



CSABA KILIÁN - CEO

THE ROLE OF HUNGARIAN SUPPLIERS IN THE SUPPLY CHAIN - CHANGES IN RECENT YEARS

Association of the Hungarian Automotive Industry - MAGE

Mission of MAGE Association

- Effective representation in legal, economic and social issues
- Improve competitiveness
- Promote national suppliers
- Support strong and productive R&D&I
- Foster further automotive investments
- Enhancing international partnership



MAGE members' contribution

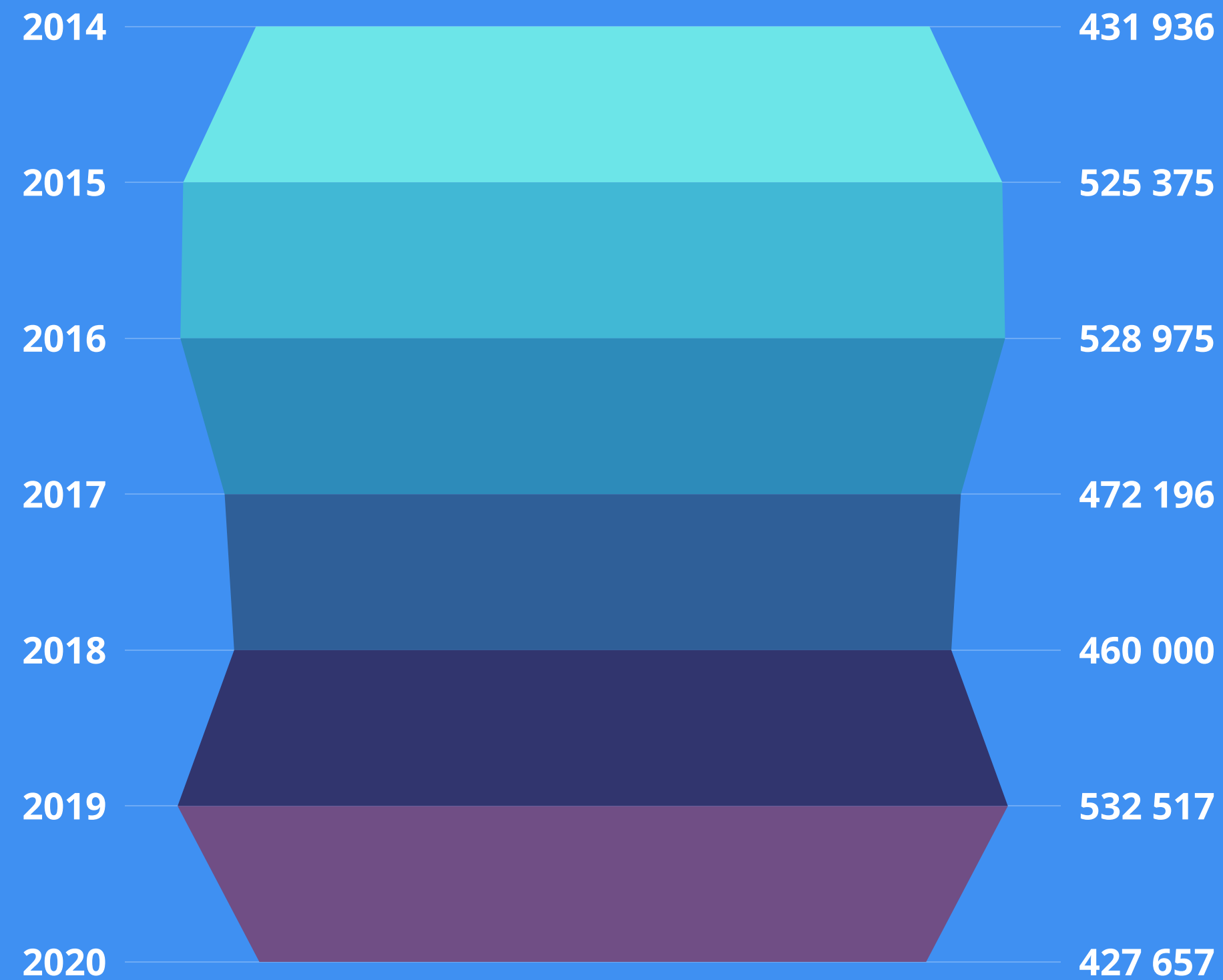
- to the total automotive export: 93%
- to the total output of the Hungarian Automotive Industry: 80%
- to the total automotive investments: 90%
- to the total automotive R&D&I investments: 90%

MAGE members employ more than: 90 000 people

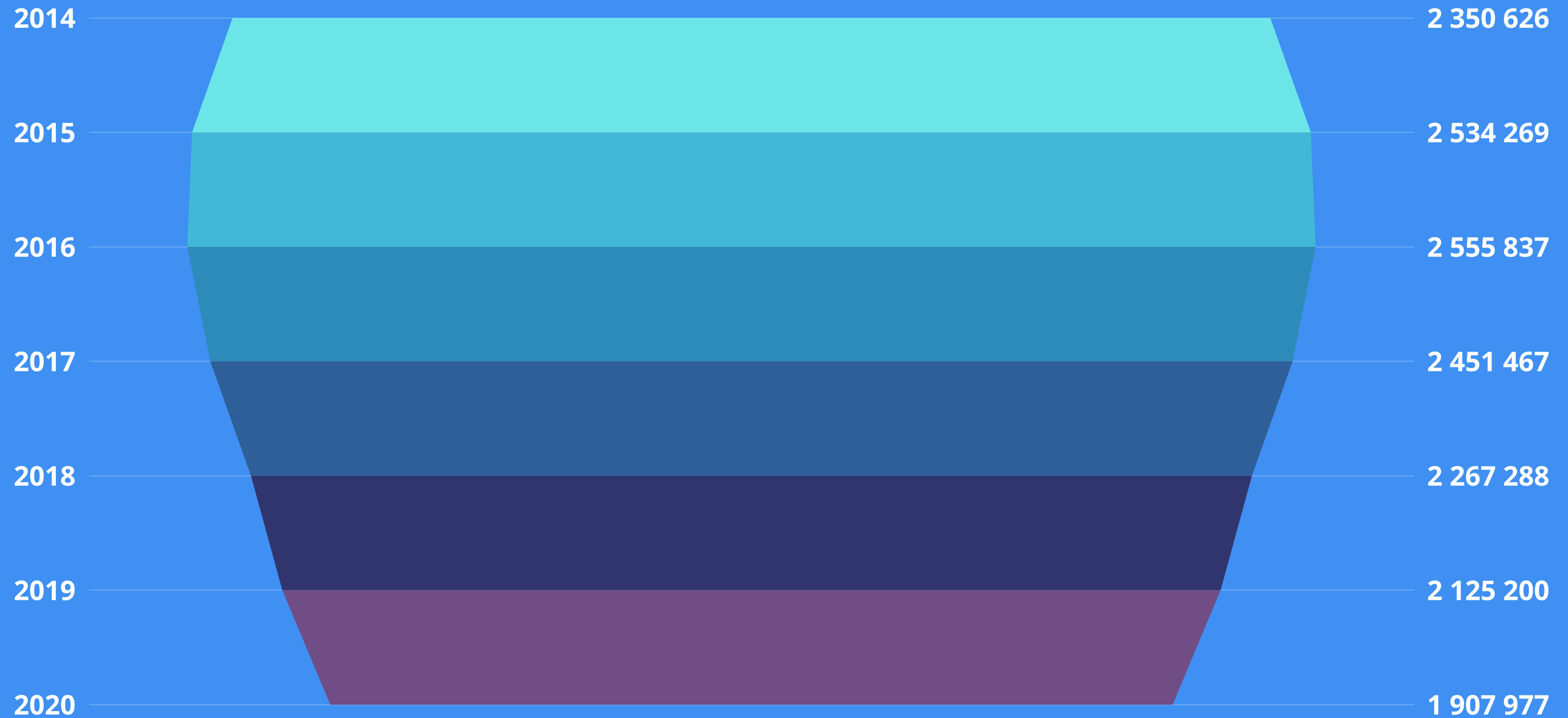
Cooperation with and membership of other professional organizations

- ACEA - European Automobile Manufacturers Association; professional partnership
- Automotive associations of V4 countries
- Industry 4.0 National Technological Platform
- 5G Coalition, founding member
- CO2 Coalition, founding member
- AI (Artificial Intelligence) Coalition, founding member

Vehicle manufacturing



Engine production



The vehicle industry of Hungary

In addition to a 20 % contribution to the national export this branch of the processing industry provides working possibilities for several small and medium enterprises, suppliers.

The major part of the Hungarian automotive industry is concentrated in Győr-Esztergom, Szentgotthárd-Szombathely, Debrecen, Kecskemét and Miskolc regions.

More than 50 from the 100 biggest suppliers of the vehicle industry are present in Hungary

Number of enterprises close to

900

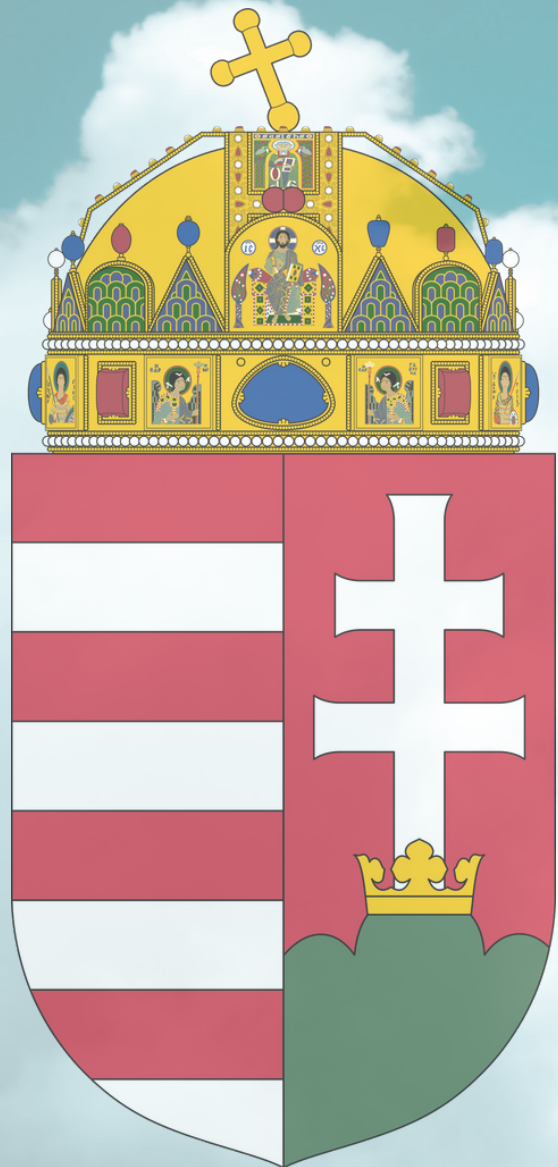
Number of employed people:

175 000

5 OEMs have already chosen us for manufacturing activities,



& 3 OEMs with engineering and services activities.



Impact of the COVID crisis on the automotive industry, at the financial, operational and strategic levels



Source: Top Tier
Consultants

Panorama of domestic vehicle production

OEM-s, Tier1-s

- foreign property,
- high technology level,
- significant resources,
- high production value,
- mostly high foreign material content,
- export orientation,
- typically foreign R & D, but expanding tasks.

SMEs

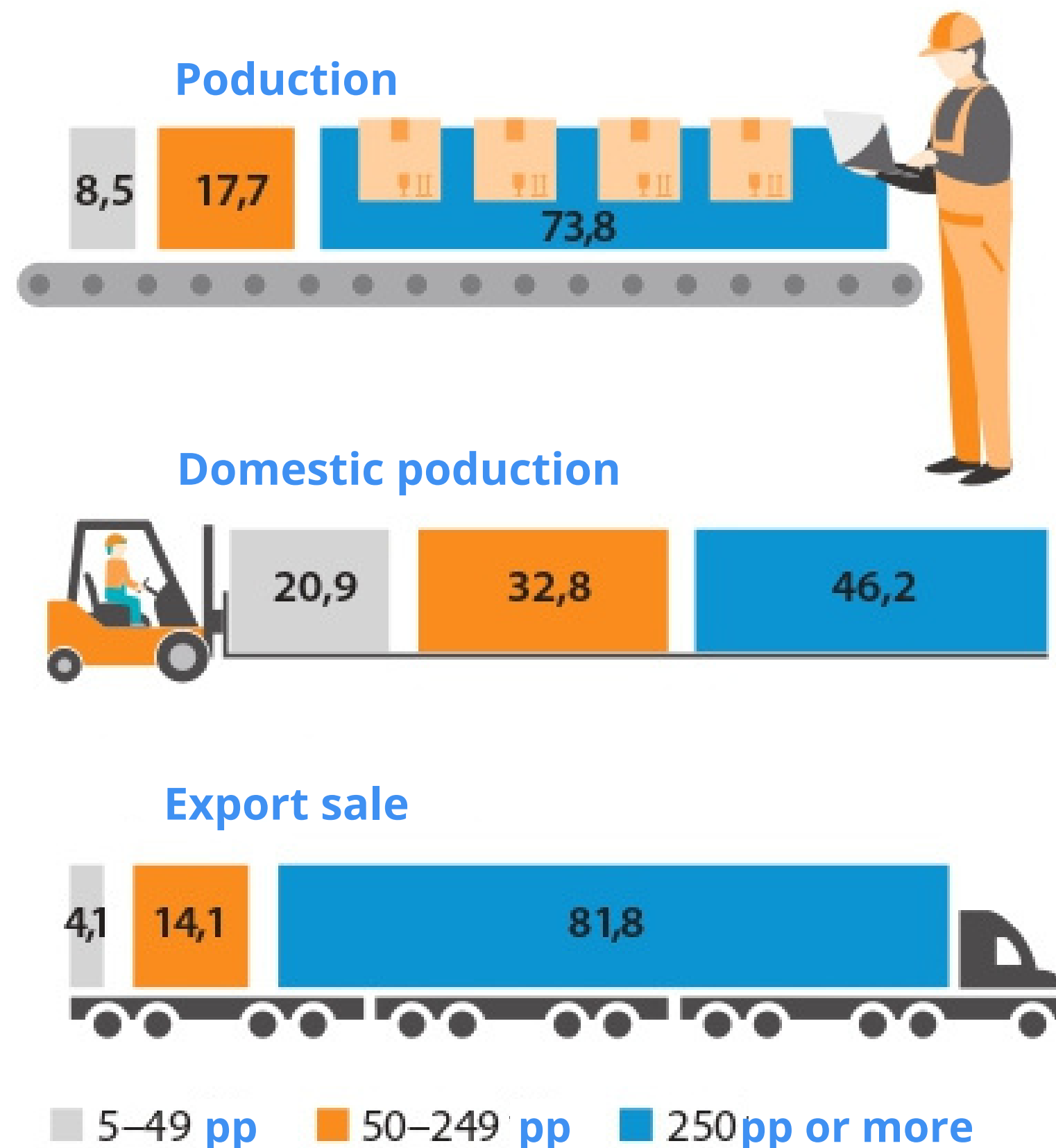
- traditional capacities,
- scattered inadequate resources,
- low added value,
- low cooperative level,
- typically no R & D,
- increasing number of exceptions.

The output of small businesses fell the most

Production of organizations with 5-49 people decreased by 16% compared to a year earlier. The largest industry in this circle metallurgy and metal processing, as well as rubber, plastics and plastics the performance of the building materials industry lagged behind from the year 2019. Medium, 50 to 249 people and enterprises with a larger number of employees production volume to a lesser extent, 6.8, and decreased by 4.3%.

The output of large export-oriented large enterprises is mainly due to the decline in vehicle production became smaller, this was partially compensated by that among the industries expanding during the pandemic also the manufacture of electrical equipment, the manufacture of pharmaceuticals and the manufacture of electronics it focuses on large corporations.

Enterprises with at least 250 employees in 2020 nearly three-quarters of industrial production was produced, and industrial exports even more so most of it was given.



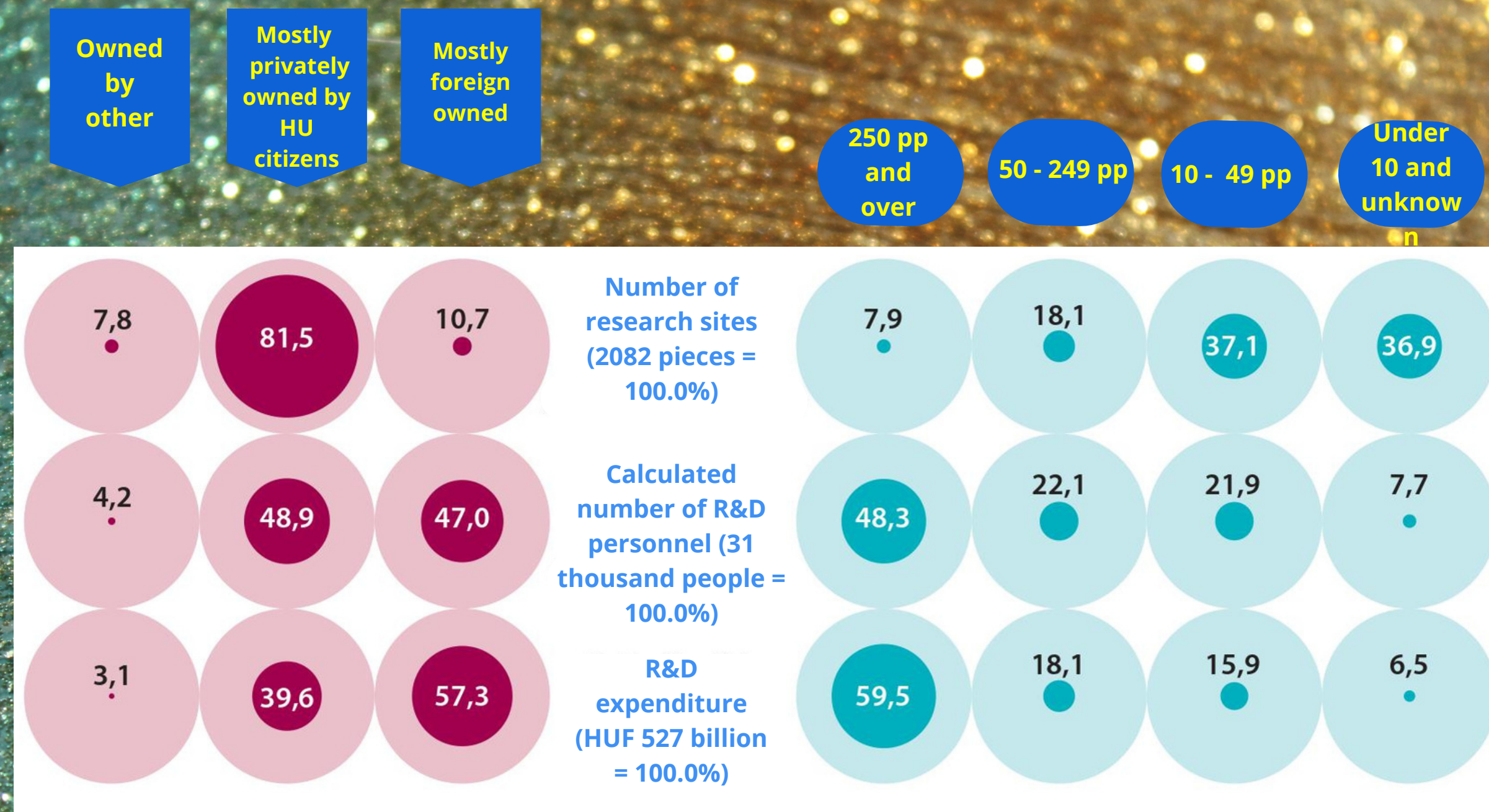
Distribution of industrial production and sales by company size, 2020,%, Source: KSH

R&D targets

National priorities

- Healthy society and prosperity
- Advanced vehicle and other engineering technologies (material technology, nanotechnology, electronics)
- Clean renewable energies

Large, mostly foreign-owned companies spend the most on R&D

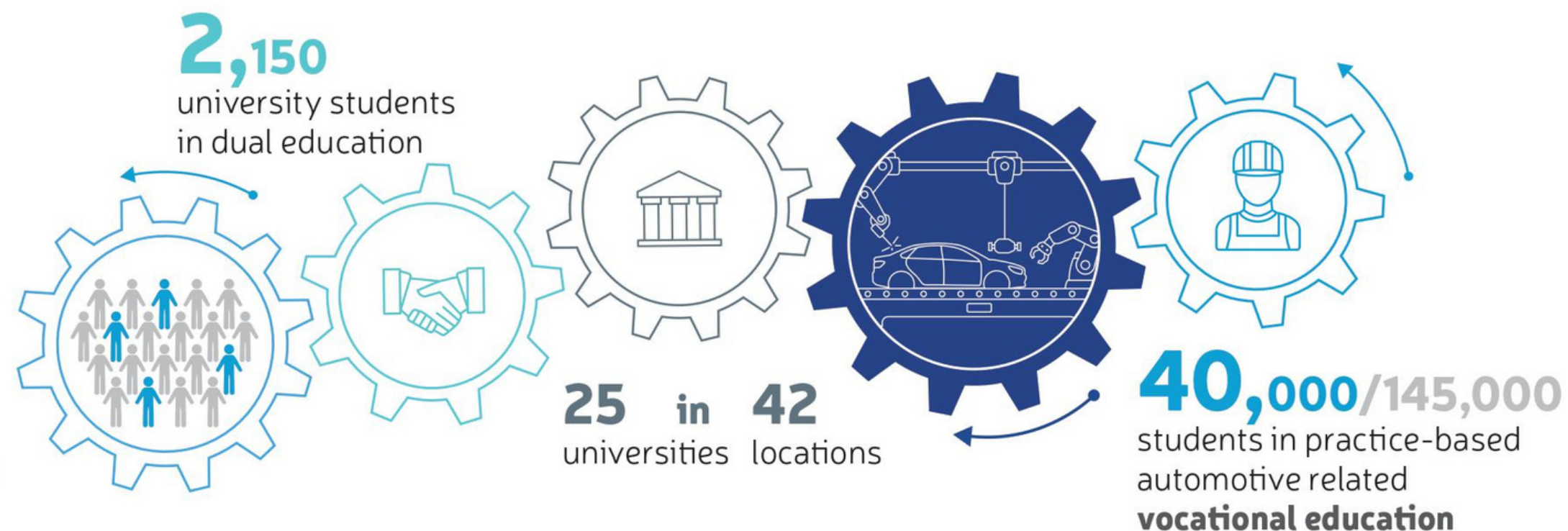


Distribution of the main indicators of enterprises engaged in research and development by type of ownership and headcount category, 2019, %.

Source: KSH

**Automotive
related studies
driving
the industry**

52,000/287,900
students in automotive related
tertiary education



**Did you
know?**



In response to the new trends, the following courses have been launched
Autonomous Vehicle Control MSc + Autonomous Vehicle Programming MSc
(in English) in Budapest.

Source: HIPA

Innovation hubs in the automotive industry



Audi

Engine development (CNG engine), humanoid robot hands
Location: Győr



IBIDEN

Design and manufacturing Diesel Particle Filters for vehicle exhaust gas and Sealing Materials for catalytic converters
Location: Dunavarsány



Thyssenkrupp

Electronic and autonomous steering systems (e.g. cross-wind compensation, lane keeping assist, parking assistance), autonomous driving
Location: Budapest, Veszprém



Bosch

Expanding autonomous driving and e-mobility related projects with more than 2,700 R&D personnel
Location: Budapest, Miskolc

Continental



Product development of capital equipment, Advanced Driver Assistance Systems (ADAS)
Location: Budapest, Veszprém

Valeo

Product development of electronic control and camera control units, driving assistance systems
Location: Veszprém



Balluff



A new research and development project, targeting the major regeneration of sensors and network devices for industrial automation. Location: Veszprém

TDK



Smart-car parts development (e.g. keyless entry, ignition system, optical parking assist systems)
Location: Szombathely

ZalaZone

Independent proving ground for autonomous, connected, electric and conventional cars besides other vehicles
Location: Zalaegerszeg



Evosoft

R&D of electric propulsion control systems at expert level with the background of SIEMENS AG
Location: Budapest



National Instruments

Cutting edge measurement and autonomous driving
Location: Debrecen



AVL

Powertrains, measuring tools and software development, ADAS testing
Location: Budapest, Kecskemét, Zalaegerszeg



Knorr-Bremse



Mechanical components and electrical systems and components, pneumatic brake systems, SW component, I-Com Assist (Drives Advisory System)
Location: Budapest, Kecskemét

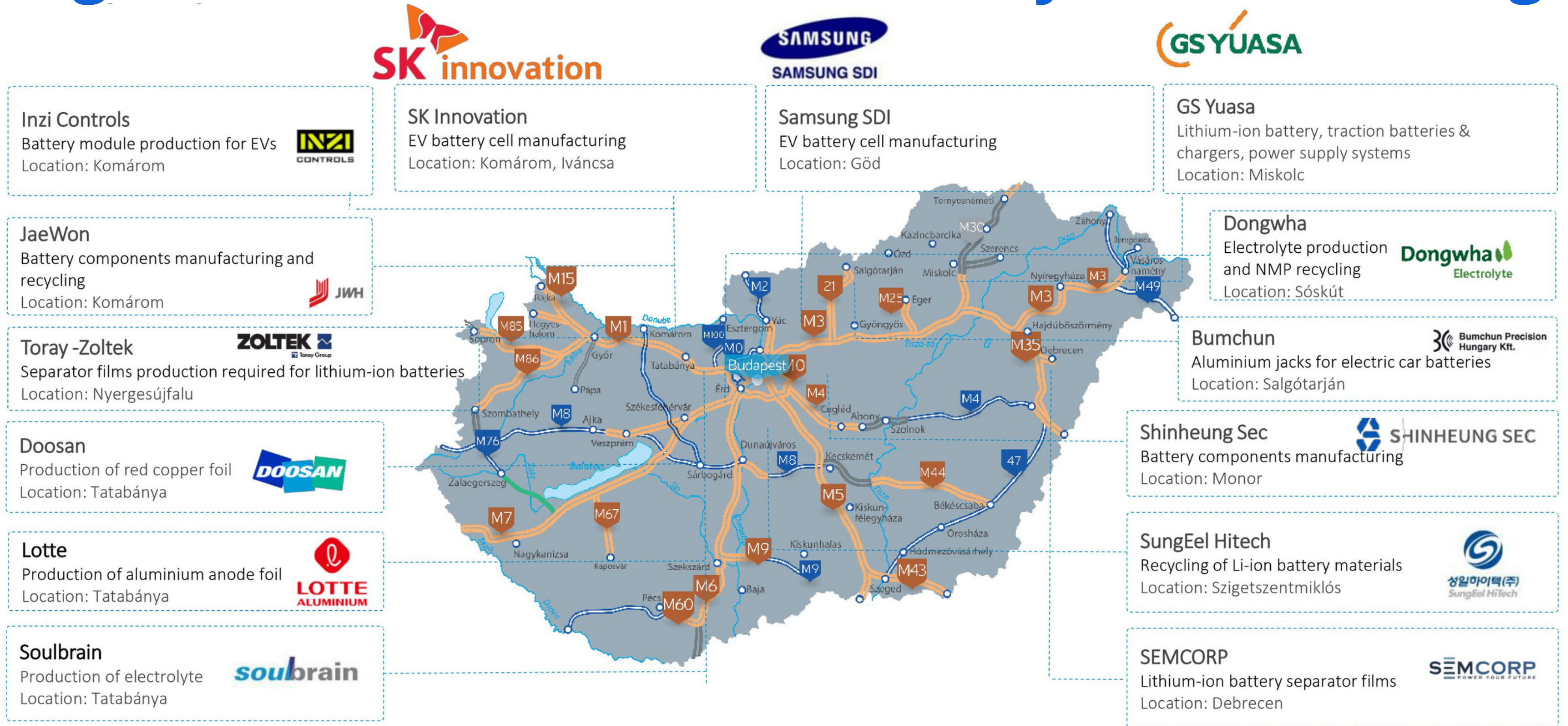
NNG

Development of various navigation and software for the automotive industry
Location: Budapest, Szeged



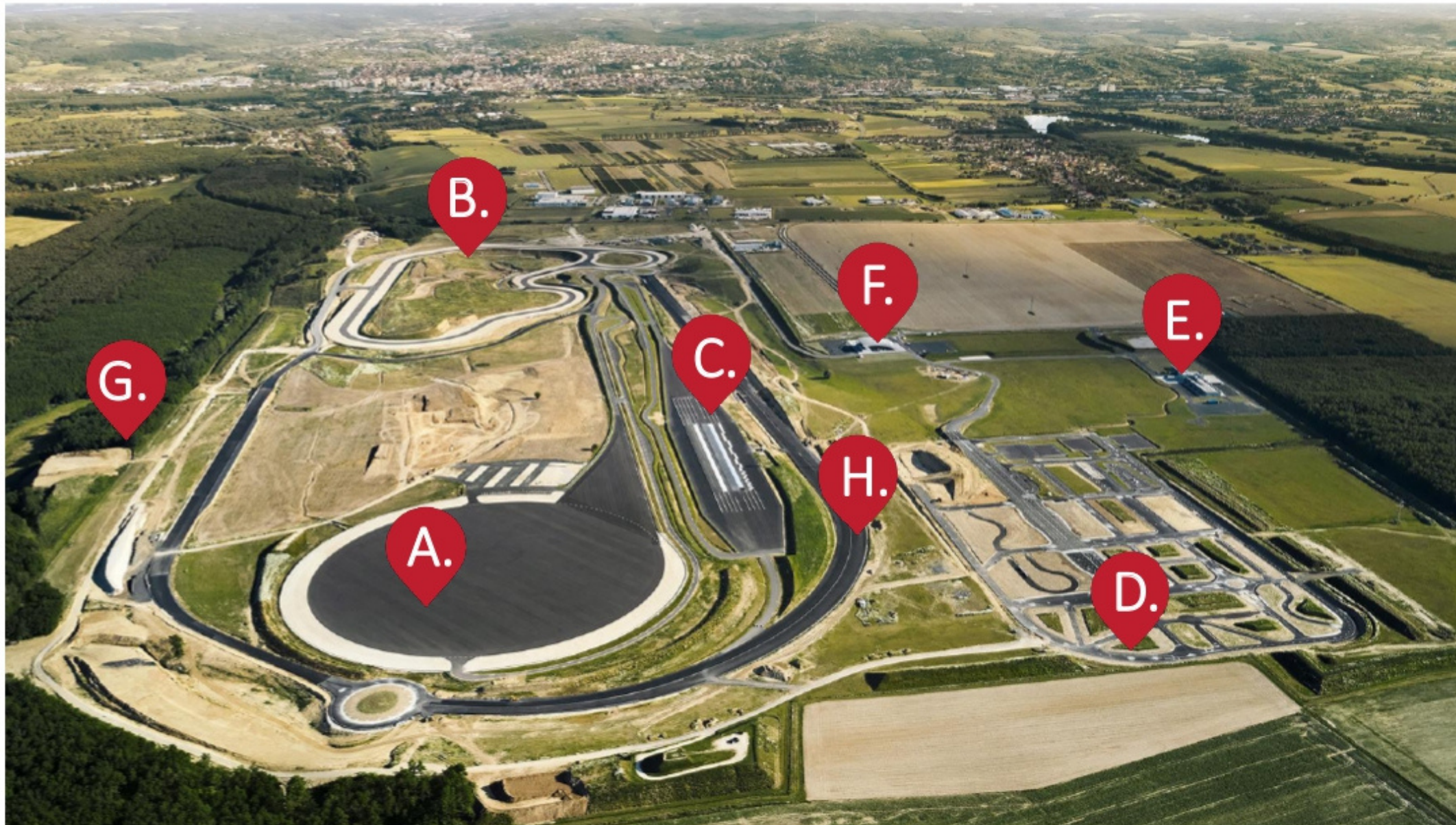
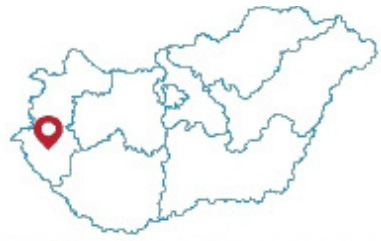
Source: HIPA

Significant investments in battery manufacturing



Source: HIPA

ZalaZone Proving Ground



Ready

A.
Dynamic platform

B.
High speed handling

C.
High speed handling

D.
High speed handling

E.
High speed handling

F.
High speed handling

G.
Rural roads

H.
Motorway

2021

ADAS platform

Low speed handling (wet)

Slopes

2022

Bad roads

Acoustic (NVH)

High speed oval

2023

Public Motorway M76

Some major automotive companies using ZalaZone



KNORR-BREMSE

Source: HIPA

Thank you for your attention!

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