



Innovative solutions for tomorrow

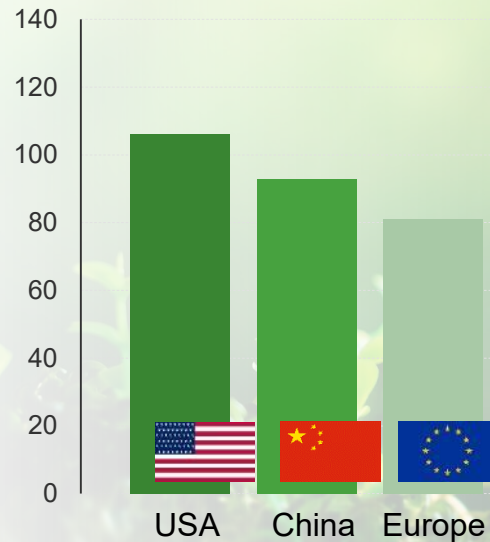
GF Casting Solutions

**Empowering sustainable mobility**

# Climate Change is driving very ambitious emission goals ...

## Limit global warming to 1.5°C

### Targets for 2025 [in g CO<sub>2</sub>/km]



# ... leading to key market trends: electrification and sustainability ...

## Focus of today's presentation



Light vehicles



Sustainability



Alternative mobility



Large castings



Commercial vehicles



Sustainability



Lightweight



Alternative mobility



Off-highway



Sustainability



Substitution of other technologies



Aerospace



Sustainability



Time to market



Industrial gas turbines



Sustainability



Change to hydrogen

# ... and the most relevant automotive markets is facing new and discrepant regulations ...



By 2030, US administration aims for a **50% EV share** of new car sales



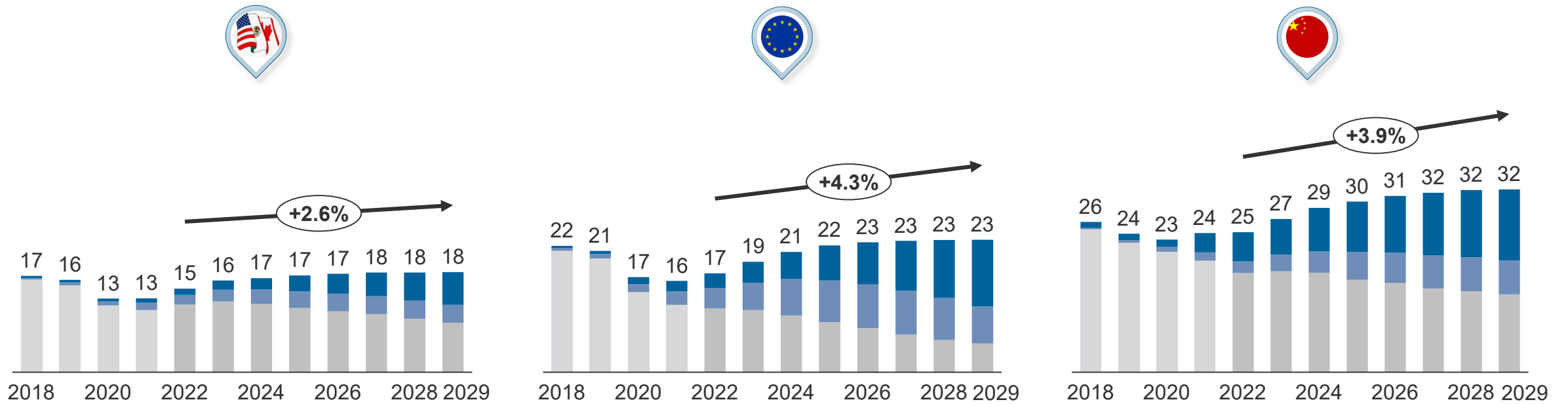
Sales of new combustion engine cars **banned by 2035**



By 2030, **40%** of vehicle sales to be electric (2035: 50%)

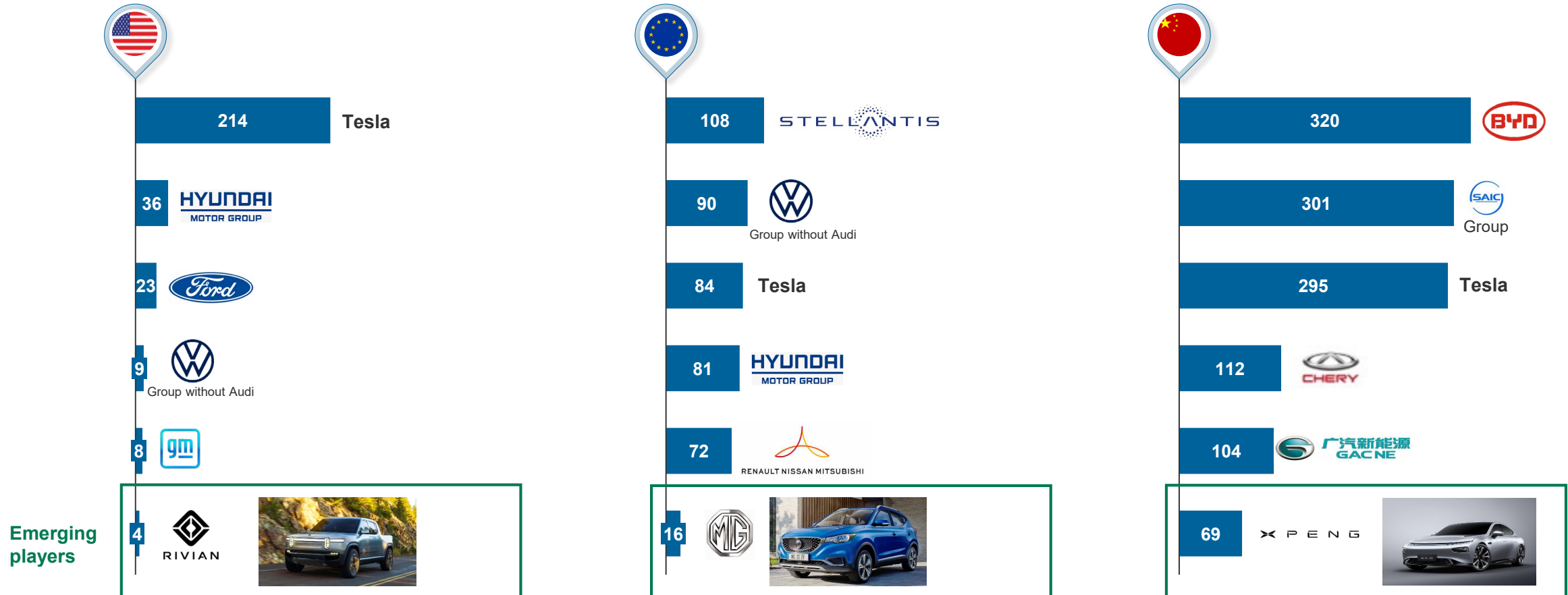
# ... while the EV market is growing at completely different pace in the most relevant regions ...

Light vehicle production by drivetrain (in million units) ■ EV ■ Hybrid ■ ICE



# ... emerging new players continue to establish beside mature OEMs

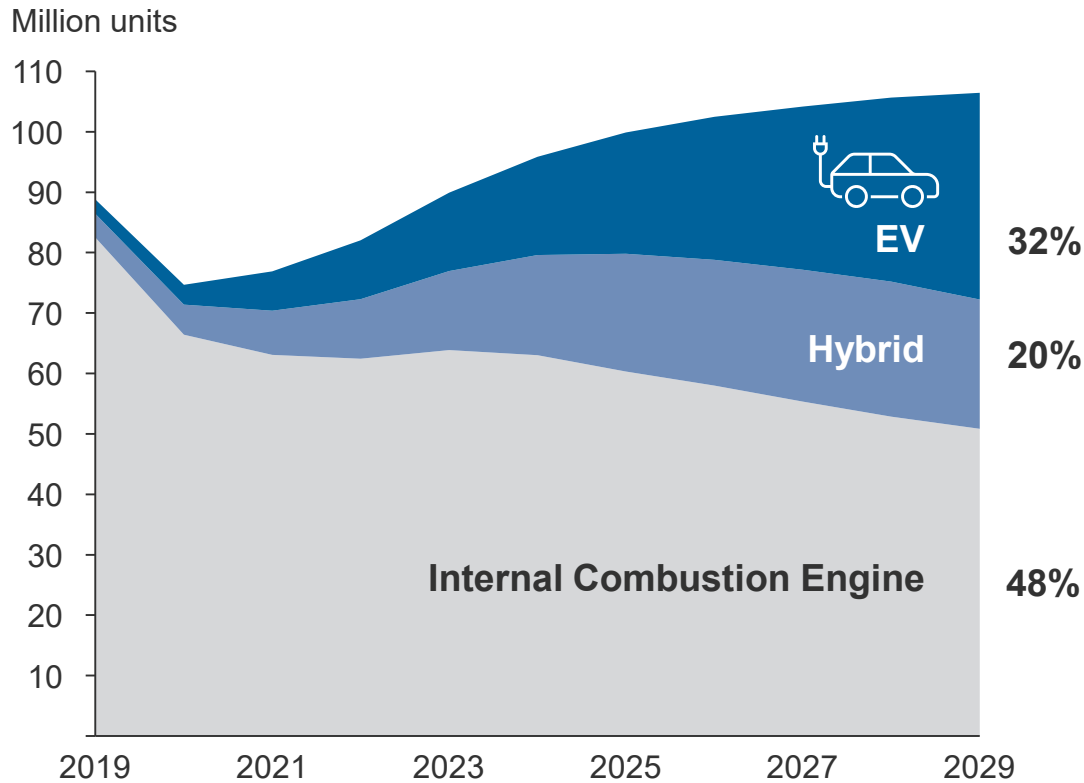
Battery electric vehicle sales (First half-year 2022, in '000 units)



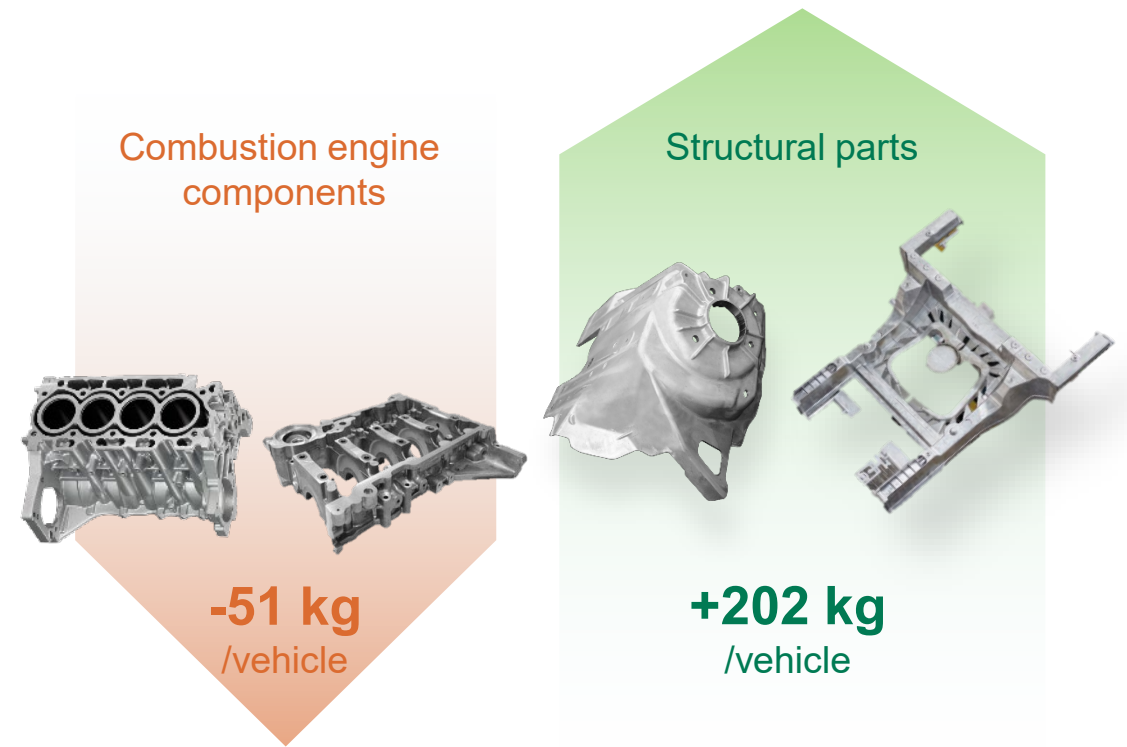
Emerging players

# The shift to E-mobility demands a higher share of lightweight components ...

E-mobility has reached the tipping point

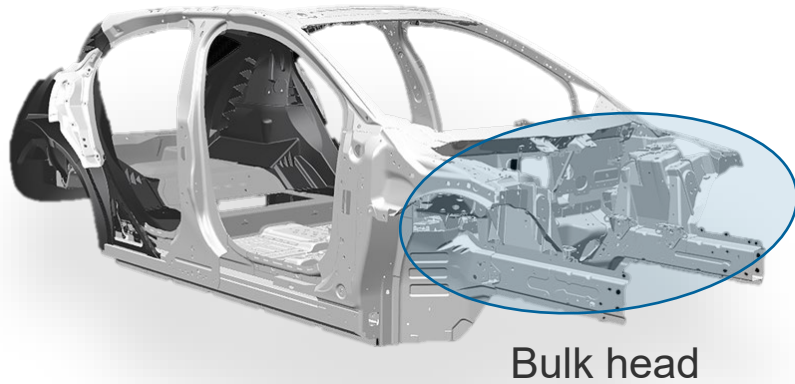


Battery electric vehicles demand a higher share of lightweight components



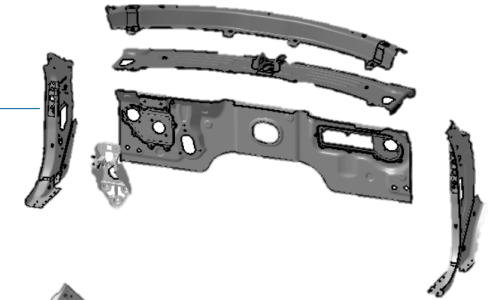
Source: Ducker 2019 / Change of European premium brands

# ... which can be fulfilled with high-pressure die-casting structural components



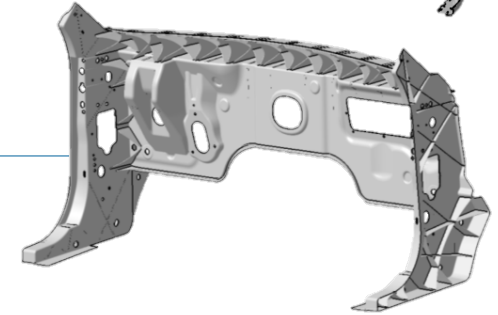
## Current solution

Assembled sheet metal



## Single-part casting concept

In high-pressure die-casting



Reduction of Capex at the customer & supplier due to lower complexity



Weight reduction  
▪ Increase battery range



Reduction of CO<sub>2</sub> emissions  
▪ Lightweight design  
▪ Reduction of production steps



# Traditional and emerging OEMs are in need for partners to develop new platforms

## Traditional OEMs



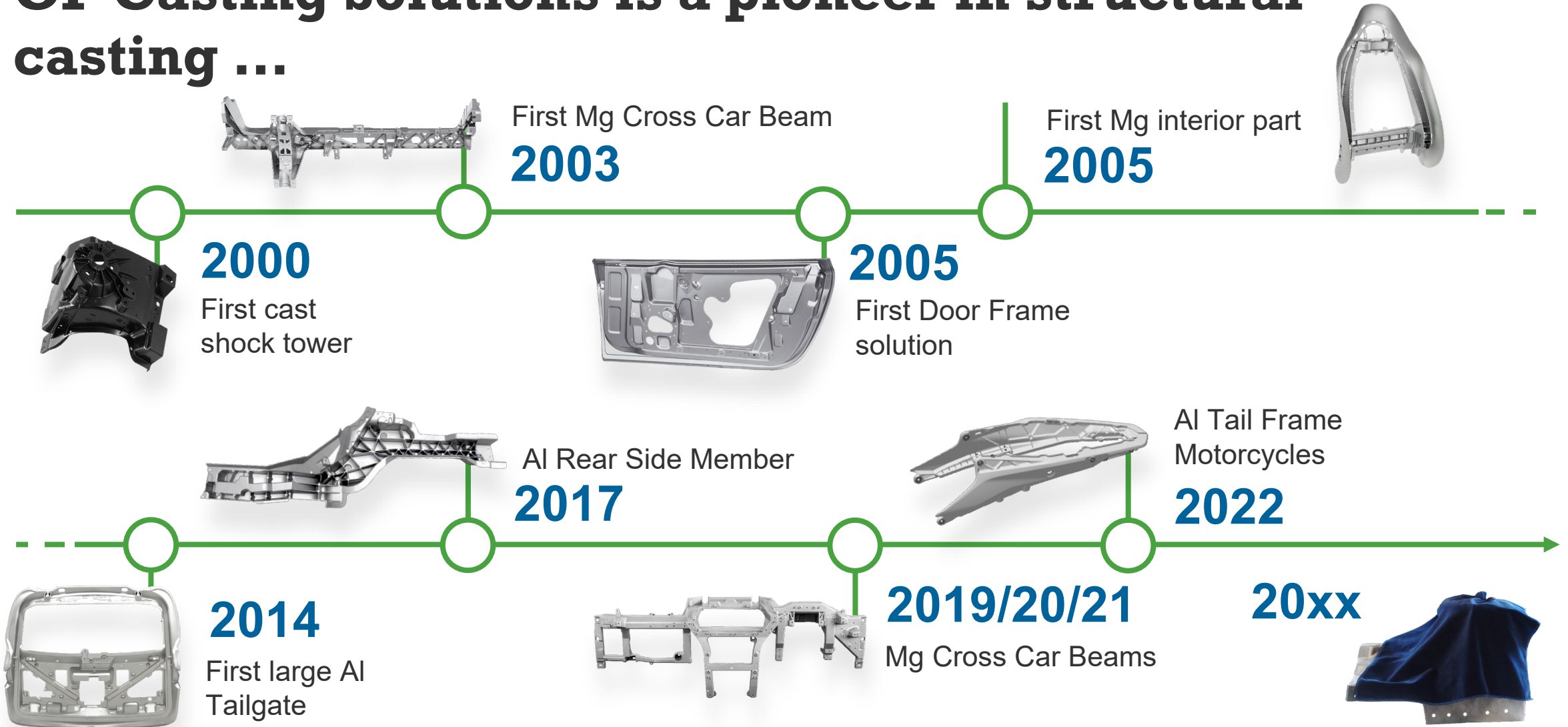
## Emerging OEMs



Tesla



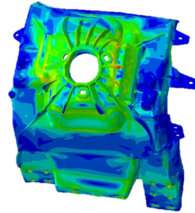
# GF Casting Solutions is a pioneer in structural casting ...



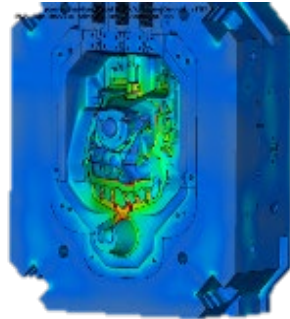
# ... and recognized as the innovation partner to master the EV disruption ...



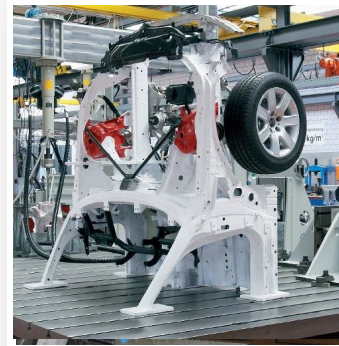
Early involvement



Product engineering & simulations



Tool concept & manufacturing



Validation



Industrialization: from casting...



...to final solution

## Vehicle Development



Concept phase



Pre-development



Serial development



Start of production

# ... driving the innovations of future platforms ...

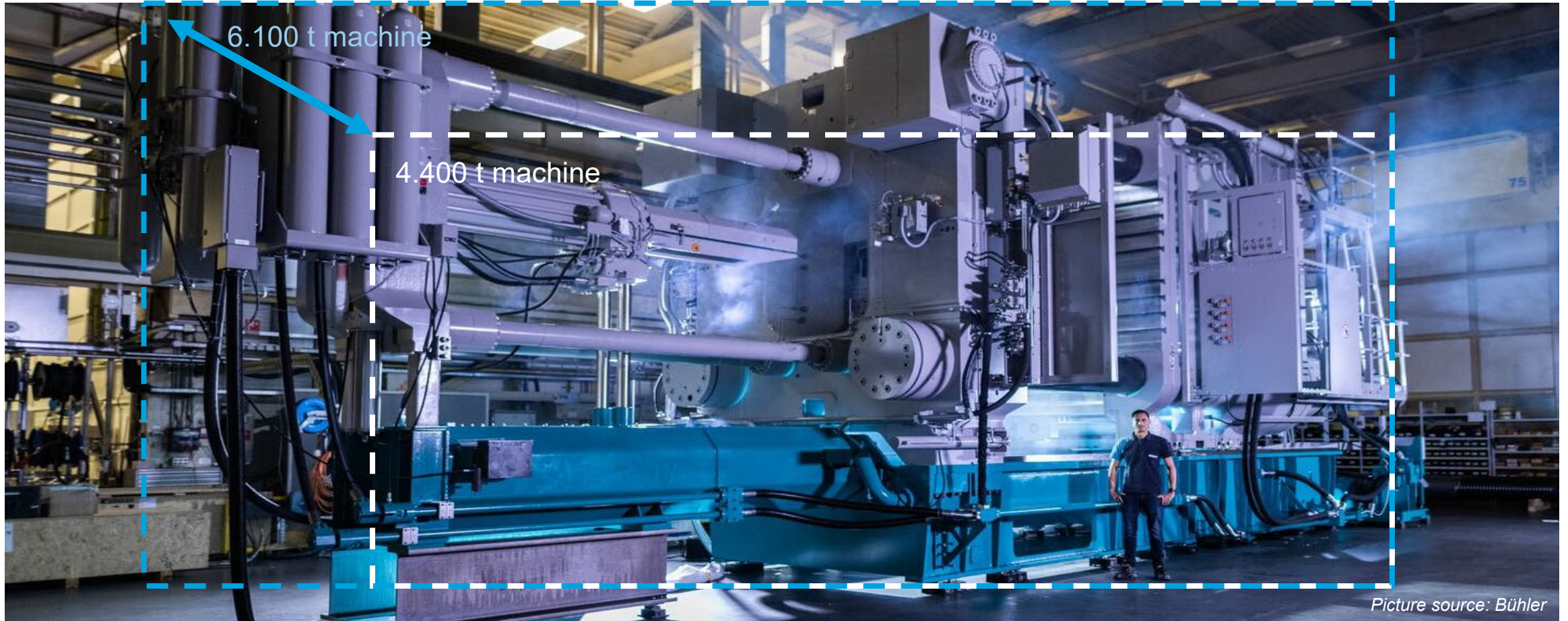


Co-development & production of high-pressure die-casting **tool** at GF meco eckel:



Picture source: Volkswagen AG

# ... and exploiting full potentials of the technology ...



Picture source: Bühler

# ... awarded among its customers

**2018**  
**GF Altenmarkt**  
JLRQ Award



JLR Front End Carrier

**2018**  
**GF Leipzig**  
CLAAS Supplier Award



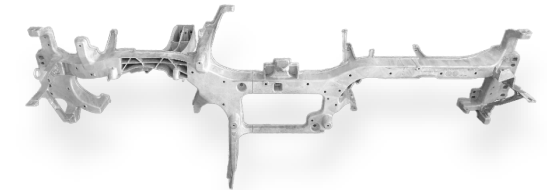
Dozer Drive Wheel

**2020**  
**GF Suzhou**  
Volvo Quality Excellence Award



Volvo Shock Tower

**2022**  
**GF Casting Solutions**  
CCB Mercedes S-Class



Crosscarbeam Mercedes S-Class

# Showcase presentation: Frank Gensty, Head of Technology GF Casting Solutions



**Frank Gensty**  
Head of Technology

A futuristic car is shown in a server room. The car is rendered with a glowing blue wireframe overlay, highlighting its internal structure and components. The background features server racks with lights and a woman in a light blue shirt looking at her phone. The overall scene is dimly lit with a blue color palette.

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**Thank you**