



# SuperAlloy Industrial Co.

Invest a  
Lightweight Future



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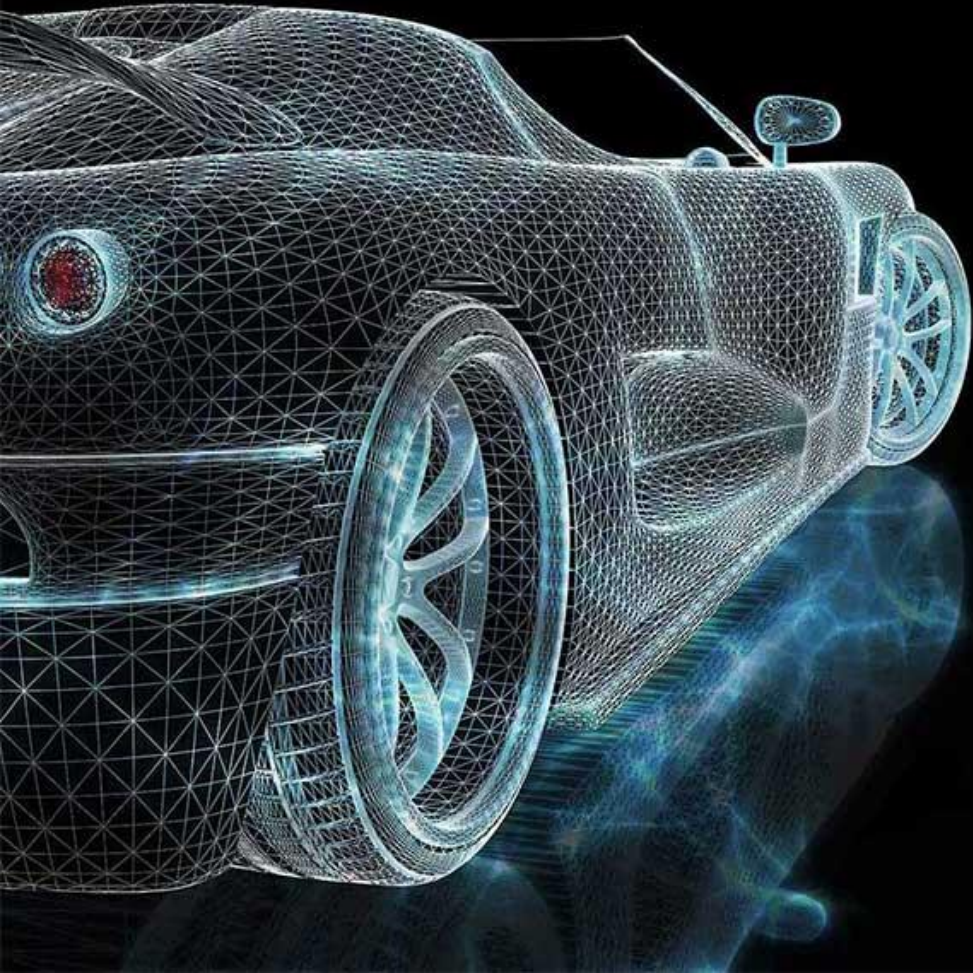
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# Agenda



**01** Financial Performance

**02** Industry Trends Favor Growth in SAI's Business

**03** World Leading Aluminum Forged Wheel Supplier for Luxury and Premium Automobiles

**04** Lightweighting is essential to xEVs

**05** The SAI Vision for Future Growth

**06** SAI Technology



A yellow sports car, possibly an Aston Martin, is shown from a side profile. It has a black roof rack and is parked on a paved surface. The background features a mountain range under a sunset sky. A dark blue diagonal overlay covers the left side of the image.

# Financial Performance

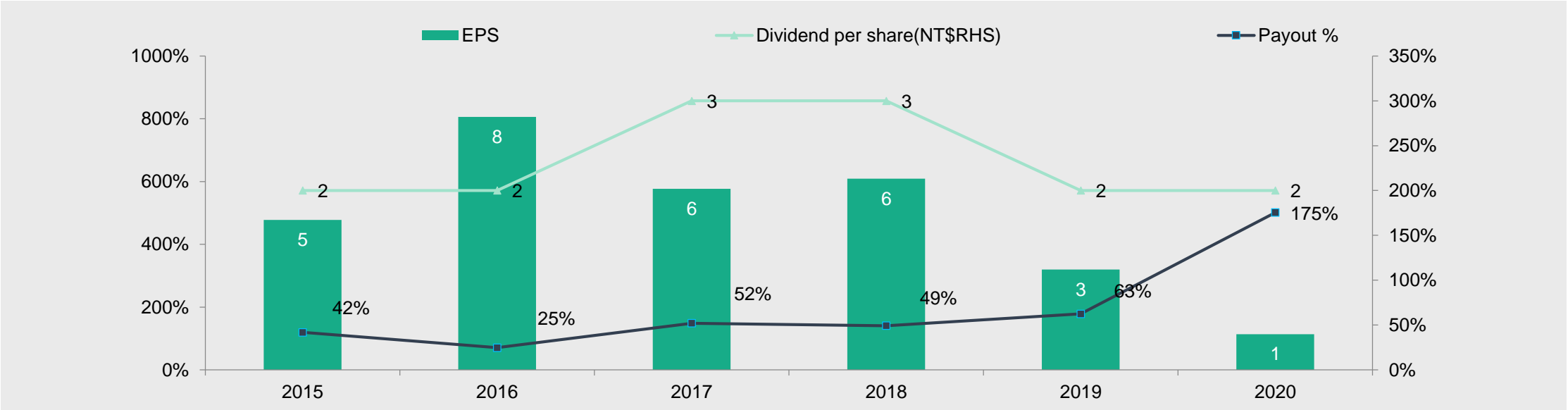
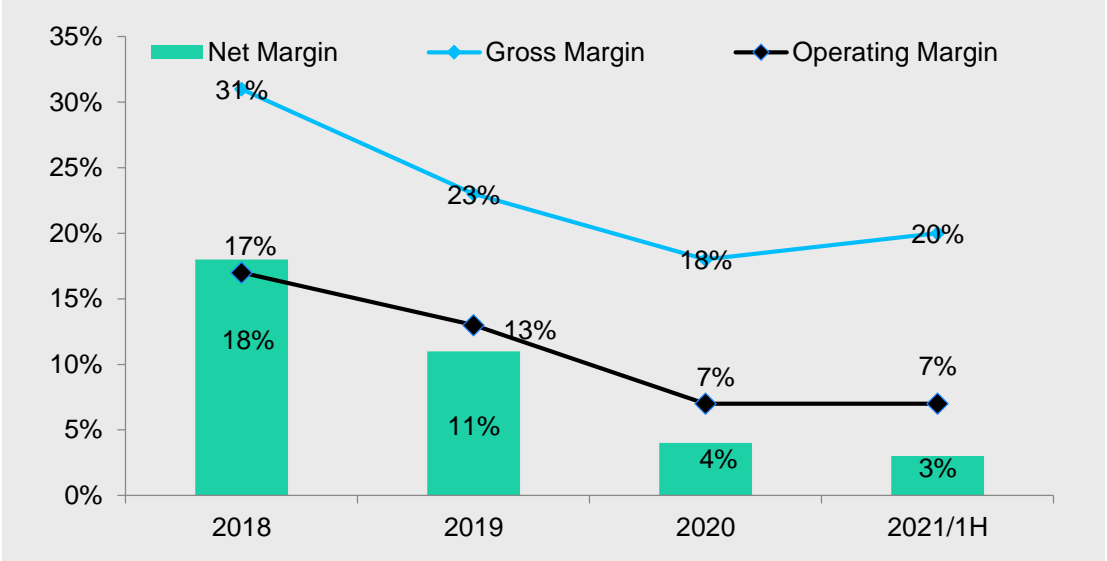
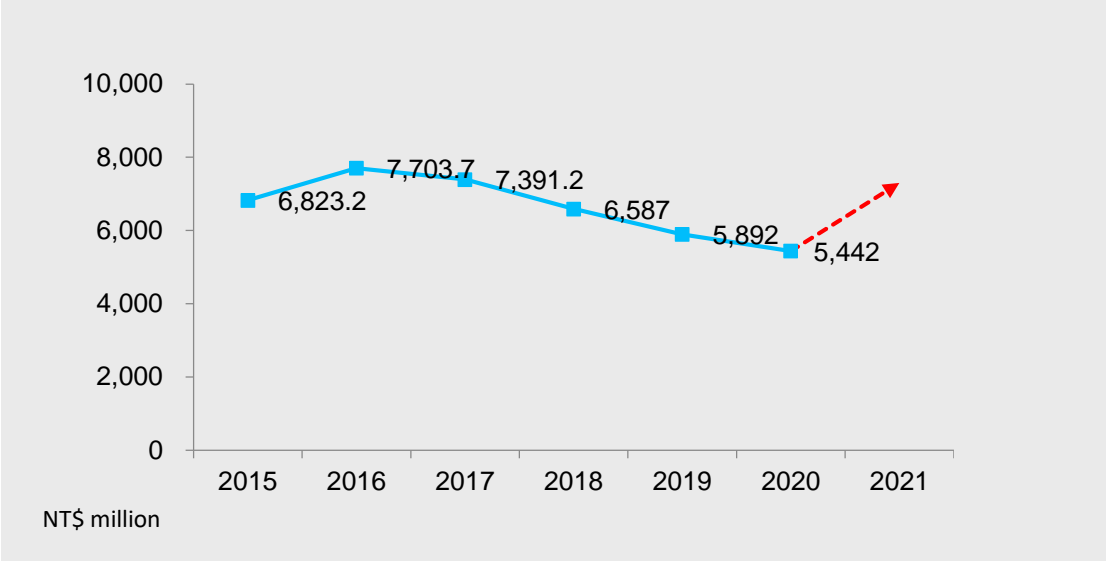
# 2021 v 2020 1H Performance

◆ YOY grew 61%, turned loss to profit

NT\$ million	2021/1H	2020/1H	YOY	2020/2H
Sales Revenue	3,788	2,355	61%	3,087
Gross Profit	749	48	1448%	943
Operating Profit	267	(272)	Positive	653
Income before tax	134	(232)	Positive	492
Net Income	114	(190)	Positive	412
EPS (NT\$)	0.58	(0.97)	Positive	2.11



# Key Financial Indicators



# 2019-2021/1H Balance Sheet

NT\$ million	2019	2020	2021/1H
<b>TOTAL ASSETS</b>	<b>16,982</b>	<b>16,820</b>	<b>16,456</b>
Cash	1,143	1,247	1,245
NR & AR	697	795	876
Inventory	4,986	5,072	4,960
PP&E	9,631	9,274	8,893
Others	525	432	482
<b>TOTAL LIABILITIES</b>	<b>9,576</b>	<b>9,580</b>	<b>9,500</b>
Bank Loans	8,232	8,238	7,612
AP	74	120	101
Others	1,270	1,222	1,787
<b>TOTAL EQUITY</b>	<b>7,406</b>	<b>7,240</b>	<b>6,955</b>
A/R turnover days	52	51	56
Inventory turnover days	99	108	140
A/P turnover days	79	78	77
Cash conversion cycle	72	80	119



# Industry Trends Favor Growth in SAI's Business





# Industry Trends Create Multiple Growth OPPs

## 1. IEA released *World Energy Outlook 2021*

Countries around the world have made carbon neutral commitments. Finland in 2035, Austria and Iceland in 2040, the European Union, Canada, South Africa, Japan, the United Kingdom, France, Denmark and other countries have committed to 2050, and China announced that it will be realized by 2060.

## 2. By 2026, automotive aluminum content will increase by 12% compared to 2020

According to Aluminum Association, it is confirmed that aluminum is the fastest-growing automotive material, and the content of each car is expected to increase to 514 pounds by 2026. The design evolution of lightweight structure is driving the development and demand of aluminum, and the market penetration rate continues to increase.

## 3. Automakers will apply more recycled aluminum parts to reduce carbon emissions

BMW requires suppliers to use more than 50% of recycled aluminum by 2025; JLR increases the proportion of recycled aluminum used, which can reduce the carbon emissions of the production process by 26% within a few years. Audi, Toyota, and VW have all launched plans to use recycled aluminum. **Compared with primary aluminum, secondary aluminum manufacturing can reduce energy consumption by up to 95%.**

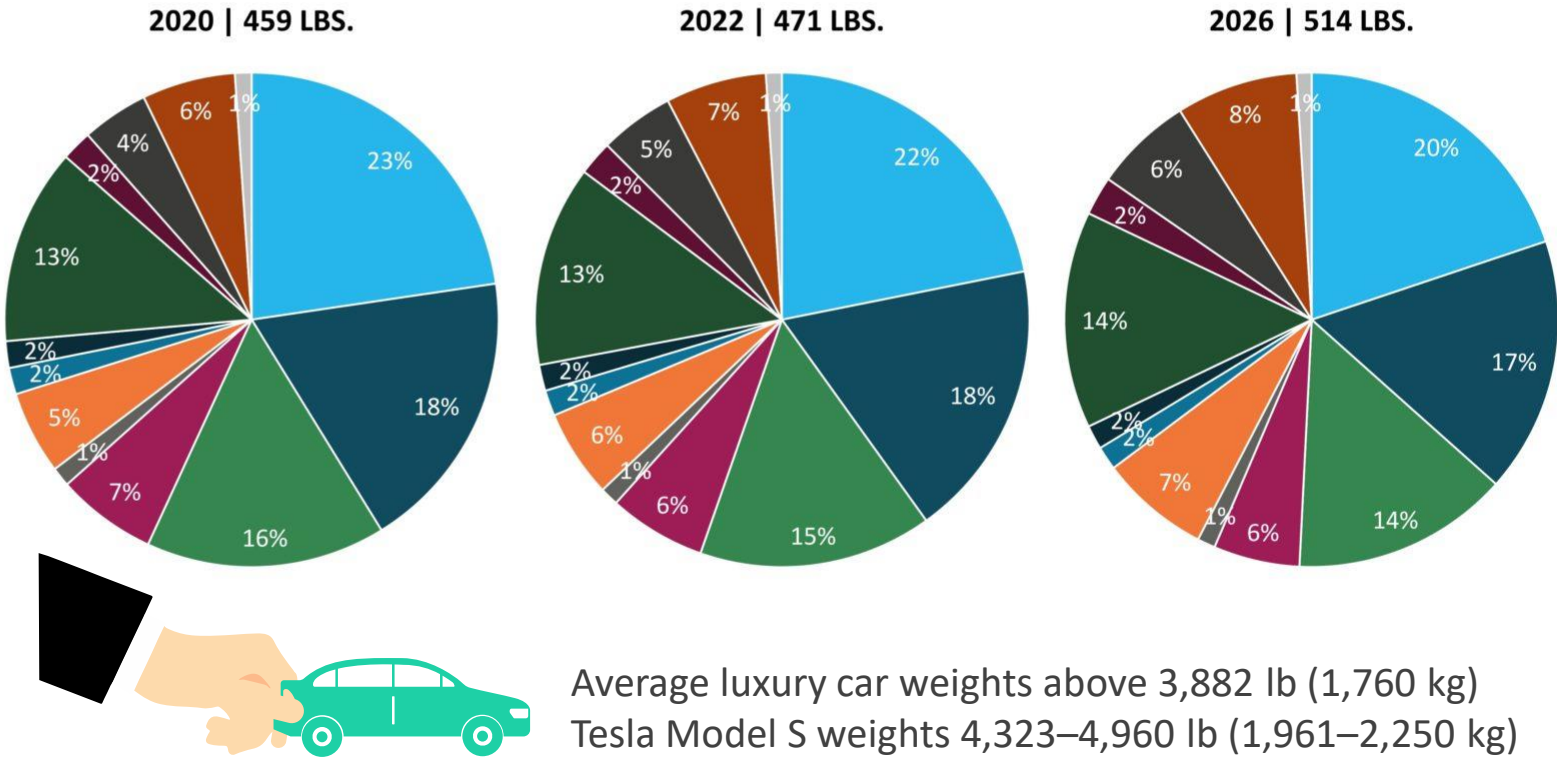


Source: Ducker Frontier  
Industry News  
2021/2022 Industrial White Papers

# Vehicles Will Use More Aluminum Components for Lightweighting

System PPV	2016	2020	2022	2026
Engines	110	104	103	102
Transmissions & Drivelines	83	85	86	86
Wheels	65	72	72	73
Heat Exchangers	32	30	30	29
Heat Shields	6	6	6	6
Suspensions/Cradles/Subframes	21	25	27	37
Steering Components	8	8	8	8
Brakes	8	8	8	8
Closures	41	59	62	73
CMS	7	9	11	13
Body Stamping	11	20	23	33
Other Body	14	28	31	41
All others	5	5	5	5
<b>Total</b>	<b>411</b>	<b>459</b>	<b>471</b>	<b>514</b>

As closures and body structures continue to grow in aluminum penetration, suspension components are also projected to increase in share. Parts dedicated to battery electric vehicles (e.g. battery box, motor housing, converter housing, BMS housing, etc.) will also expand its use of aluminum to offset weight gain.



Source: DuckerFrontier April 2020

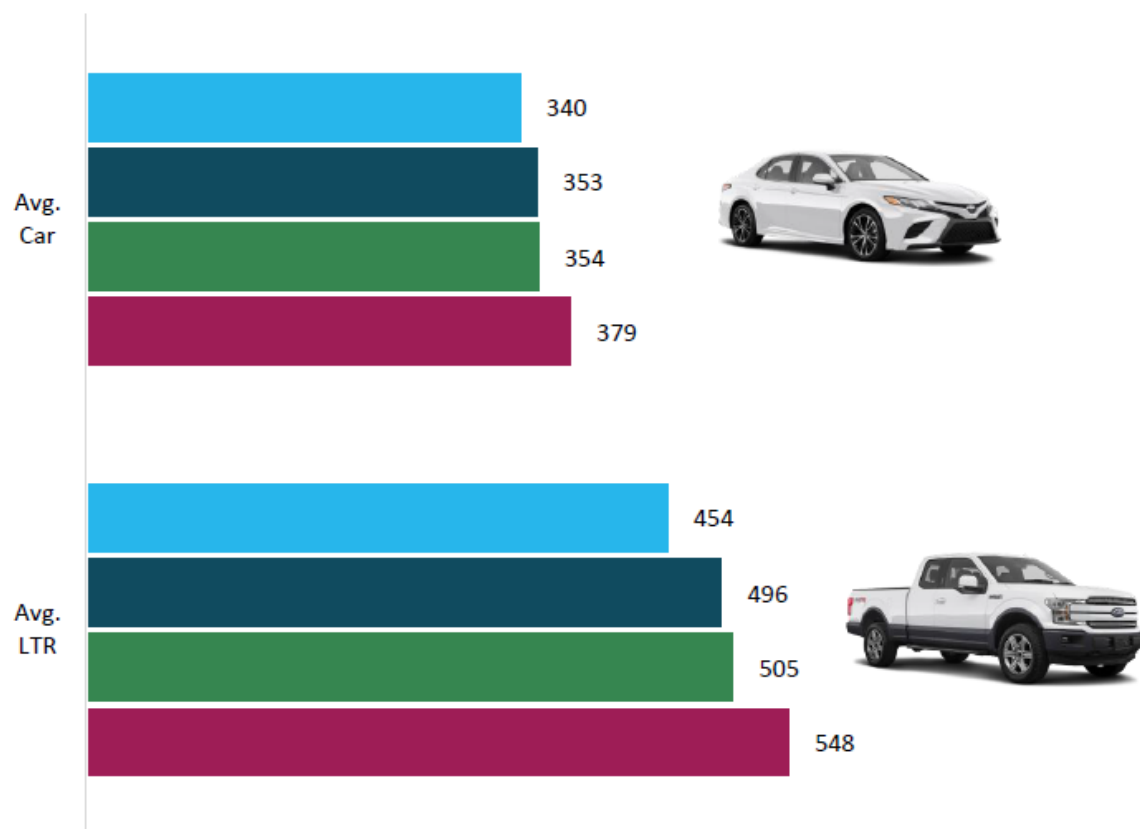
Source: [Ducker Frontier](#)



# D/E Segments and Sports Cars Use More Aluminum Components than Average to Achieve Lighter Weight, Safer and Better Handling

Vehicle Segments PPV

■ 2016 ■ 2020 ■ 2022 ■ 2026



Source: DuckerFrontier April 2020

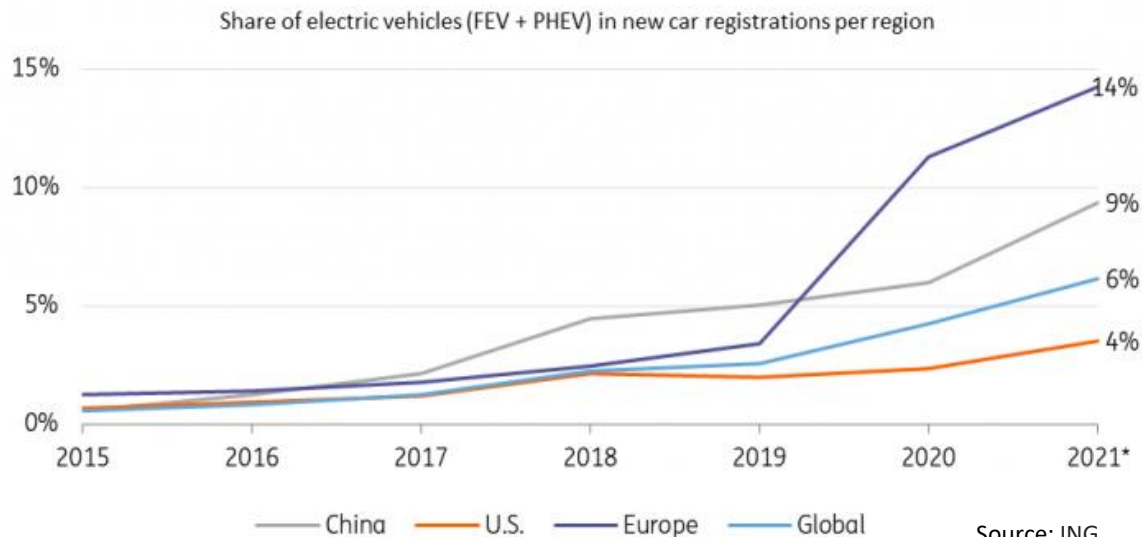
Segment	2016 PPV	2020 PPV	2022 PPV	2026 PPV
A Segment Car	297	304	N/A	N/A
B Segment Car	248	258	259	294
C Segment Car	285	270	278	288
D Segment Car	366	423	427	471
E Segment Car	537	519	626	834
Average Car	340	353	354	379
Segment	2016 PPV	2020 PPV	2022 PPV	2026 PPV
B Segment LTR	251	241	258	260
C Segment LTR	314	357	364	412
D Segment LTR	402	410	435	477
E Segment LTR	574	654	671	721
Average LTR	454	496	505	548
Segment	2016 PPV	2020 PPV	2022 PPV	2026 PPV
Total Average	411	459	471	514

Source: [Ducker Frontier](#)

# Global sales performance of new electric vehicles

## Europe leads the EV-transition followed by China and the US

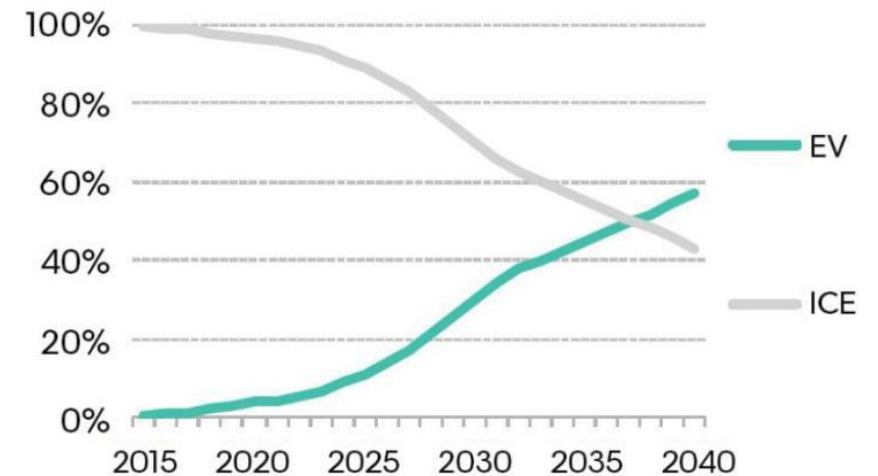
At the start of 2021, a mere 1% of the global rolling car fleet had a power plug (10 million units). The pandemic turned out to be an accelerator for the development and sales of EVs. BNEF expects the global share of EVs (full electric vehicles - FEV and plug-in hybrid electric vehicles - PHEV) in new sales to increase by 50%, from 4% to 6% in 2021, and rising further to 8% in 2022. Europe leads the world here, with EVs making up an expected 14% in new sales in 2021, followed by China (9%).



Bloomberg predicted annual EV car sales: 10 million in 2025, 28 million in 2030 and 56 million in 2040.

## Global EV and ICE share of long-term passenger vehicle sales

Share of annual sales



Source: BloombergNEF



A red Ferrari SF90 Stradale is shown from a rear three-quarter view, parked on a racetrack. The car is positioned on the left side of the frame, with its rear extending towards the right. The background features a sunset sky with orange and yellow clouds, and distant mountains. A dark blue diagonal overlay covers the left side of the image, containing the text 'Lightweighting is Essential to xEVs'.

# Lightweighting is Essential to xEVs

**SF90** STRADALE

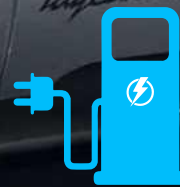




# 2019 Taycan

Front: 21x9.5 (13.609kg)

Rear: 21x11.5 (14.667kg)



**All-electric Car**

More than 20,000 Taycans were delivered in 2020, its debut sale year, representing 7.4% of the total Porsche volume.





# 2020 Bentayga



20x10 (17.241kg)



## Plug-in Hybrid Luxury SUV

The Hybrid models of Bentayga S and Bentayga Speed each feature their own imposing 22" wheel designs.

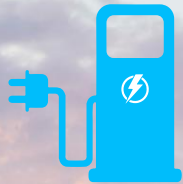


# 2021 Artura



Front: 19x8.5 (9.139kg)

Rear: 20x10.5 (11.024kg)



## Plug-in Hybrid Sports Car

The new McLaren Artura hybrid supercar is set for launch by the end of 2021, with McLaren referring to its new petrol-electric two-seater as its first 'High-Performance Hybrid' model.



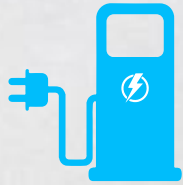




# 2022 296GTB

Front: 20x9 (12.469kg)

Rear: 20x11 (13.862kg)



## Plug-in Hybrid Sports Car

296 GTB was presented as the first "real Ferrari with six cylinders". The sports car is scheduled to go on sale in 2022.



# SAI Supplies **22** xEVs (**5** BEV : **17** PHEV)

Porsche Taycan 2x models (2019-至今)



Jaguar I-Pace (2018-至今)



BMW i8



Tesla Model X (2015-2018)



Tesla Roadster (2008-2012)



McLaren Artura



Ferrari Stradale



Porsche Panamera 4 E-hybrid



Volvo Polestar S60/V60



Range Rover SVA



Bentley Bentayga Hybrid



Lexus LC500 HEV



Porsche Cayenne E-hybrid



Acura NSX HEV





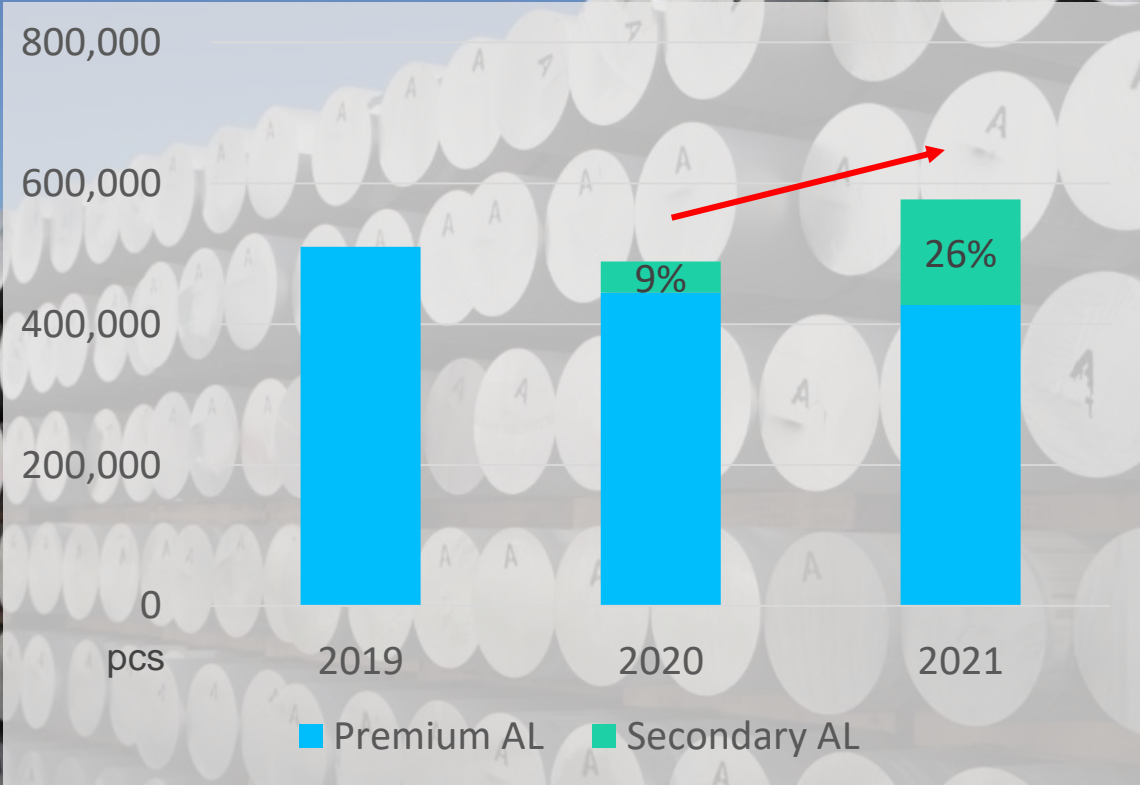
# Material Shortage, Inflation, and Automakers' Carbon Neutrality Goals Speed Up SAI's Secondary Aluminum Forged Wheels Demand

Caron Neutrality	Automakers
2030	Porsche, Bentley
2035	Toyota
2039	Daimler, JLR
2040	GM, Volvo
2045	Hyundai
2050	VW, Audi, Ford, RR, Nissan



資料來源: [Trading Economics](#)

★SAI Secondary Aluminum Forged Wheels  
Increase from 9% in 2020 to 26% in 2021





The background image is a dark, moody photograph of a Rolls-Royce vehicle. On the left, a large, multi-spoke aluminum forged wheel is visible, featuring the Rolls-Royce 'RR' logo in the center. To the right of the wheel, a portion of the car's body is shown, including a door handle with the 'Rolls-Royce' logo. The image is split diagonally by a semi-transparent dark blue overlay that contains the text.

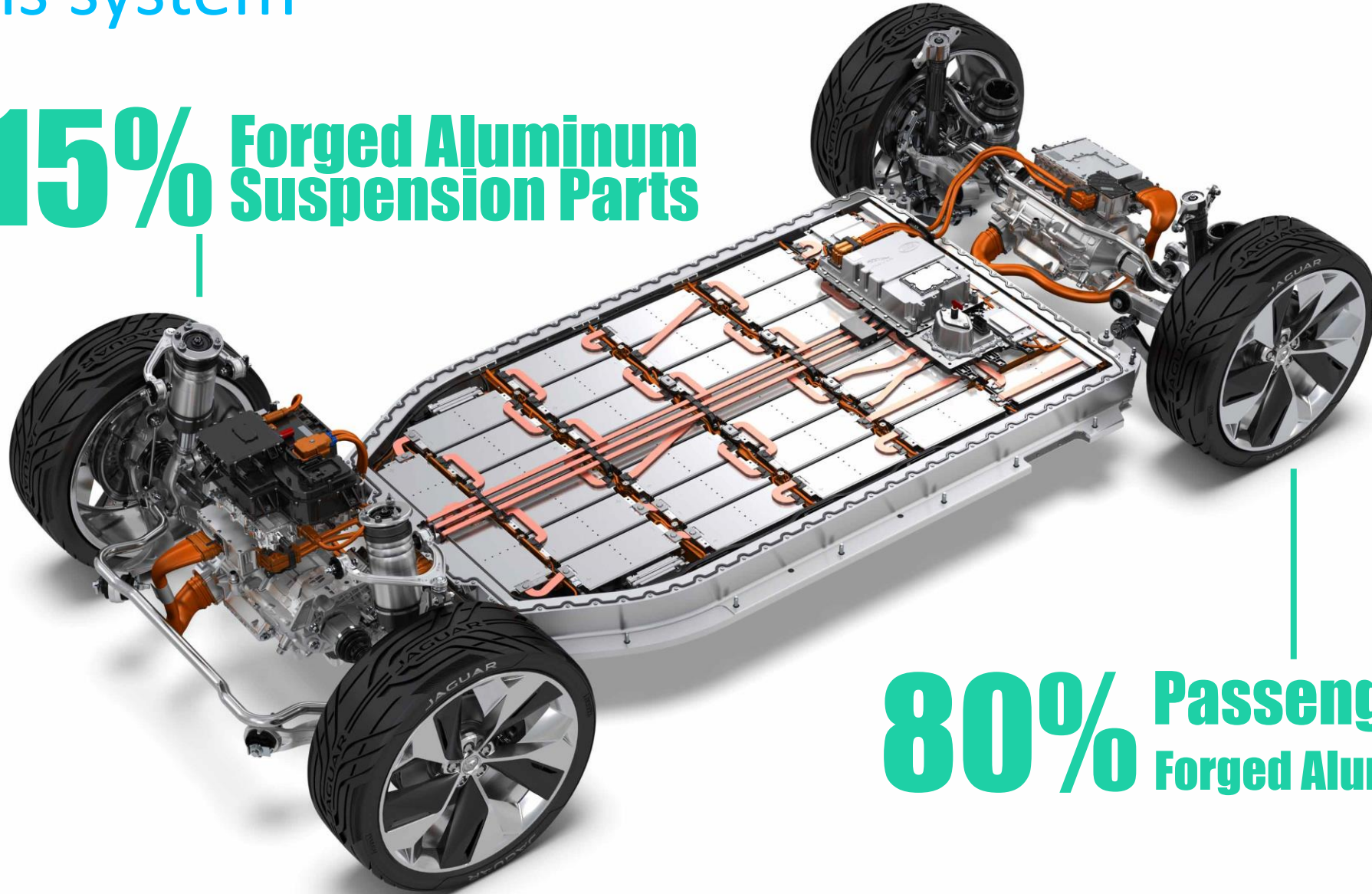
# World Leading Aluminum Forged Wheel Supplier for Luxury and Premium Automobiles



**For 2 decades, we specialize in the manufacture of lightweight alloy products for the automotive industry**  
**Forged wheels have historically been our key sales and profit driver**

Focus on the strongest key components of the chassis system

**15%** Forged Aluminum  
Suspension Parts

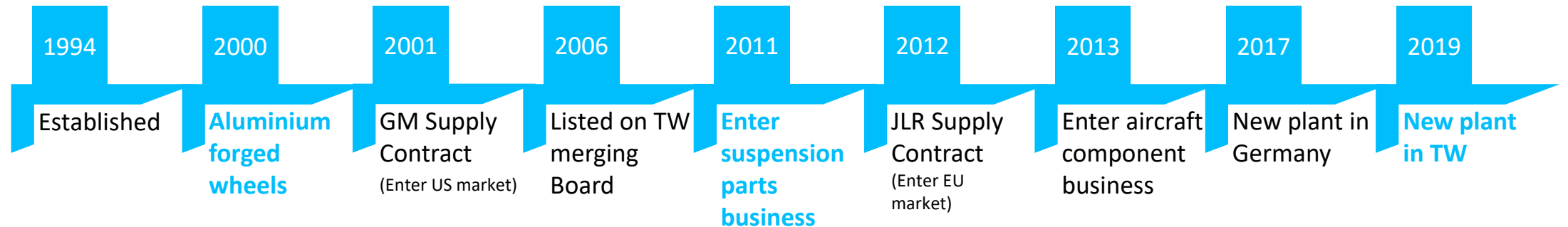
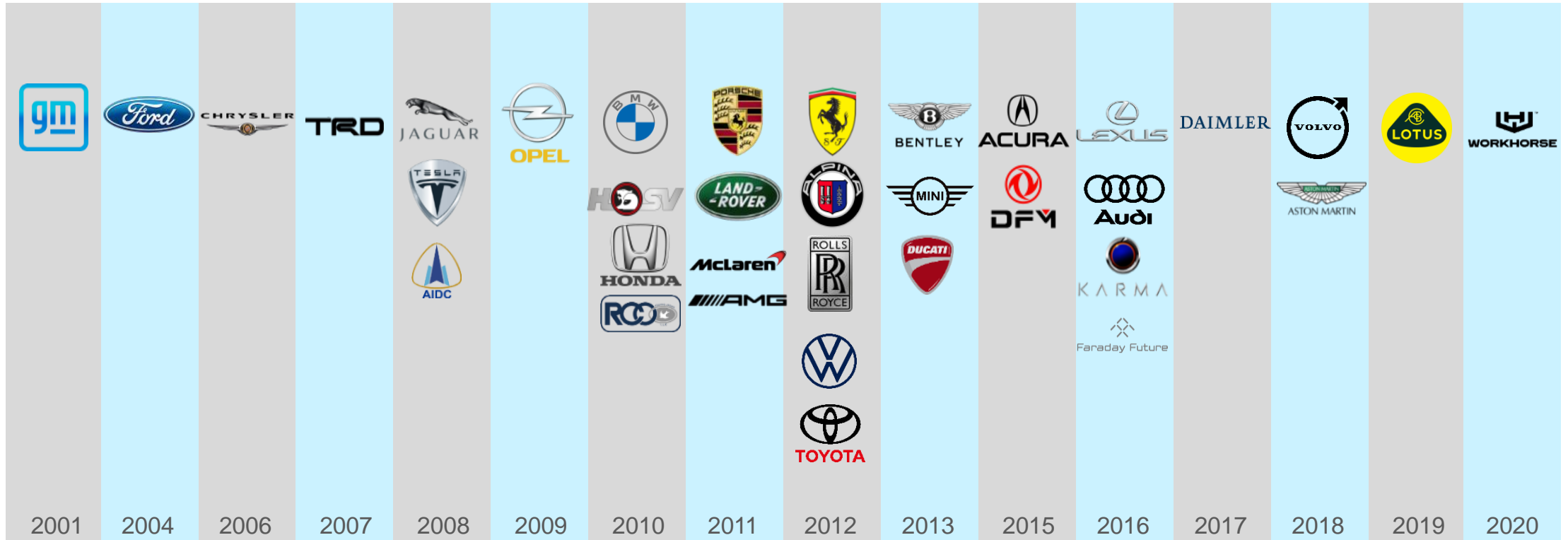


**80%** Passenger Vehicle  
Forged Aluminum Wheels



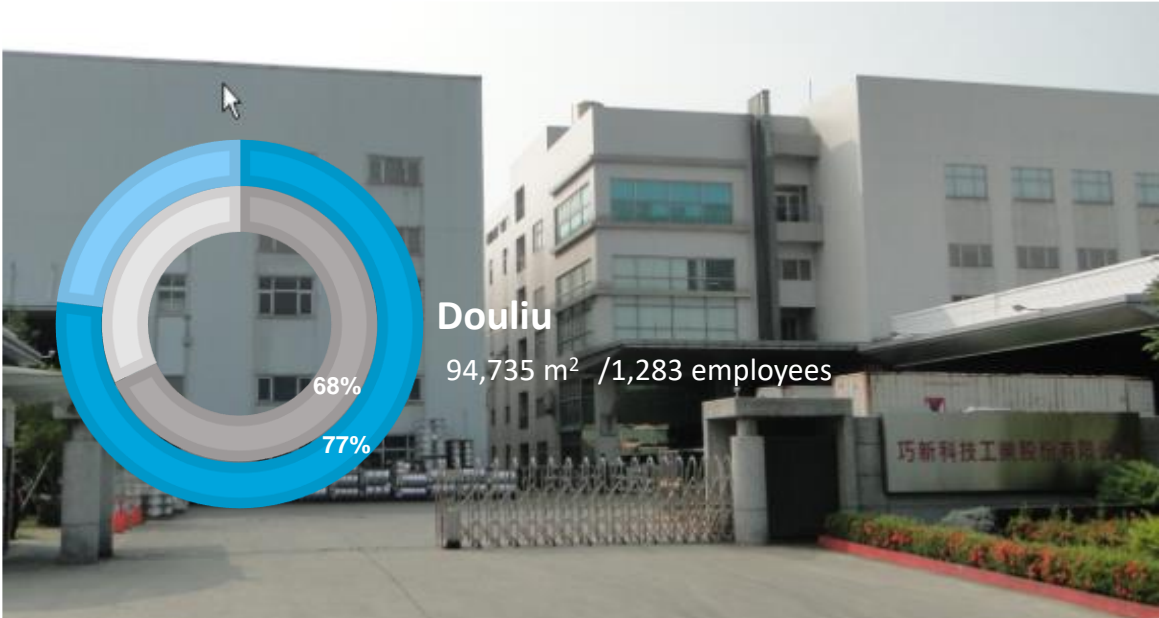
# Tier-One Supplier to Top Global Brands

- ◆ 2 decades of design and manufacturing experience
- ◆ Top 5 Clients are Jaguar Land Rover, BMW, Mercedes-Benz, Toyota and Porsche

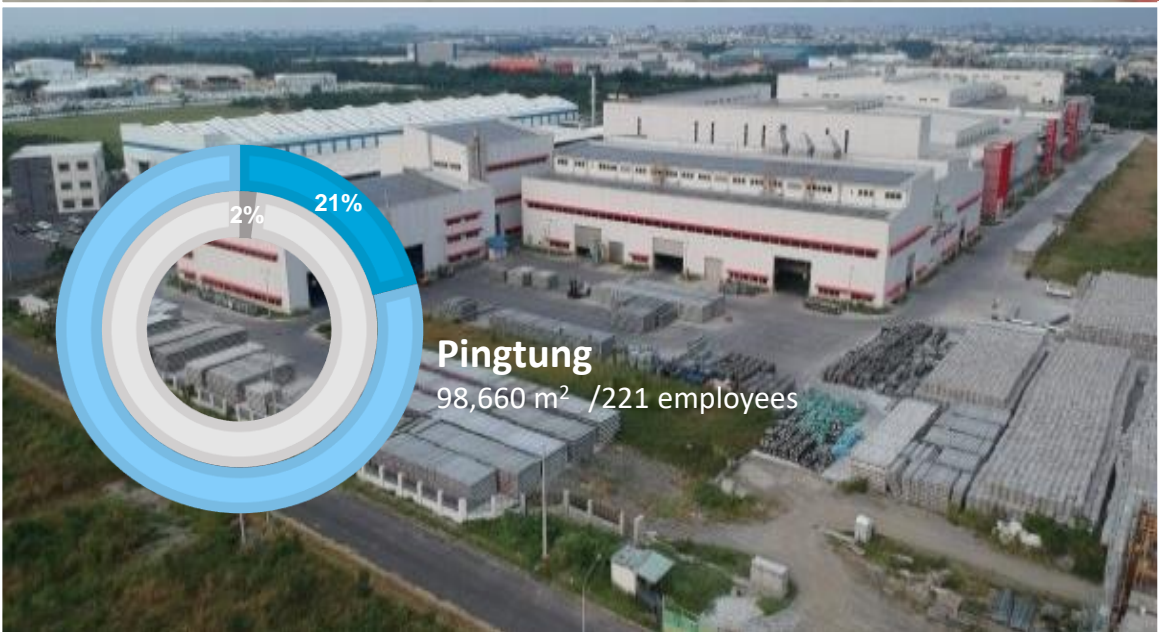


# SAI is Proudly Made in Taiwan

\*Staff accumulated till 2021 Nov  
2021 vs 2020 Capacity utilization rate



	Douliu	Pingtung	Freudenstadt
Forging	✓	✓	
Machining	✓	✓	
Polishing	✓	✓	
Painting	✓	✓	✓
Testing	✓		
Melting		✓	
Capacity(pcs)	700,000	300,000	100,000



# World-class Production Efficiency

SAI's excellent forged wheel manufacturing service:

- ◆ Support service of design, customization and pre-production
- ◆ Yield rate before painting process is above 97%
- ◆ Rigorous material, and functional and environmental tests to ensure the safety and highest quality of the wheel



## Forging

8,000 Ton Forging  
7,000 Ton Forging  
Flow Forming  
T6 Heat-Treatment



## Machining

Turning  
Milling  
Diamond-Cutting  
Dot Marking  
Laser Etching



## Polishing

Manual Grinding  
Robotic Grinding  
Dynamic (Vibration)-  
Polishing  
Physical (Mechanical)-  
Polishing



## Painting

Manual Painting  
Automated Painting  
Masking  
Powder Painting  
Liquid Painting  
Up to 6 Coats- 6 Bakes



# Extensive Testing Ensuring Safety and Quality

- ◆ Complete quality system and professional safety laboratory testing.
- ◆ Develop QA technology, testing processes and accumulate related big data.
- ◆ Continuous improvement to achieve higher quality standards and better services.
- ◆ SAI wheels adhere to international standards, including **VIA JWL INMETRO**



Bending Fatigue  
Radial Fatigue  
13 Degree Impact  
30 Degree Impact  
Bi-axial Test

Metrology Measurement      CMM  
Fatigue Material Test      Tensile  
Brinell hardness    ARL spark O.E.S.  
Vicker hardness    Rockwell hardness  
Metallography microscope



**Functional  
Tests**

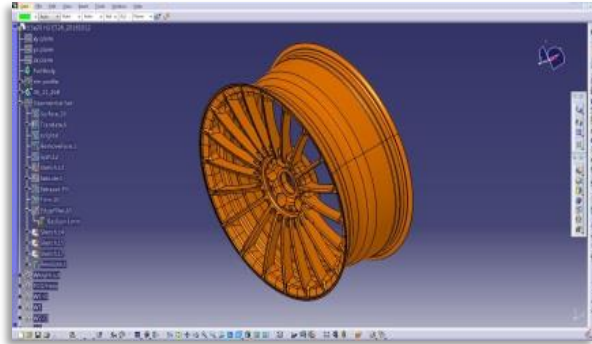
**Physical-  
Mechanical  
Tests**

**Environ-  
mental  
Tests**



CASS      Gasoline Resistance  
Salt Spray      Chip Resistance  
Thermal Shock      Solvent Rub  
Water Resistance      Cycle Crack  
Filiform Corrosion      Color  
Xenon (Weathering Resistance Test)

# SAI Design & FEA Capability

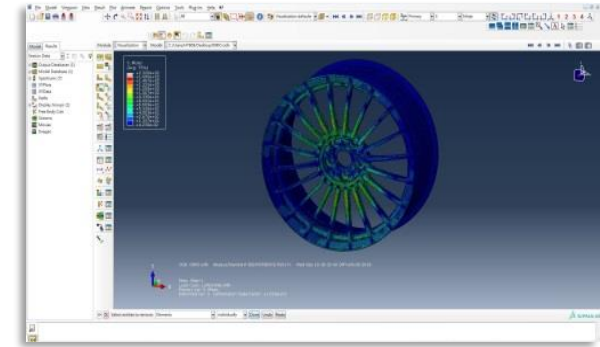


ABAQUS  
HyperWorks  
LS DYNA  
Fe-safe  
DEFORM  
FORGE  
Simufact Forming

Siemens NX (CAD/ CAM)  
CATIA V5-6 (CAD)  
Creo (CAD)  
Autodesk Inventor (CAD)  
MasterCAM (CAM)  
Autodesk Powermill (CAM)

**CAD  
CAM**

**CAE**



**Simulation  
Ability**

Radial & Rotary Analysis  
Impact Analysis  
Stiffness Analysis  
Natural Frequency  
Mold Flow



# Research & Development Capability

01

Microstructure-Processes-Properties  
Evaluation

02

Optimization on Forging Processes

03

Near Net Shape Forging

04

Composite Materials

05

Lightweight Magnesium Alloys

06

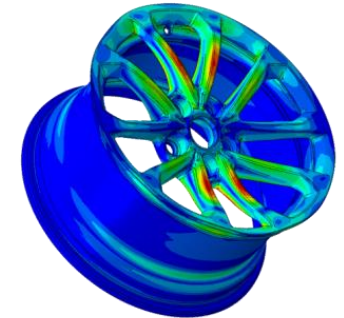
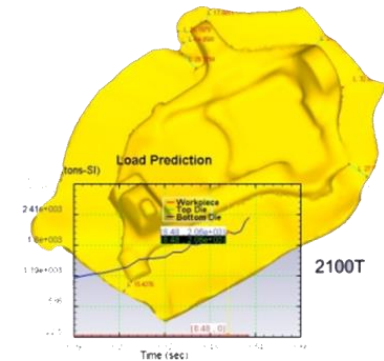
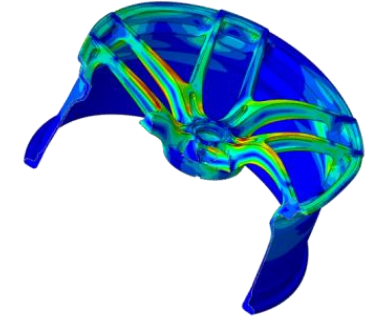
CAE/CAD Design on  
Chassis Products

07

Modularization of Automotive  
Structural Parts

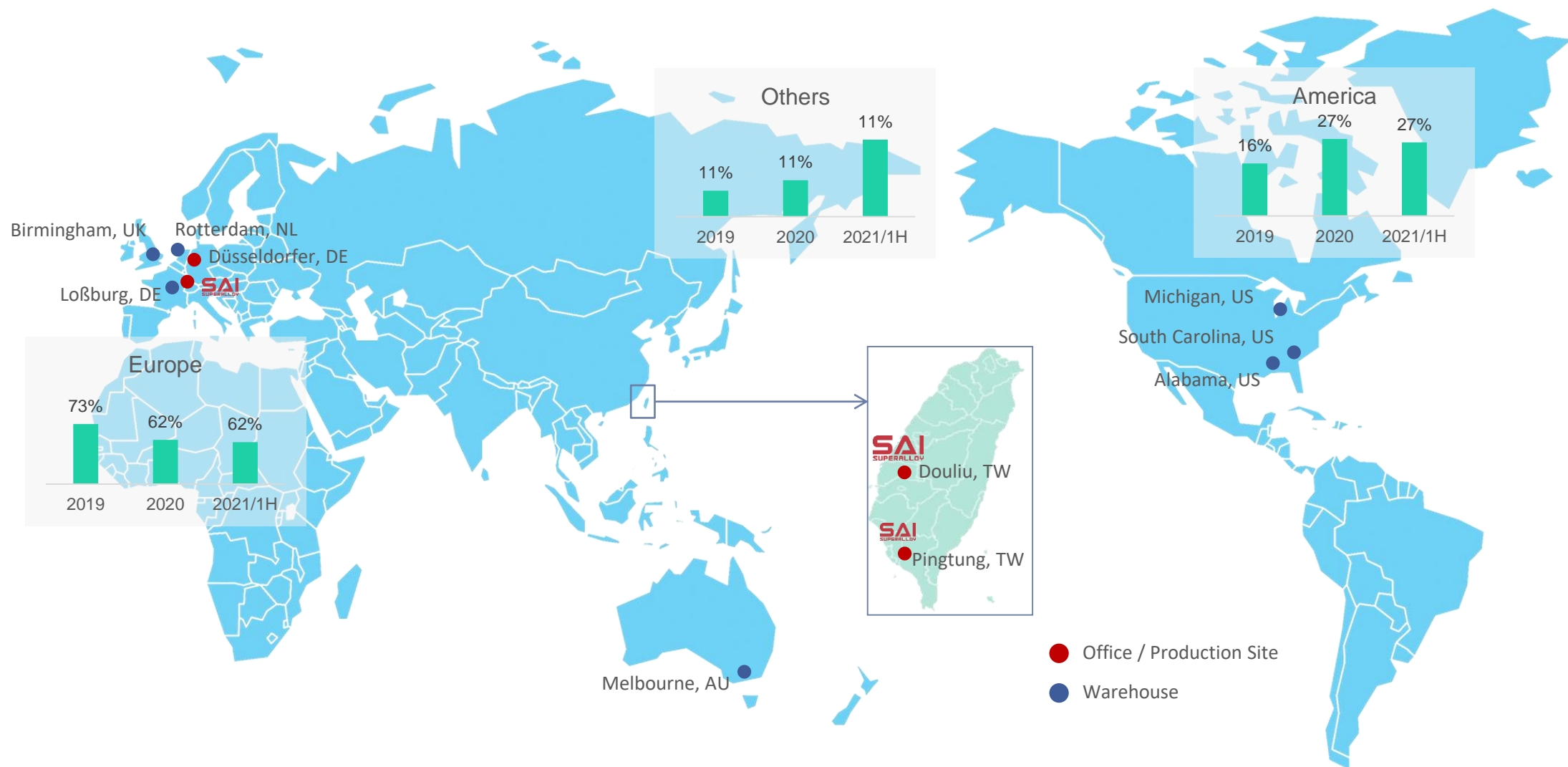
08

Automation Equipment Development



# Global Layout Aiming to the Market Trends

To support our brand customers, SAI has set up global sales, painting lines and warehouses, providing a consistently high level of service quality and supply reliability.





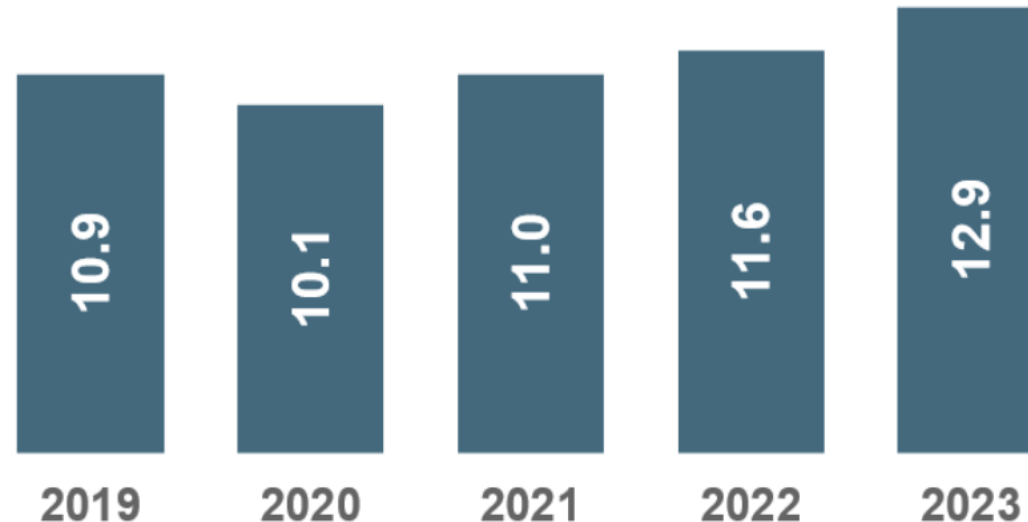


# The SAI Vision for Future Growth

# Premium Segment is Outgrowing Overall Market

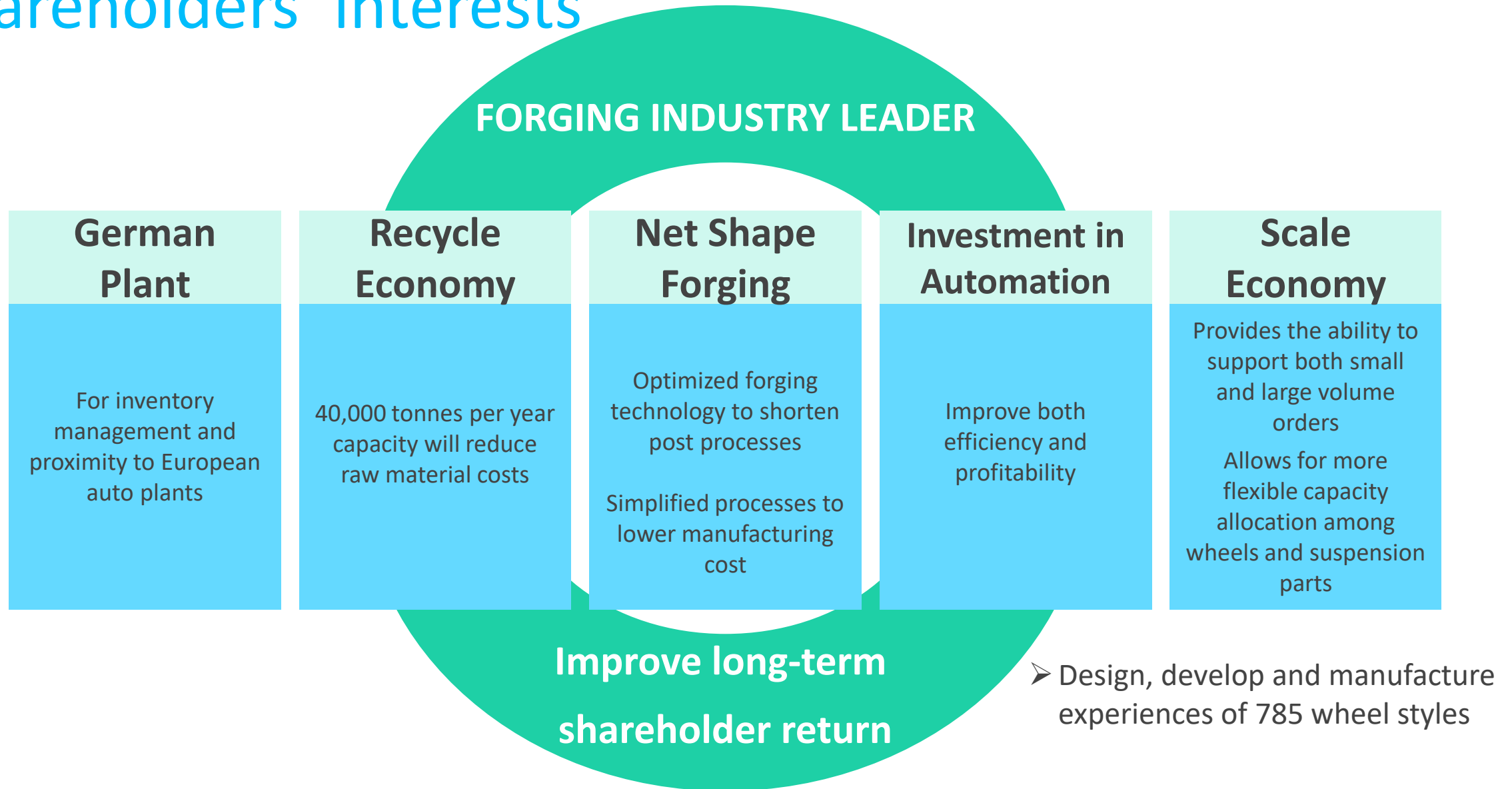
- ◆ Due to chip shortage, OEMs have ensured that the most profitable products will continue to roll off production lines at the expense of lower-margin stablemates.
- ◆ Customers of higher-priced vehicles tended to be more insulated during the pandemic, with incomes less disrupted and sources of wealth, such as the stock market and property markets, holding up well.
- ◆ This pecking-order advantage is supporting global Premium/Super-Premium market share, which is collectively set to climb by two percentage points between 2019 and 2021 to 16% of global Passenger Vehicle sales.
- ◆ In terms of the segment's sales volume, 2021 is expected to match pre-pandemic 2019 record levels, despite overall Light Vehicle sales still being 11% off the pace set in 2019.

Chart: Global Premium/Super-Premium Sales Forecast (millions, units)

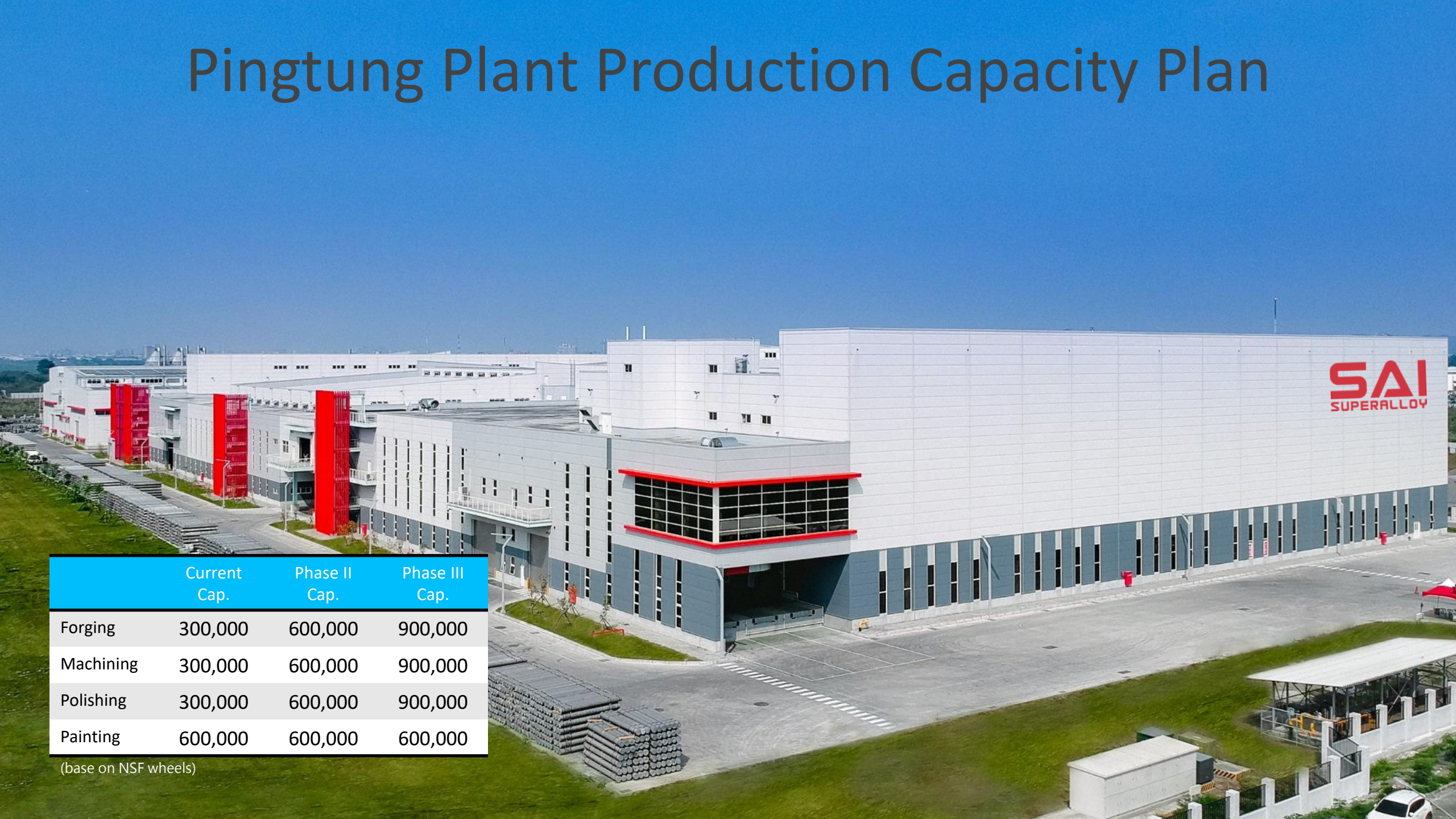




# SAI strengthens competitiveness and maximizes shareholders' interests



# Pingtung Plant Production Capacity Plan



	Current Cap.	Phase II Cap.	Phase III Cap.
Forging	300,000	600,000	900,000
Machining	300,000	600,000	900,000
Polishing	300,000	600,000	900,000
Painting	600,000	600,000	600,000

(base on NSF wheels)



# SuperAlloy Industrial v2.0 Strategy



Solution Provider of Forged Products in Mobility Industry



**Recruitment  
and  
Retention**



**High Quality  
Safe and  
Lightweight  
Products**



**Advanced  
Engineering  
and Material  
Technology**



**Intelligent  
Plant**



**Global  
Allocation**



**Corporate  
Social  
Responsibility**

Thank you

