

A night-time photograph of the Chicago skyline, featuring prominent skyscrapers like the Willis Tower. The city lights are reflected in the water in the foreground. Overlaid on the image is a complex network of glowing blue and white lines and dots, resembling a digital or data network.

Corporate embeddedness in regional economies

Zámbó Dániel

Kecskemét | 2018.10.19

Hungarian Regional Science Association 16th Annual Meeting

„There is no Bosch car...



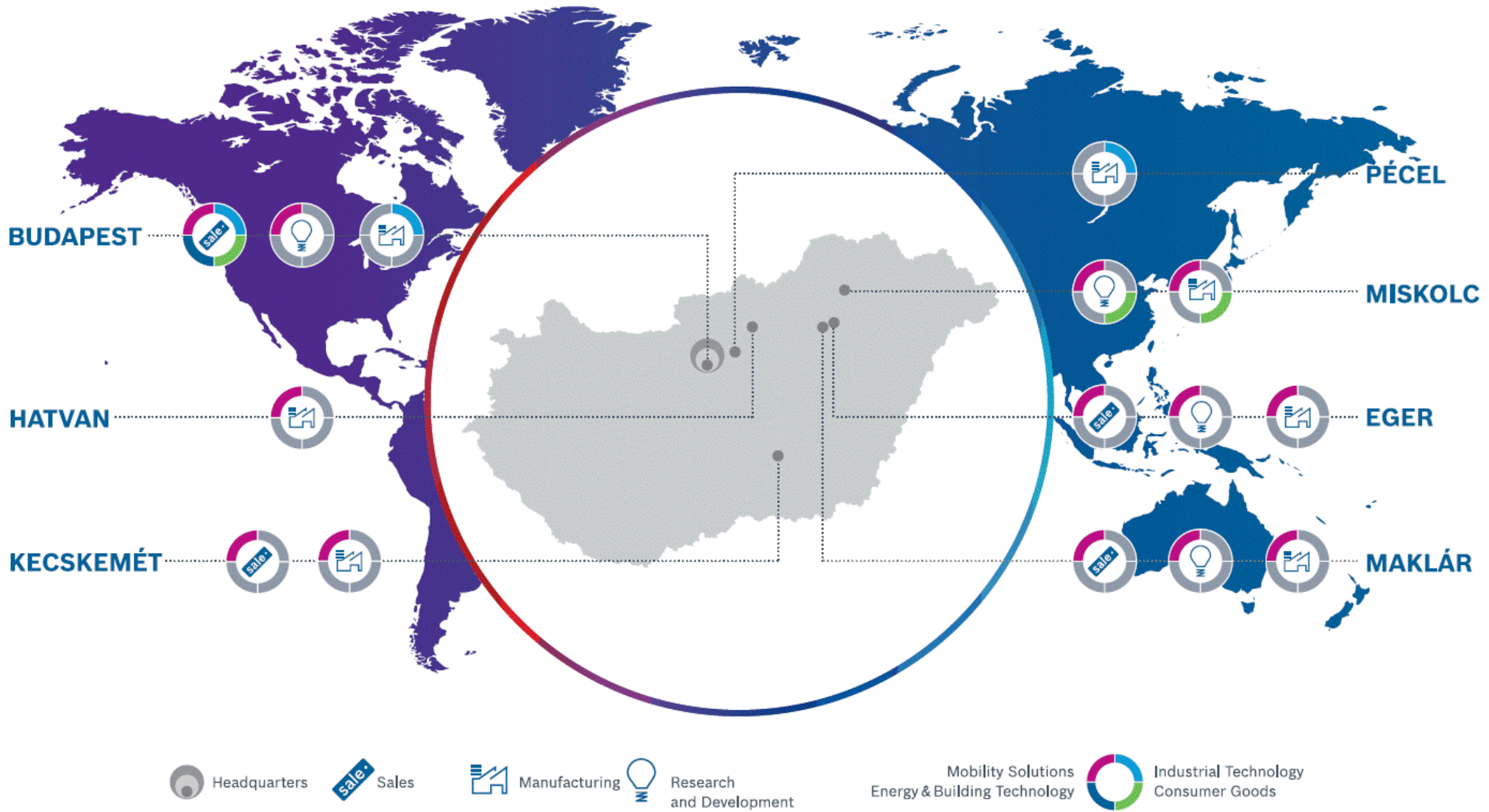
worldwide

but there is no car without Bosch.”

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Employees





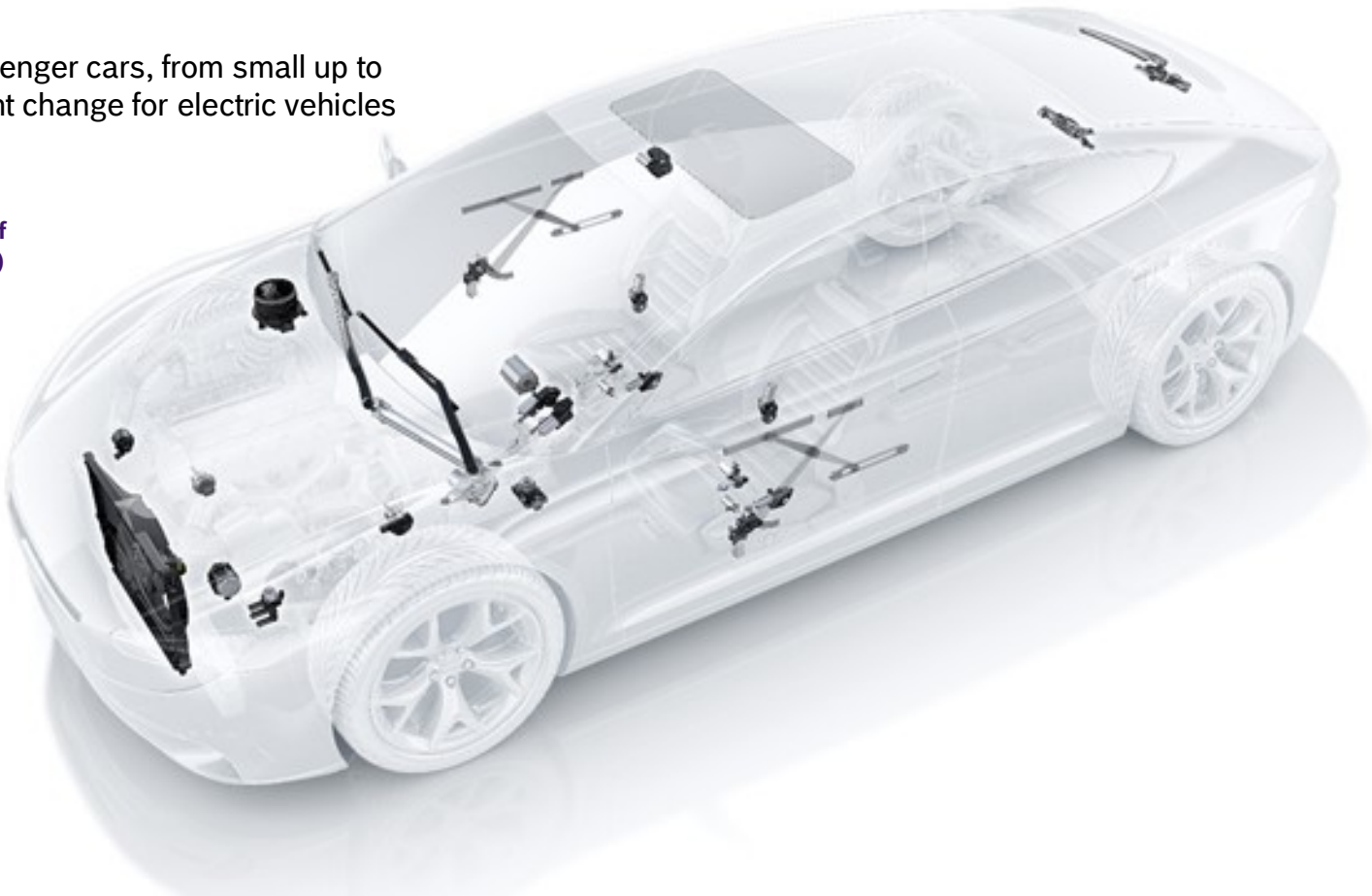
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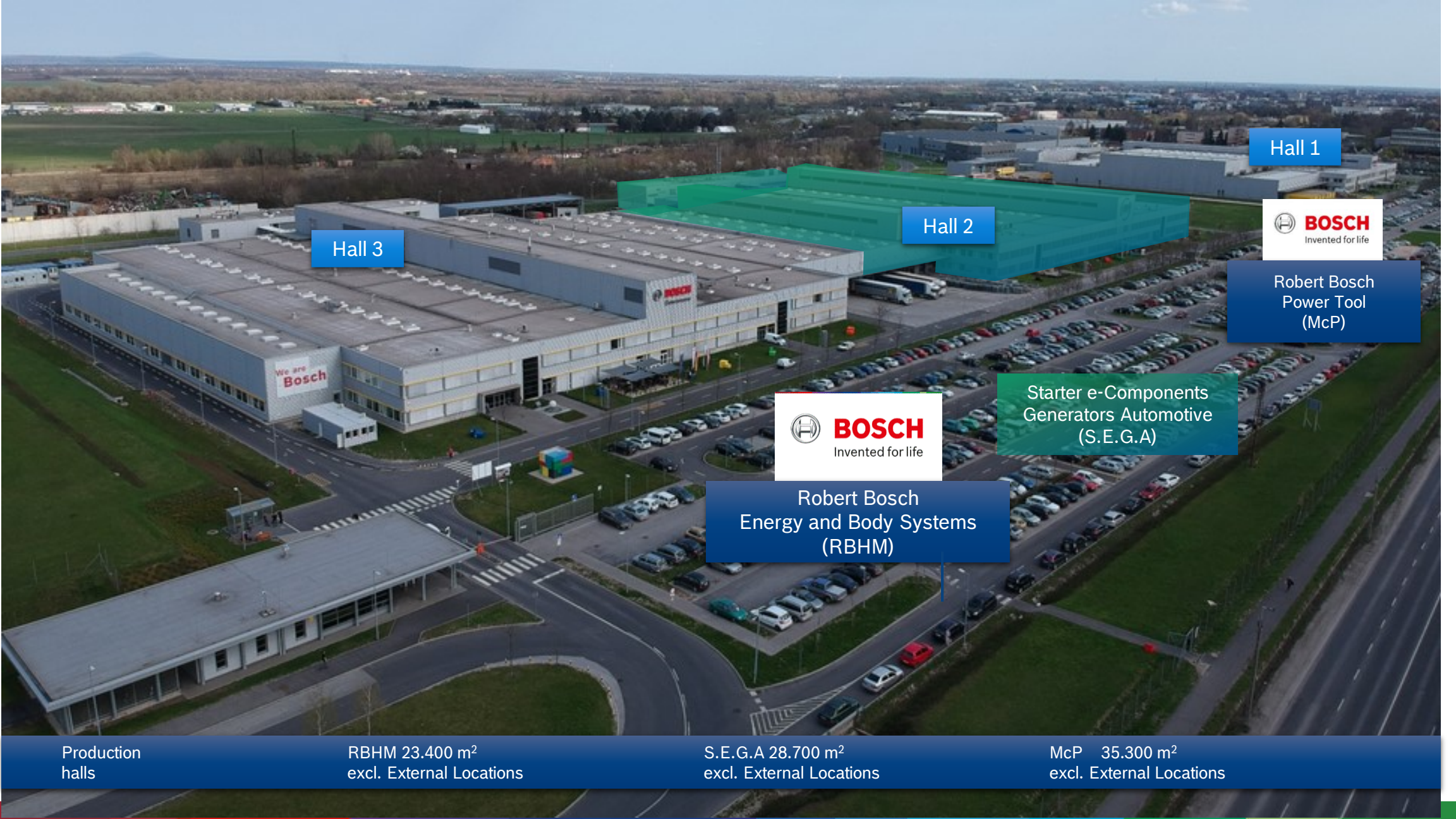
Electrical motors in passenger cars

High number of electrical motors in passenger cars, from small up to premium vehicle segment – no significant change for electric vehicles

Rotating Electrics – Europe average distribution of electrical motors per vehicle (standard equipment)

115	Maximum
53	Average
10	Minimum





Hall 1



Robert Bosch
Power Tool
(McP)

Hall 2



Robert Bosch
Energy and Body Systems
(RBHM)

Starter e-Components
Generators Automotive
(S.E.G.A)

Hall 3

Production
halls

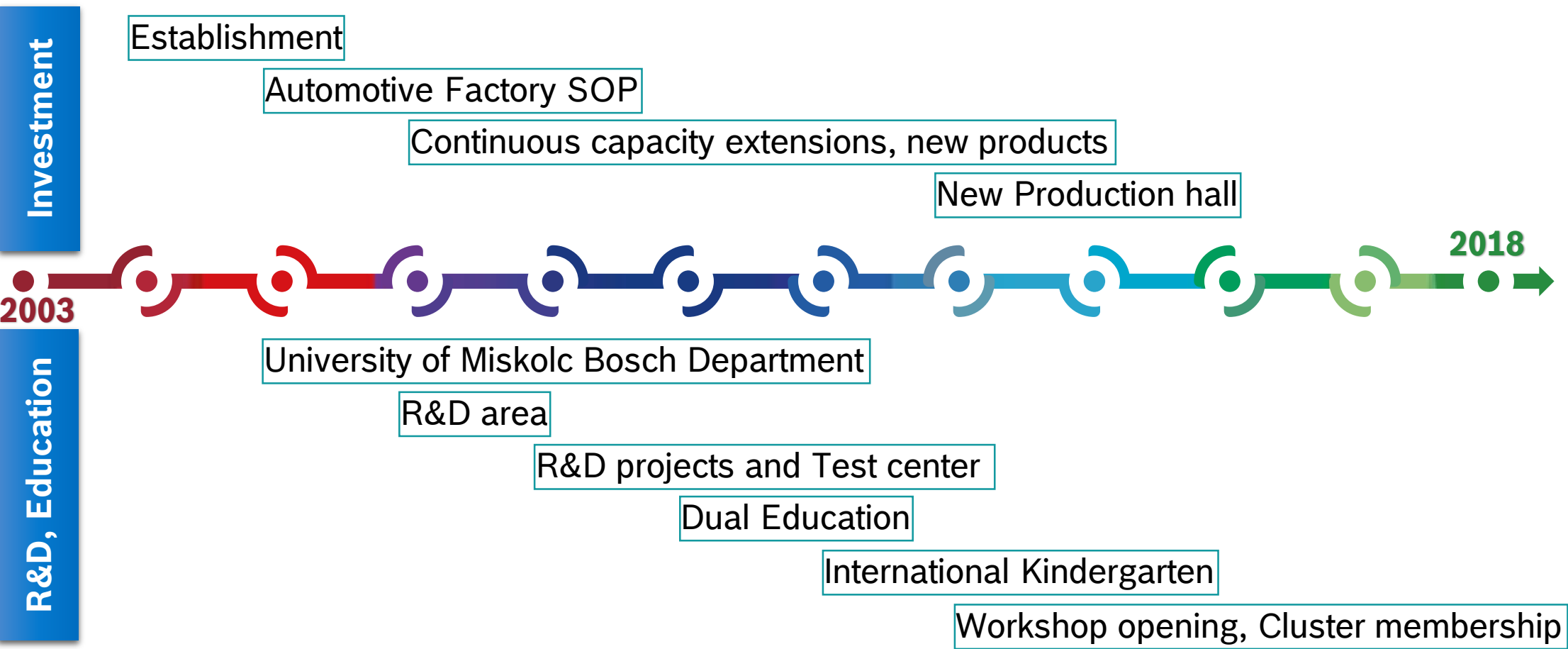
RBHM 23.400 m²
excl. External Locations

S.E.G.A 28.700 m²
excl. External Locations

McP 35.300 m²
excl. External Locations

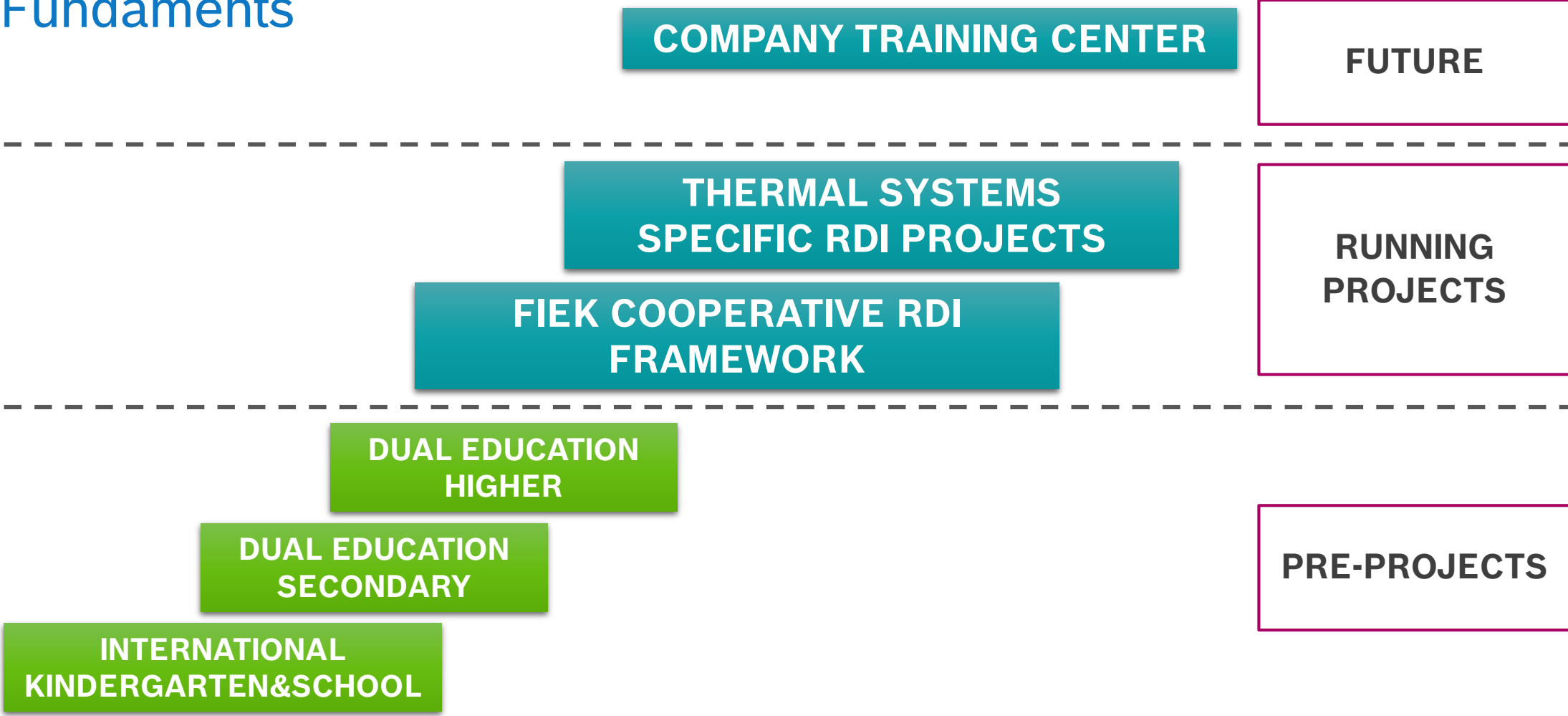
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Milestones of embeddedness



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Fundaments



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University Cooperations

Title: **E-mobility solutions from Miskolc**

Consortium: **Robert Bosch Energy and Body Systems Kft. (Coordinator)**
University of Miskolc
Bay Zoltán Nonprofit Ltd. for Applied Research

Project's topic: Smart solutions in thermal systems for e-mobility

Title: **Establishment of an Advanced Materials and Intelligent Technologies FIEK at the University of Miskolc.**

Consortium: **University of Miskolc (Coordinator)**
BorsodChem Zrt.
ÉMI Építésügyi Minőségellenőrző Innovációs Nonprofit Kft.
Robert Bosch Energy and Body Systems Kft.
Starters E-Components Generators Automotive Hungary Kft

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Vocational dual education

Specialization of vocational dual education

Production line setup
3 years

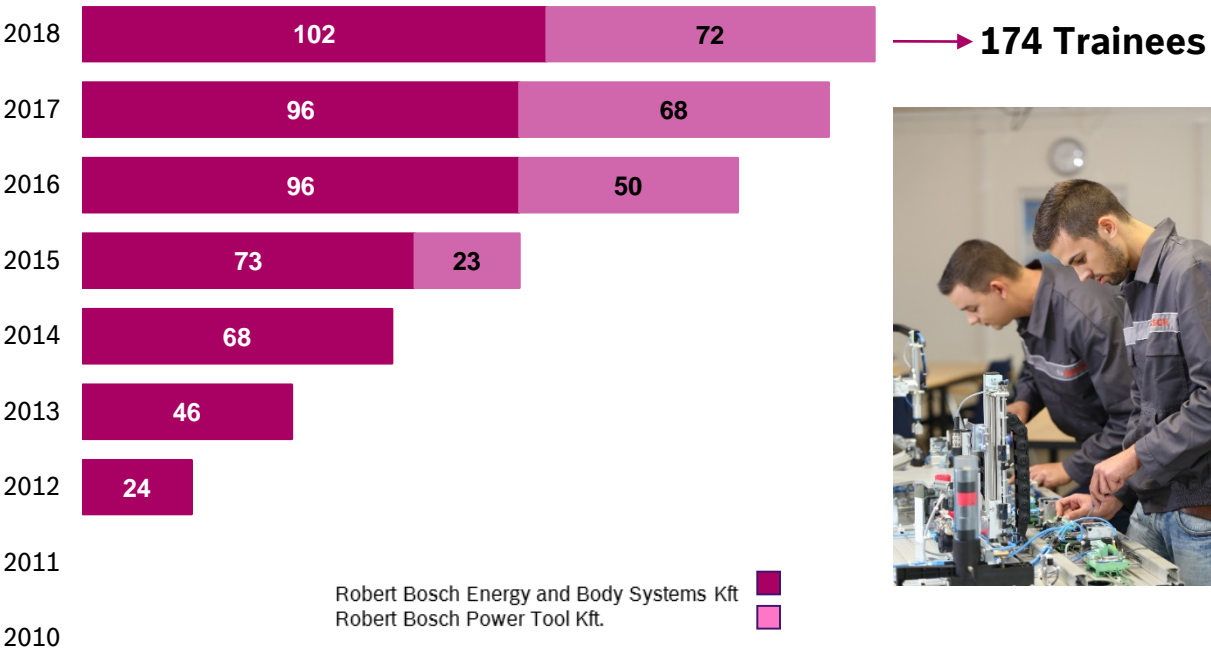
Mechatronics technician
2 years

Mechanics technician
2 years

Automatics technician
2 years

Evening mechatronics technician
2 years – for own employees

Number of the trainees in the vocational dual education



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Dual education location

2000 m² training center



6 HC fulltime trainer
10 workshops



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Practical activities



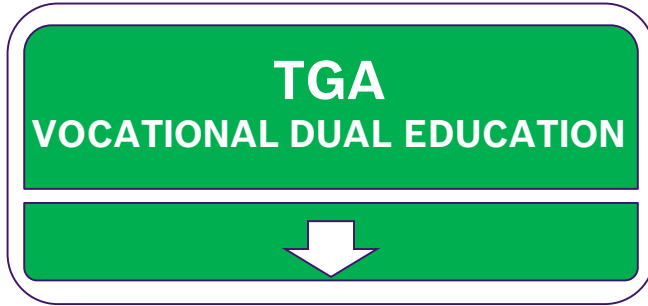
11 training coordinators

68 training officers



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New technical training needs in the Training Center



Production line setup - 3 years

Mechatronics technician - 2 years

Mechanics technician - 2 years

Automatics technician - 2 years

**Evening mechatronics technician
2 years – for own employees**



I4.0 basic Training

Electrical measurement

Mechanics measurement

Pneumatics

Sensor setting Training

Robotics

Axis setting

PLC

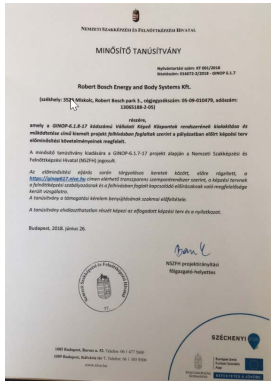
Bearing mounting

Machine element

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Creation of a Company Training Center - GINOP-6.1.8-17

Certified
Training plan



GA with the
Ministry



Company Training
Center

- 59 Training program
- 286 Training occasion
- 2550 participants

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Future

Focus areas for the future

i4.0

Training for Line leaders, shift leader, technicians

Basic part: Basics of digitalisation, informatics, automation. i4.0 function elements

Practice: with i4.0 demo machine

Department specific: systems. MES cooperation with TEF



Robotics

Competence Develop for the TGA trainers

Cooperation with UNI and TEF

KUKA robotics training for TGA trainers



**Thank you
for your attention**