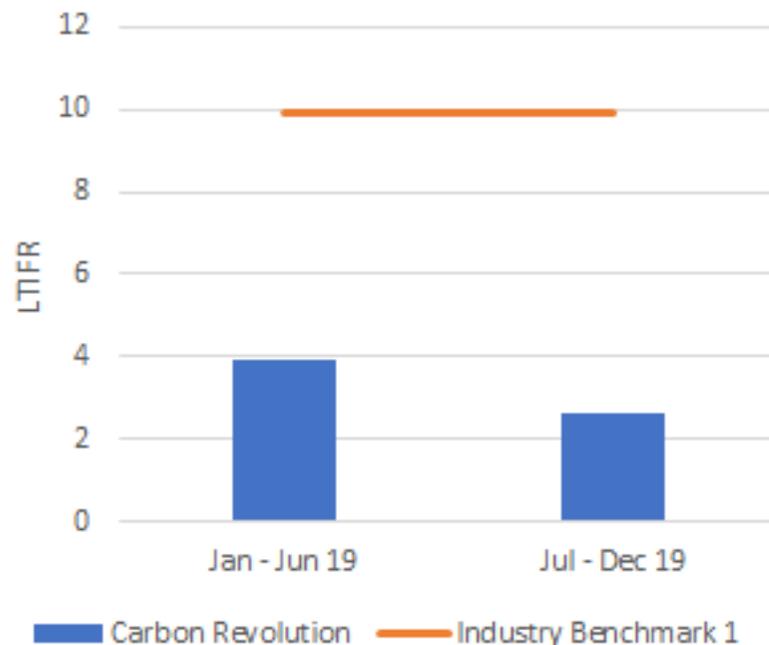
Paint line and Downstream

- Paint line benefits from major programmed maintenance over Christmas break supported by process improvements in other downstream processes

The health and safety of the Carbon Revolution team is the top priority

Carbon Revolution's goal is to achieve zero harm to people and the environment

Carbon Revolution's LTIFR vs Industry Benchmark¹



Strong and proactive focus on maintaining a safe work environment, in this period of rapid growth

LTIFR of 2.6, well below industry benchmark of 9.9 and has improved in the previous 6 months

Key safety programs:

- Thorough induction programs, signed off before start
- Stop and think culture
- Life Saving Rules

Zero environmental incidents as benchmarked against and certified to ISO 14001 certification

1. Industry benchmark is the Safe Work benchmark for Motor Vehicle and Motor Vehicle Part Manufacturing

Financial Results



Scale clearly benefits the bottom line

Profit & Loss Statement for half ended 31 December 2019

	HY Dec 19	HY Dec 18	% Vrn
Revenue	20,079	5,852	243%
Cost of good sold	24,643	10,975	125%
Gross Profit	(4,564)	(5,123)	11%
Other Income	5,180	2,858	81%
R&D	(2,967)	(2,164)	37%
SG&A	(6,247)	(5,008)	25%
Underlying EBIT	(8,598)	(9,437)	9%
Capital Raising transaction costs	(1,311)		
Borrowing costs	(4,529)	(701)	
Antidilutive shares issued on IPO	(35,801)		
Gain/(loss) on revaluation of financial instruments	(48,387)		
Loss before income tax expense	(98,626)	(10,138)	
Income tax expense	-	-	
Loss for the period after income tax	(98,626)	(10,138)	

- Wheel sales volume increased by 171% to 6,761 wheels from the previous corresponding period
- Gross profit is improving and moving to positive in the second half driven by larger sales volume and industrialisation
- Other income stronger due to larger R&D tax incentive claim
- Healthy investment in research and development continues
- SG&A per wheel is 54% down from the previous corresponding period, reflecting control of fixed costs
- One off capital raising and IPO-related costs are \$85.5m

Balance Sheet

Consolidated Statement of Financial Position

	31-Dec-19	30-Jun-19	Mvt
	\$'000	\$'000	\$'000
Cash & cash equivalents	39,916	45,843	(5,927)
Receivables	14,133	9,031	5,102
Inventories	12,874	9,670	3,204
Other current assets	934	321	613
Total current assets	67,857	64,865	2,992
PP&E	35,677	31,536	4,141
Intangibles	11,058	7,886	3,172
Right-of-use Asset	9,652	-	9,652
Total non current assets	56,387	39,422	16,965
Total assets	124,244	104,287	19,957
Payables	12,124	11,695	429
Short term borrowings	-	74,032	(74,032)
Current deferred income	551	608	(57)
Lease Liability - current	616	-	616
Provisions	2,463	2,521	(58)
Total current liabilities	15,754	88,856	(73,102)
Long term borrowings	18,500	25,500	(7,000)
Lease Liability - non current	9,220	-	9,220
Non current deferred income	3,397	3,160	237
Non current provisions	433	180	253
Total non current liabilities	31,550	28,840	2,710
Total liabilities	47,304	117,696	(70,392)
Net Assets	76,940	(13,409)	90,349

Larger movement items are:

- Receivables and inventory growth in line with sales growth, noting receivables includes \$3m growth in R&D tax incentive rebate
- PP&E growth due to investment in Industrialisation assets and program tooling
- Intangibles - capitalisation of the development component of R&D expenditure
- Right of use assets and lease liability – operating leases (mainly Deakin property lease) are brought onto the balance sheet for the first time in accordance with the new leasing standard, AASB16
- Short term borrowing (convertible notes) have been converted to equity through the IPO process
- Long term borrowing reduction consists of \$2m decrease in SOV loan and \$5m repayment in Ronal loan
- Equity movements reflect conversion of notes to equity and the IPO

Building the business: investing in trade working capital, technology and assets

Statement of Cashflows	31-Dec-19 000's	31-Dec-18 000's
<u>Cash flow from operating activities</u>		
Receipts from customers	17,599	6,186
Receipt of grants	262	3,299
Payments to suppliers and employees	(32,997)	(12,727)
Interest received	283	96
Borrowing costs	(647)	(695)
Net cash used in operating activities	(15,500)	(3,841)
<u>Cash flow from investing activities</u>		
Payment for property, plant and equipment	(6,406)	(7,803)
Payment for intangible assets	(4,031)	(3,527)
Net cash used in investing activities	(10,437)	(11,330)
<u>Cash flow from financing activities</u>		
Capital raising transaction costs	(4,672)	
Proceeds from/(repayments of) third party borrow	(5,000)	154
Proceeds from share issue	30,000	
Repayment of lease liability	(318)	
Net cash provided by financing activities	20,010	154
	-	
Net decrease in cash held	(5,927)	(15,017)
Cash at beginning of financial year	45,843	19,179
Cash at end of financial year	39,916	4,162

Net cash used in operating activities

- Sales growth has driven the growth in receipts from customers
- R&D grant income of \$5.9m is forecast to be received in the third quarter
- Growth in wheels volume production is the main driver of the increase in payments to suppliers and employees
- The majority of borrowing costs comprises interest on convertible notes pre-IPO and interest on the Ronal loan

Net investing cashflows

- Continued investment in capital expenditure to meet current and future programs
- Ongoing investment in Research and Development (intangible assets)

Net financing cashflows

- Net \$25.3m funds inflow from the IPO after accounting for transaction costs
- \$5m debt reduction post IPO

Outlook



Outlook

Carbon Revolution's growth journey is well underway. The Industrialisation phase is occurring and the path to profitability is clear. Key financial KPIs are tracking in the right direction

Production growth continues to be driven by strong increases in demand on OEM programs

Carbon Revolution is on track to meet its prospectus outlook

- ✓ Wheel sales of approximately 23,000 in FY2020
- ✓ Revenue of approximately \$62m in FY2020
- ✓ Becoming EBITDA positive during the last quarter

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APPENDIX

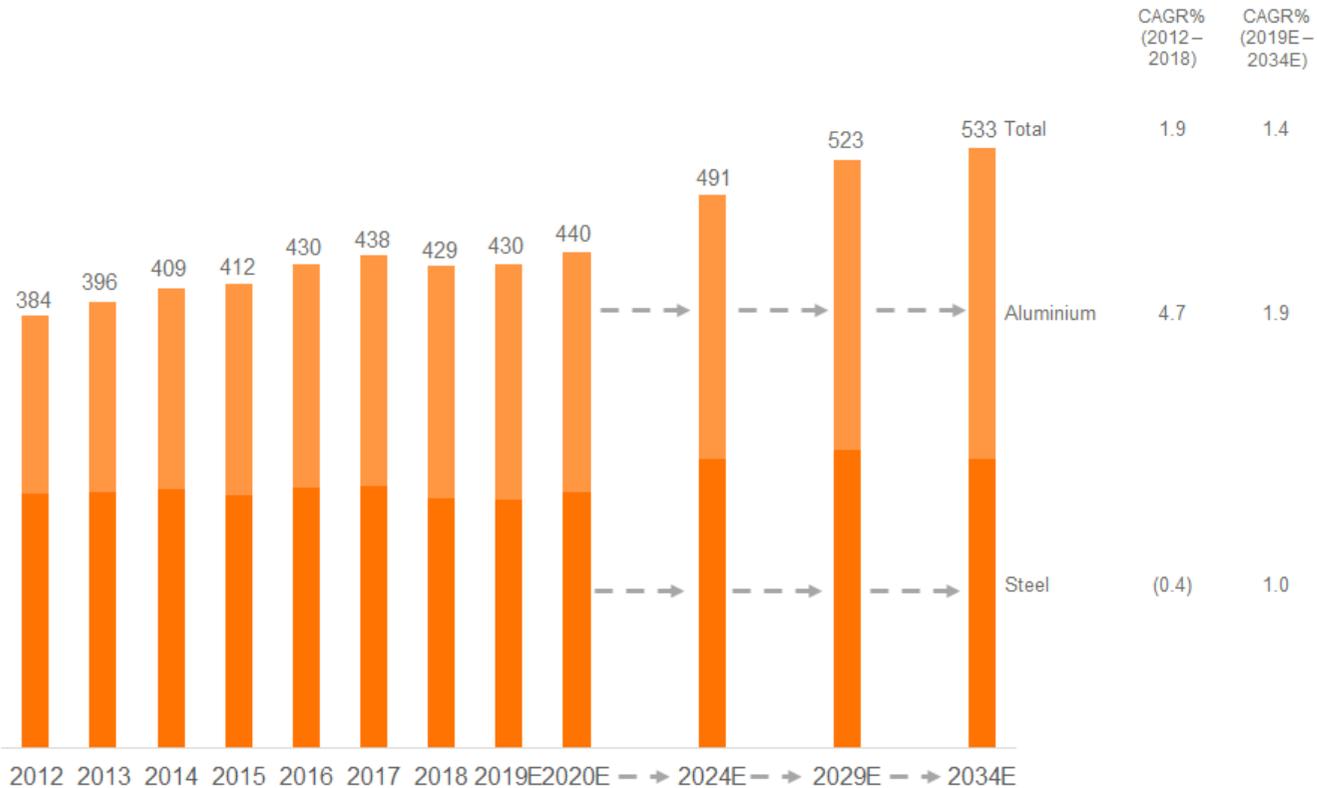


Industry Overview



The addressable market is very large

Estimated automotive new vehicle wheel market by material (2012–2034E; millions of wheels)



- In 2018, the automotive new vehicle wheel market is estimated by QUBE to have been approximately 429 million wheels
- Carbon Revolution believes its wheels are currently most suited to the high-performance and luxury segments of the automotive new vehicle wheel market, which it estimates as 10% to 15% of the total market
- The Company believes the current addressable market size is 9 million to 14 million vehicles* per annum or 36 million to 56 million wheels.
- Automotive technologies have usually been adopted by the high-performance and luxury car market segments initially and spread to broader use in the market

* based on an overall FY17 market size

Sources: QUBE 2019 Q3 Automotive OE Tyres and Wheels Technology trends and Forecasts to 2034; QUBE 2016 Q2 Global light vehicle OE wheels market – forecasts to 2030

Carbon fibre wheels make cars lighter, faster, quieter, and more fuel efficient

- ✓ Increased vehicle efficiency
- ✓ Enhanced vehicle performance
- ✓ Increased range for electric vehicles
- ✓ Aesthetic improvement
- ✓ Improved noise, vibration and harshness performance
- ✓ Reduction in fuel consumption

Clear global market leadership

Carbon Revolution is the only company globally to have successfully developed and manufactured single piece carbon fibre wheels to OEM quality standards with commercial adoption across several major OEM models

Overview of materials used in automotive wheel manufacturing

	Steel: Vehicle application <ul style="list-style-type: none">Commercial and low-end	Relative benefits <ul style="list-style-type: none">Cheap to source for low-cost cars
	Cast aluminium: Vehicle application <ul style="list-style-type: none">Low to high-end	Relative benefits <ul style="list-style-type: none">Lighter and have a better aesthetic than steel wheels
	Forged aluminium: Vehicle application <ul style="list-style-type: none">High performance	Relative benefits <ul style="list-style-type: none">Lighter than cast aluminium, increasing performance
	Magnesium¹: Vehicle application <ul style="list-style-type: none">High-end performance	Relative benefits <ul style="list-style-type: none">Lighter than forged aluminium²
	Carbon fibre: Vehicle application <ul style="list-style-type: none">High-end performance and low weight applications	Relative benefits <ul style="list-style-type: none">Stronger and lighter than magnesium further increasing performance

Note: ¹ Includes cast and forged magnesium wheels; ² Limited current usage in the market due to cost and performance factors

Current competitors include:

PORSCHE AG / Thyssenkrupp AG

- Developed carbon fibre wheels for Porsche using braided rim technology
- Wheels are reportedly 20% lighter than Porsche's regular aluminium wheels

BMW / MUBEA CARBOTECH

- Developed carbon fibre wheels for BMW using a hybrid wheel, with an aluminium hub and spokes and a carbon-fibre rim.
- Approximately equivalent in weight to the forged aluminium wheel option

Koenigsegg Automotive AB (Koenigsegg)

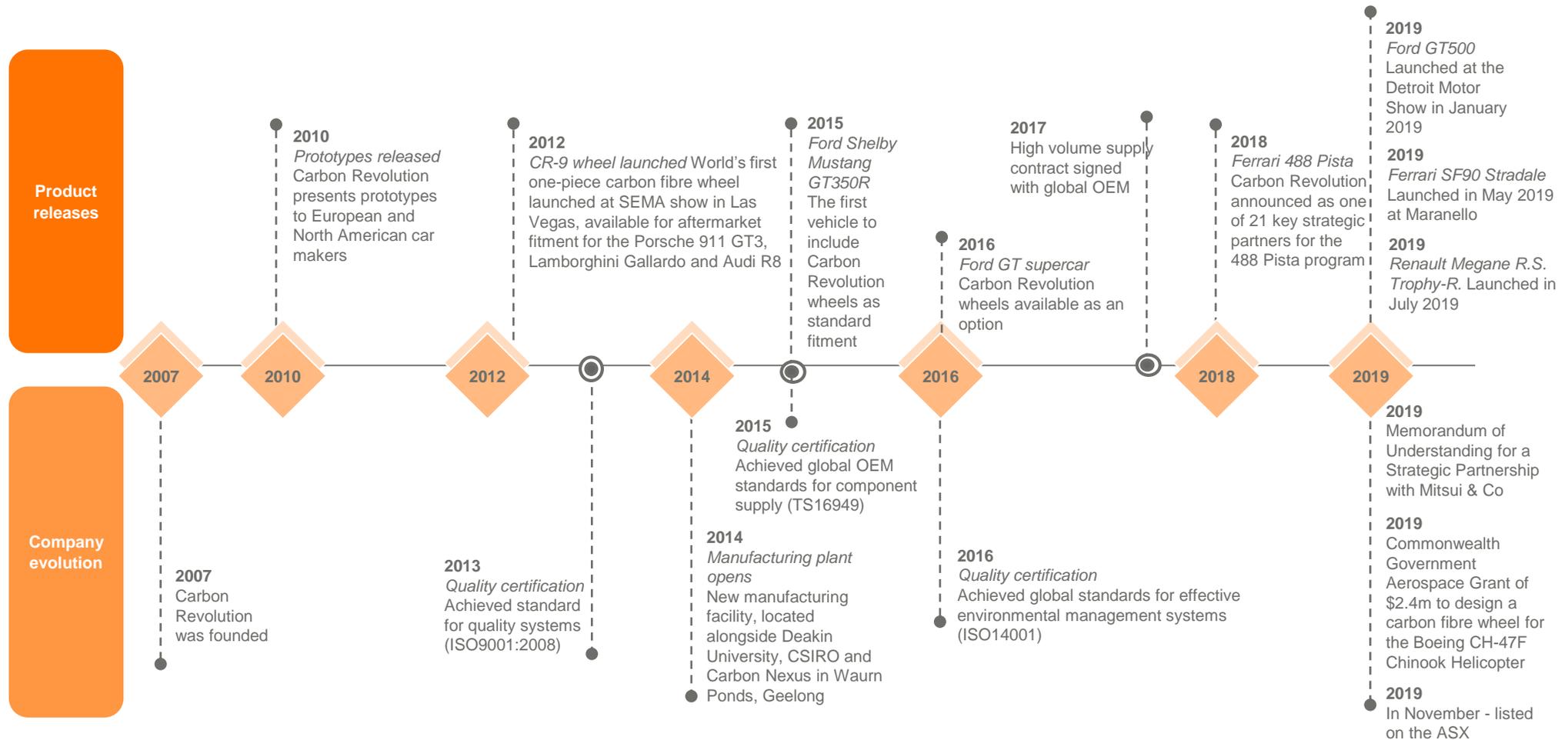
- Developed a carbon fibre wheel which is believed to only be offered on its own limited volume hypercar range

Company Overview



Carbon Revolution's history

Carbon Revolution has successfully delivered on product R&D and commercialisation and has already started industrialising its manufacturing operations



Demonstrated market acceptance of Carbon Revolution from leading automotive OEM's

Carbon Revolution has 9 existing contracts with 5 global OEMs with 6 programs currently publically announced

Awarded Programs (Publically Announced)



Ford Mustang GT350R (2015)

6.9kg WEIGHT REDUCTION per wheel Sports Car of the Year¹

45%² WEIGHT SAVING over aluminium equivalent



Ford Mustang GT500 (2019)

First industrialised wheel **MOULDED UNDER HIGH PRESSURE**

41% WEIGHT SAVING over aluminium equivalent



Ford GT (2016)

Carbon Revolution's **FIRST EXPOSED WEAVE** OEM product

22%³ WEIGHT SAVING over aluminium equivalent



Renault Megane Trophy RS (2019)

FIRST FRONT WHEEL DRIVE hot hatch application

23%³ WEIGHT SAVING over aluminium equivalent



Ferrari 488 Pista (2018)

Next generation **PREFORM TECHNOLOGY AND RESIN SYSTEM**

40%² WEIGHT SAVING over aluminium equivalent



Ferrari SF90 Stradale (2019)

FIRST PLUG-IN HYBRID ELECTRIC vehicle application

32% WEIGHT SAVING over aluminium equivalent



Note:

¹ Popular Mechanics Sports Car of the Year for 2015; ² As publicly stated by OEM; ³ Constrained by styling requirements and compared to lightweight forged aluminium wheel.

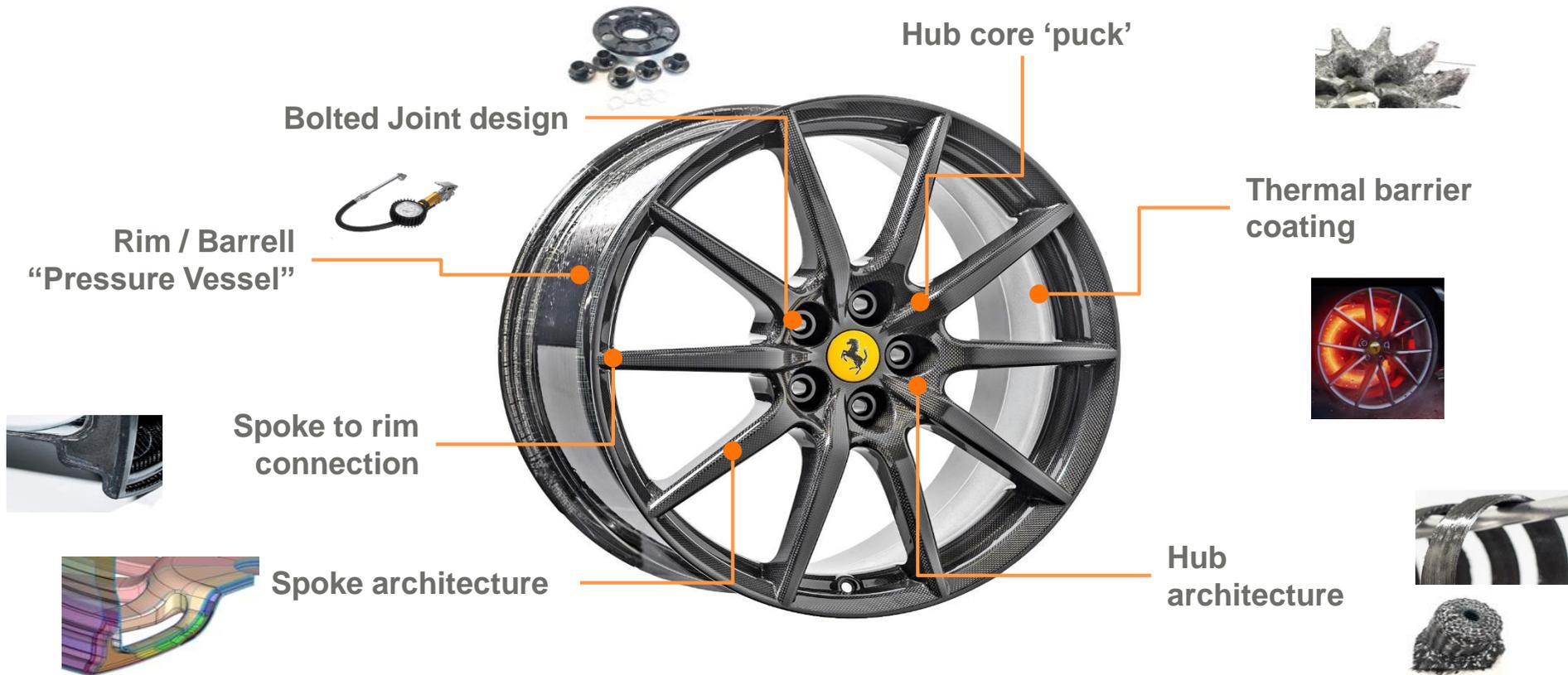


Complex product engineering capability and proprietary, scalable manufacturing

MATERIAL SCIENCE

WHEEL DESIGN & ENGINEERING

ADVANCED & PROPRIETARY MANUFACTURING

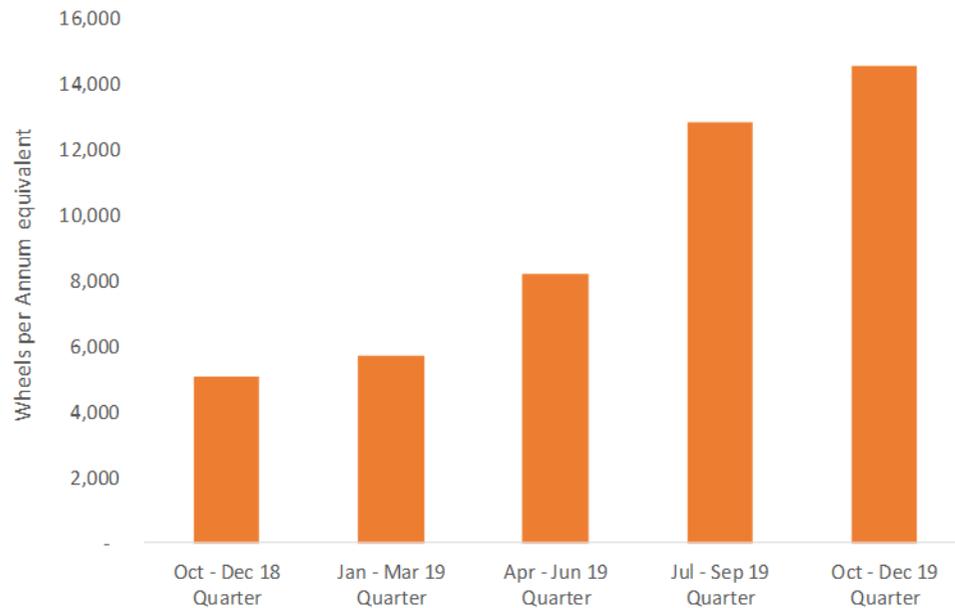


Carbon Revolution has been granted 43 patents across 7 patent families with a further 6 patents pending across those families, and 8 pending patents across 4 new patent families

Significant capacity expansion in progress

- Geelong facility expanded to approximately 10,000m² in October 2018
- Demonstrated annualised production rate of approximately 15,000 wheels in the December quarter
- Forecast monthly annualised production rate of almost 32,000 wheels per annum by June 2020
- New state of the art manufacturing assets drive Carbon Revolution's industrialization pathway

Annualised rate of finished wheels production



Geelong (Victoria) Manufacturing facility



Industrialisation program is well underway

Carbon Revolution's industrialisation program is expected to drive increased capacity and lower the cost of producing each wheel



- Key objectives in FY20 are:
 - 300% growth in wheel sales to 22,821 wheels (relative to FY19)
 - achieve a reduction in average direct costs per wheel of approximately 34% from the end of FY19 to the end of FY20F
- Drivers of industrialisation to date include:
 - Established a high quality and internationally experienced team of industrialisation engineers
 - Commissioning high-volume cutting machines (1st generation)
 - Commissioning automated rim forming machines (2nd generation)
 - Introduction of high pressure 'moulding lines' in addition to low pressure capacity
 - Reduction in surface preparation time per wheel
- Beyond the FY20 industrialisation outcomes, the focus of the industrialisation team will be on achieving fully industrialised production from Carbon Revolution's manufacturing facility. This will be achieved through the installation of 'mega-lines'
- Mega-lines will incorporate:
 - A continuous industrialised process through a significant part of the overall process;
 - Further significant reductions in direct labour inputs
 - Obtaining raw materials at lower costs, enabled by Carbon Revolution's increasing scale

Growth Strategy



Strategic Growth Opportunities

The Company's investment in Research & Development has also positioned it to pursue other wheel sectors and adjacent markets

Core business

- In the short to medium term, growth is expected to be driven by demand from the high-performance and luxury automotive new vehicle wheel market, through:
 - Existing OEM contracts
 - New contracts with existing OEMs
 - New contracts with new OEMs
- Continued industrialisation expected to reduce unit costs of production
 - Expected to result in Carbon Revolution's wheels being adopted across a broader range of vehicles.

Aerospace

- The aerospace industry continues to seek weight reduction solutions
- In 2019 the Commonwealth Government awarded Carbon Revolution a \$2.4 million grant to design the world's first light-weight carbon fibre wheels for the Boeing CH-47F Chinook helicopter
- The aircraft and aerospace wheel market segments that the Company believes will ultimately be addressable for this technology include commercial, business and defence

Adjacent Markets

- Carbon Revolution's product design technologies and manufacturing technologies are considered to have potential applications to a variety of adjacent sectors, including:
 - industrial
 - freight
 - logistics
- Recently announced Mitsui relationship is expected to provide growth and efficiency opportunities