



MINISTRY OF
TECHNOLOGY AND INDUSTRY

Is the future only electric? Motoring at crossroads again.

Prof. Dr. László Palkovics

Minister, Ministry of Technology and Industry

Challenges of the automotive industry

1.

Zero emission

2.

Sustainability

3.

Production of renewable fuels

4.

Changing consumer habits

5.

Shortage of chips and auto parts

6.

Challenges in competitiveness

7.

Wars – US trade war, Russian-Ukrainian conflict

8.

Challenges in technology

9.

Pandemic situation

10.

Increasing energy prices

Each German premium car brand has a factory (and R+D capacity) in Hungary



**Audi in Győr since
1993**



**The most modern
Mercedes factory in
Kecskemét**



**New BMW factory in
Debrecen (an
investment of EUR 1
billion)**



**Jaguar:
new K+F centre in
Budapest**

Automotive industry: diverse and numerous suppliers

15 of the world's TOP 20 TIER1 suppliers and more than 40 of the world's TOP 100 TIER1 suppliers



49 indirect suppliers in the field of tool, machinery and equipment manufacturing

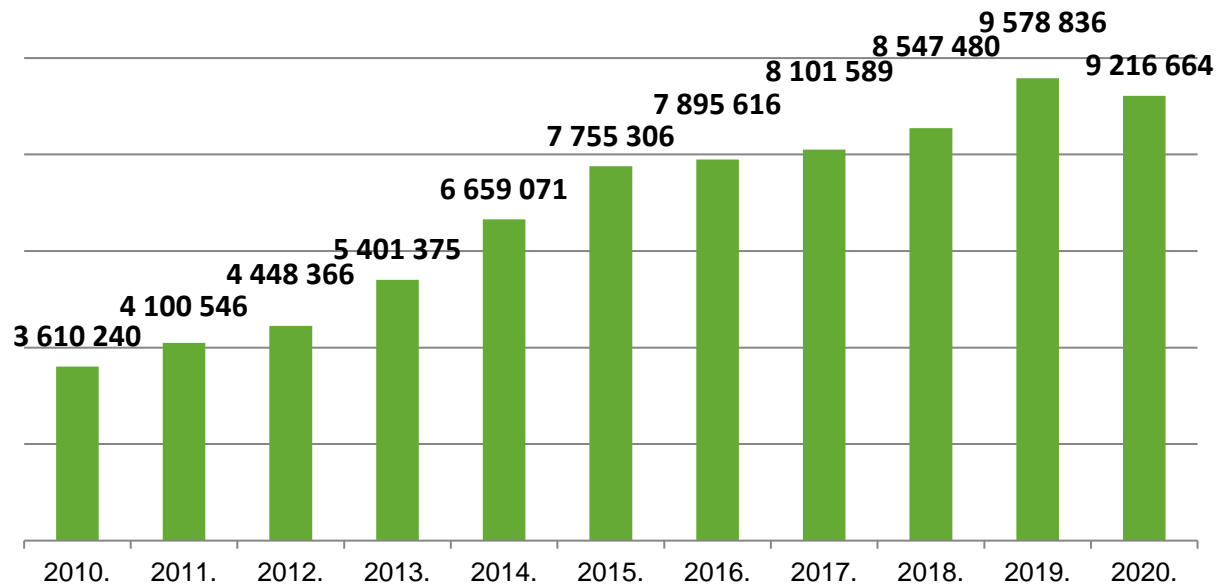
Tire manufacturing

Tier2 and +



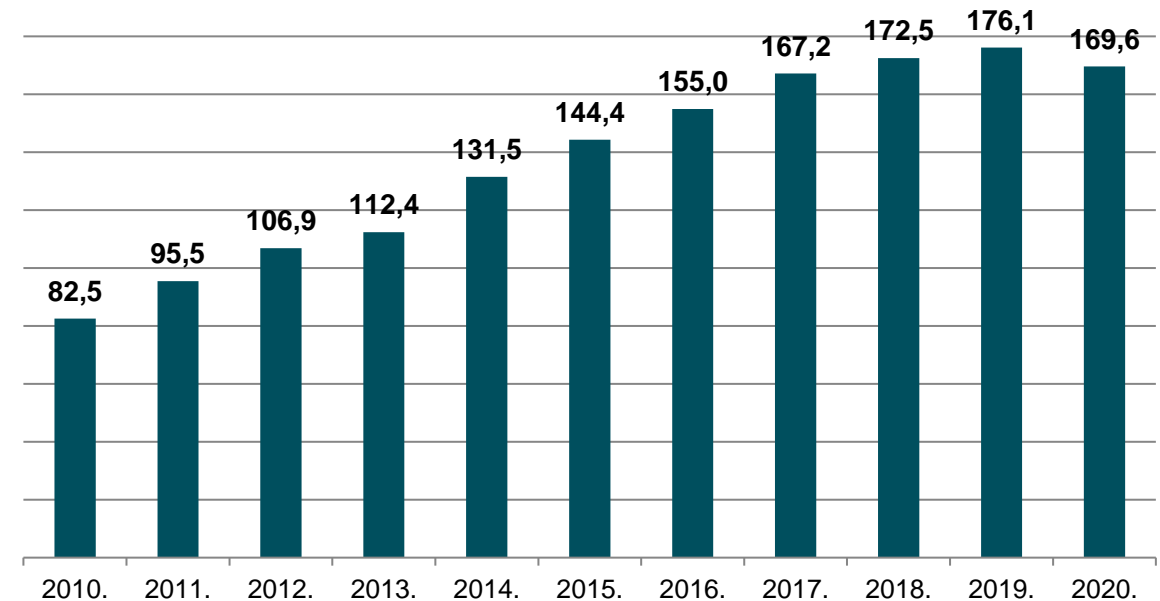
The growth of the Hungarian automotive industry

Automotive industry production (current prices, HUF million)



From 2010 to 2019, a continuous and significant increase can be observed in production and in the number of employees. This ensures the creation and preservation of jobs. The economic situation remained stable in the sector despite the outbreak of the Covid-19 epidemic in 2020. Our investment support programs also play a key role in the growth since 2010 (the most important investments in the industry in the past period: BMW, Mercedes-Benz, Bosch, Continental, Vitesco, SK Innovation, Doosan, Semcorp, Lotte, etc.).

Number of employed (thousand people)



The domestic vehicle industry...






- ...employs ~175 thousand people,
- ...has a currently a production value of ~ €26.2 billion,
- ... provides a 45-50% rate of domestic added value

Vision

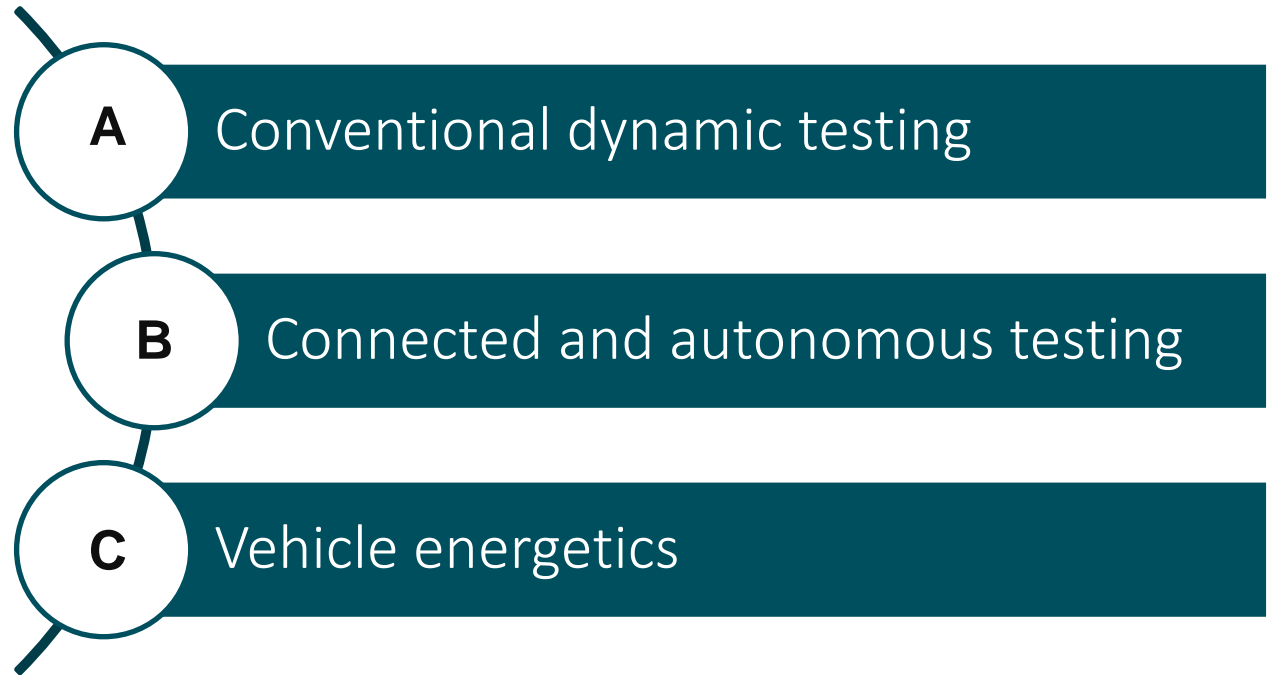
- ▶ All premium manufacturers test on the largest test track in Europe, **ZalaZONE**.
- ▶ By 2030, **all the German premium manufacturers** (Audi, BMW, Mercedes) will be producing and developing.*
- ▶ Hungary is at **the forefront of the transport of the future** in Europe.
- ▶ Besides Germany, Hungary is the **European centre for battery production**.



Hungary is building a multi-layered autonomous transport ecosystem

5	Mass source traffic Cloud	<ul style="list-style-type: none">▪ Cloud and fog computing▪ HD map with dynamic layers▪ Database of processed events	
4	Fleet of sampling vehicles	<ul style="list-style-type: none">▪ L1 and L2 vehicles are equipped with sensors▪ AI decision▪ HD Map dynamic layer update	
3	Roads and urban environment	<ul style="list-style-type: none">▪ Road infrastructure (M76, M70, M7) and urban infrastructure (Zalaegerszeg) both support the tests▪ The legal environment for AV road tests	
2	Test track	<ul style="list-style-type: none">▪ Autonomous, connected and electric vehicle testing environment	
1	Education and research	<ul style="list-style-type: none">▪ Dedicated BSc/BEng and MSc degree courses▪ Basic and advanced research in artificial intelligence, cooperative control, cybersecurity and unmanned technologies	

ZALAZONE is a unique test track for conventional, connected and autonomous vehicles





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MISSION FOR A SECURE FUTURE

Thank you
for your attention