

# Thorney Technologies Ltd

ABN 66 096 782 188

ASX Announcement: 20 November 2019

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## THORNEY INVESTMENT FORUM – COMPANY PRESENTATIONS

Please find attached a company presentation from Carbon Revolution Ltd being presented at today's Thorney Investment Forum in Melbourne.

### Details:

Date: Wednesday 20 November 2019  
Location: Ernst & Young  
Address: Level 23, 8 Exhibition Street, Melbourne  
Time: 9.30am for 9.45am, concluding by 1.00pm

A video recording of the presentations will also be uploaded to the respective websites a few days after the forum concludes.

Please direct enquiries to:

**Craig Smith**

Company Secretary

T: + 61 3 9921 7116

E: [craig.smith@thorney.com.au](mailto:craig.smith@thorney.com.au)

W: <http://www.thorneytechnologies.com.au/>

# Carbon Revolution

THORNEY INVESTMENT FORUM



# Carbon Revolution at a glance

Established in Geelong in 2007, Carbon Revolution is an Australian based advanced manufacturer of single piece carbon fibre automotive wheels

**Commercialisation  
achieved**

**OEM Contracts  
Awarded**

**Industrialisation  
Well-Underway**

**Strong Forecast  
FY20 Revenue  
Growth**

**Expected to  
become EBITDA  
positive during Q4  
FY20**

# 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



# Carbon Revolution wheels well established in the market



*"These wheels are really revolutionary. They are a game changer for a performance car in terms of acceleration, unsprung weight and handling"*

**Jamal Hameedi, Engineering Director SVO (Jaguar Land Rover) - former Global Head of Ford Performance, 9-Oct-2015 (AFR)**

*"Working with supplier partner Carbon Revolution, the new wheels are constructed with the latest generation of fibre and resin technology that permits greater design flexibility"*

**Ford Press Release, 17-May-16**



*"Lighter wheels means lightening the extremities, thus reducing forces of inertia and rotating mass for the drivetrain to deal with. These carbon fibre wheels are around 40 percent lighter than the standard wheels mounted on the Ferrari 488 GTB"*

**The Official Ferrari Magazine, September 2018**



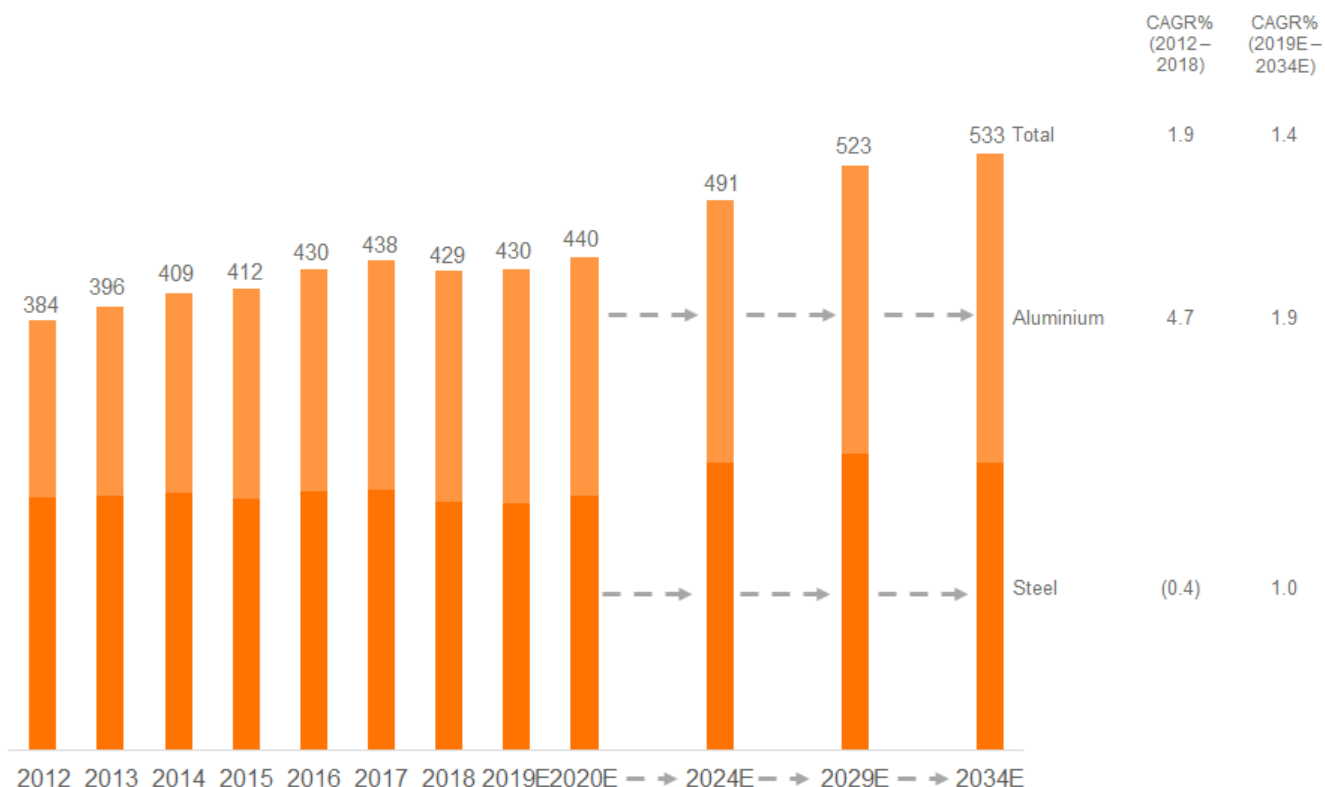
*"Ford worked with supplier Carbon Revolution on a new more automated, higher-pressure manufacturing process for the wheels that allows the 20-inch units to match the weight of the 19s used on the GT350R. "*

**Forbes , 14<sup>th</sup> January 2019**



# 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

# 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 publicly announced

## Awarded Programs (Publically Announced)

	<b>Ford Mustang GT350R (2015)</b> <b>6.9kg WEIGHT REDUCTION</b> per wheel Sports Car of the Year¹ <b>45%² WEIGHT SAVING</b> over aluminium equivalent			<b>Ford Mustang GT500 (2019)</b> First industrialised wheel <b>MOULDED UNDER HIGH PRESSURE</b> <b>41% WEIGHT SAVING</b> over aluminium equivalent	
	<b>Ford GT (2016)</b> Carbon Revolution's <b>FIRST EXPOSED WEAVE</b> OEM product <b>22%³ WEIGHT SAVING</b> over aluminium equivalent			<b>Renault Megane Trophy RS (2019)</b> <b>FIRST FRONT WHEEL DRIVE</b> hot hatch application <b>23%³ WEIGHT SAVING</b> over aluminium equivalent	
	<b>Ferrari 488 Pista (2018)</b> Next generation <b>PREFORM TECHNOLOGY AND RESIN SYSTEM</b> <b>40%² WEIGHT SAVING</b> over aluminium equivalent			<b>Ferrari SF90 Stradale (2019)</b> <b>FIRST PLUG-IN HYBRID ELECTRIC</b> vehicle application <b>32% WEIGHT SAVING</b> over aluminium equivalent	

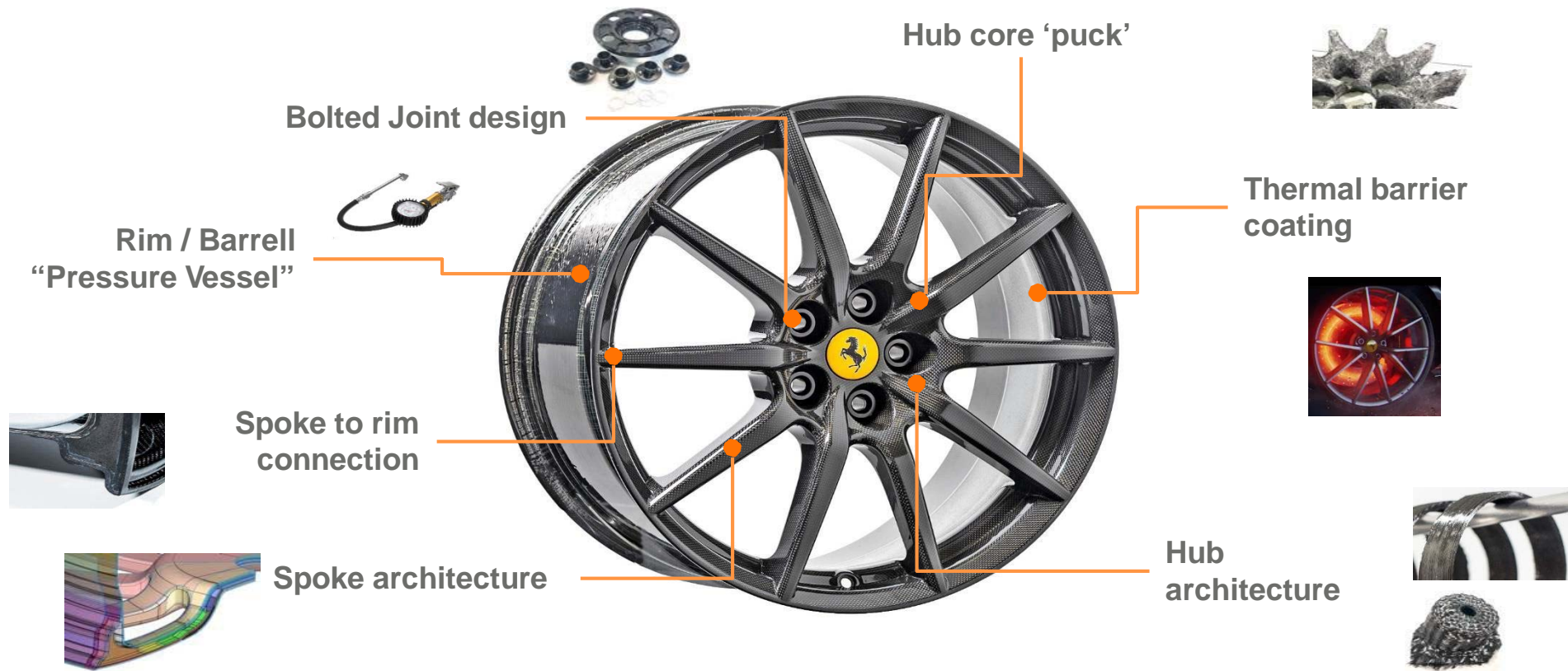


# Complex product engineering capability and proprietary, scalable manufacturing

MATERIAL SCIENCE

WHEEL DESIGN & ENGINEERING

ADVANCED & PROPRIETARY MANUFACTURING



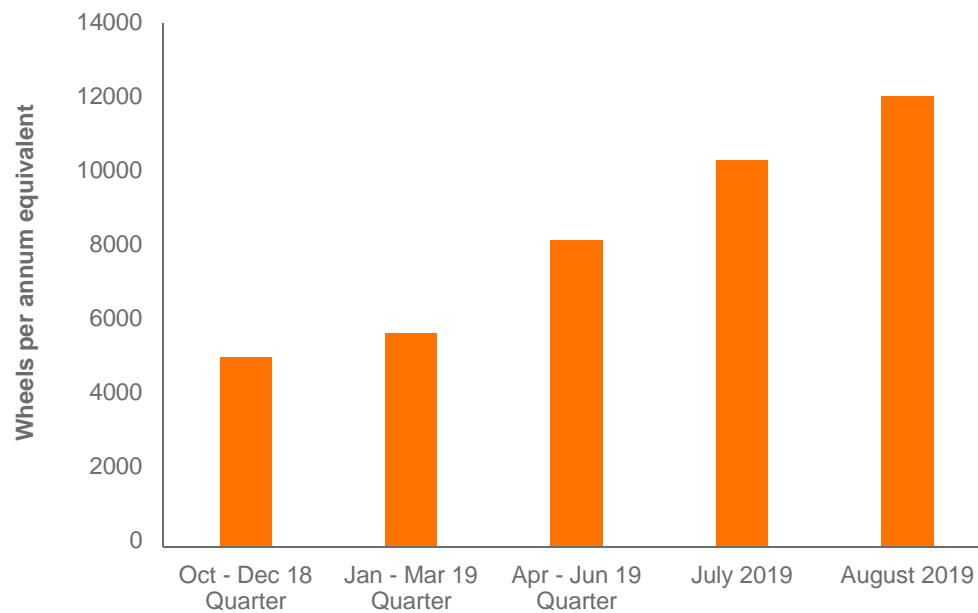
Carbon Revolution has been granted 41 patents across 7 patent families with a further 8 patents pending across those families, and 4 pending patents across 4 new patent families



# Significant capacity expansion in progress

- Geelong facility expanded to approximately 10,000m<sup>2</sup> in October 2018
- Demonstrated monthly annualised production rate of approximately 12,000 wheels in August 2019
- 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



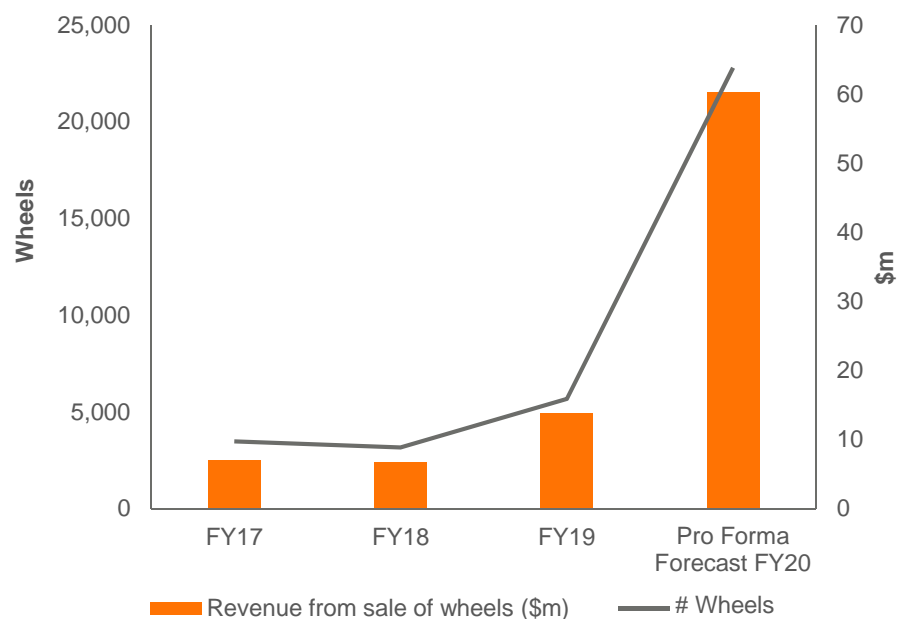
## Geelong (Victoria) Manufacturing facility



# Strong demand driving step change in revenue growth

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

## Revenue and Wheel Volumes



## Revenue from Sale of Wheels

- The key drivers of the Company's revenue are
  - volume of wheel sales
  - price per wheel

## Drivers of Revenue Growth in FY20

- 40% is forecast to arise from the expansion of existing programs in production in FY19
  - including the Ferrari 488 Pista
- 60% is forecast to arise from new programs in FY20 including
  - Ford Mustang GT500
  - Ferrari SF90 Stradale
  - Renault Megane R.S. Trophy-R

	FY17	FY18	FY19	Pro Forma Forecast FY20
Implied Average Price per Wheel	\$2,033	\$2,116	\$2,428	\$2,646