Czech Engineering Industry at a Glance

The Czech Republic is well-known for the great reputation of the engineering industry worldwide.

Since the early 20th century, the engineering industry remains one of the cornerstones of the Czech economy. Stable economic environment, high level of manufacturing technological maturity and cutting-edge R&D programmes contribute to the creation of the optimal climate for business establishment and further development. This fact has been recognized by the world’s major players such as Siemens, ABB, Honeywell or Daikin, who have invested in various facilities in the Czech Republic.

- 100+ Years of MFG excellence
- 3rd Largest MFG industry in the Czech Republic
- 126 000 Employees
- 5200 Machinery manufacturing companies
Total Operating Cost

This chart shows the rank and total annual operating costs of each location based on labour and utility costs.

Specialisation in Industrial Machinery, Equipment & Tools

Number of companies in industrial machinery, equipment & tools per 100,000 population

Source: fDi Intelligence from The Financial Times, 2018

Largest Contribution of the Manufacturing Industry to GDP within EU (in %)

Source: Eurostat 2018
Key Foreign Investors

Selected Investors in the Czech Republic

Sector Database of Suppliers on the Czech market available free of charge at suppliers.czechinvest.org
Investment Success Stories

“When deciding on the location of Bosch’s investments, the advisory voice and analytical assistance of CzechInvest was always an important parameter of success. The joint formulation of conditions and benefits for investment development has positively influenced Bosch’s decision at the concern level.”

Pavel Roman  
Head of Corporate Communications, Public Affairs Bosch Group CZ and SK  
Robert Bosch odbytová s.r.o., 2017

“With its activities, CzechInvest significantly and efficiently supported Solar Turbines, both during the founding and subsequent expansion of the Žatec repair centre, as well as in the preparation of our new investment – the construction of a test plant in Žebrák. The company continues to collaborate with the AfterCare department on a regular basis both in normal business operations and in identifying other investment opportunities.”

Michal Hřivna  
Facility Manager, Solar Turbines EAME s.r.o

“Doosan Corporation’s values that ‘The little grains of sand, all together, add up to make a mighty mountain’ is fully demonstrated in their partnering with Škoda Power, where both partners have over a 100-year history of manufacturing excellence and innovation, which forms the basis of the global R&D centre for turbine technologies based in the Czech Republic.”

Jiří Šmondrk  
Director General of Doosan Škoda Power

EUR 3,036 million  
Capital expenditure on FDI projects in the engineering sector, 2003 - 2018
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1806</td>
<td>Establishment of the Royal Czech Estates Technical School</td>
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<tr>
<td>1807</td>
<td>The first Watt steam engine in the Austrian Empire manufactured in Bohemia</td>
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<tr>
<td>1815</td>
<td>The first steam-powered vehicle in Central Europe manufactured in Bohemia</td>
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<tr>
<td>1827</td>
<td>Josef Ressel invents the screw-propeller</td>
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<td>1898</td>
<td>Tatra Präsident, the first car built in the Czech Republic</td>
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<td>1906</td>
<td>Steam turbine built according to an exclusively Czech design</td>
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<td>1913</td>
<td>Introduction of diesel combustion engines modified by prof. Kostal into mass production in Prague</td>
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<tr>
<td>1920</td>
<td>Škoda begins manufacturing of electric locomotives</td>
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<tr>
<td>1993</td>
<td>Czech Republic gains membership in CERN</td>
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<tr>
<td>2006</td>
<td>Siemens locomotive breaks the world speed record on Bonatrans wheels manufactured in Bohumin in the Czech Republic</td>
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</tbody>
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Bright Outlook for the Future

Living Environment

The benchmarking quality results of living environment in selected countries, broken down into 4 comprehensive subcategories.

<table>
<thead>
<tr>
<th>Country</th>
<th>Attractiveness</th>
<th>Cost of Living</th>
<th>Healthcare</th>
<th>Safety</th>
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</thead>
<tbody>
<tr>
<td>USA</td>
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<td>5</td>
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<tr>
<td>Czech Republic</td>
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<tr>
<td>Ireland</td>
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<td>Germany</td>
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<td>France</td>
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<td>Japan</td>
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<td>Austria</td>
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</tbody>
</table>

Source: fDi Intelligence from The Financial Times, 2018
Innovation & Education

Global Innovation Index

The Global Innovation Index ranks the innovative capacity of countries on the basis of 85 robust data points.

Research and Development Intensity

This chart shows research and development expenditure as a percentage of GDP.

Source: fDi Intelligence from The Financial Times, 2019
Mechanical Engineering at Czech Universities

Total students: 299,054  |  Total graduates: 72,057
Technical science students: 92,902  |  Technical science graduates: 21,857

Main universities with mechanical engineering study programmes

Brno University of Technology
Students: 4299
Graduates: 1147

Czech University of Technology, Prague
Students: 3445
Graduates: 724

VSB – Technical University in Ostrava
Students: 2873
Graduates: 751

University of West Bohemia, Plzen
Students: 1174
Graduates: 211

Technical University, Liberec
Students: 810
Graduates: 149

Charles University in Prague
Students: 750
Graduates: 136

UJEP University in Usti nad Labem
Students: 531
Graduates: 61

Palacký University, Olomouc
Students: 260
Graduates: 40

Source: Ministry of Education, Youth and Sports, 2018
About Czech Railway Industry Sector

- 200 years of industry tradition
- Exports account for 54% of total turnover
- Highly competitive industrial sector
- One of densest railway network in the world
- Activities throughout industry segments
- Support of the Association of the Czech Railway Industry

Source: ACRI, 2018
# Research Institutes and Testing Laboratories

## Mechanical Engineering

- **R&D for automotive industry, aerospace and power engineering**: Engineering technologies, e.g. manufacturing processes, machine tools and virtual machine design.
- **Research, development and production of machinery for manufacturing**: Mainly machine tools, printing, food processing, packaging and medical equipment.
- **Research in the fields of intelligent, distributed and complex systems**: Automatic control, CAM, biomedicine and assistive technologies.
- **R&D of modern vehicle structures**: Machine tools and their modernization, forming and machining technologies.
- **Support for technical excellence**: Of the most significant machine tool manufacturers in the Czech Republic.

## Railway Industry

- **Development and design of rail vehicles**: Analyses and simulations for optimalisation of vehicle handling in real conditions, CAD/CAE/CAM.
- **Applied research and testing of metal, plastic and composite materials**.
- **Construction and testing of rail vehicles and their components**: Simulations and consulting.
- **Expert services and comprehensive solutions in consulting and testing**: For railway systems and rail transport.
- **Dynamic laboratory testing**: Computer simulations of vehicles, noise and vibration, material testing.
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