

CZECH REPUBLIC

National Flag

Country Outline

- GDP: 154.738 mil. euros / - GDP Per capita: 14.700 euros
- Areas of marked S&T specialisations: Digital Economy, Automotive, Precise Machinery/

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Introduction: The Czech Republic belongs to the most industrialized countries within the European Union. Industry accounts for one third of national GDP while industrial sector employs around 36,2 % of workers in the Czech Republic. The national research infrastructure is formed of public universities, institutes of the Czech Academy of Sciences, research institutions affiliated to governmental bodies and private research institutions. The Czech Republic has recently invested almost 2 billion euros from European Structural and Investment Funds into the advancement of its research infrastructure thus developing number of centres of excellence that are unique in European standards. According to the Normalized Citation Impact, the most important fields of science are as follows: clinical medicine, physical sciences (astronomy), bio-sciences, chemical sciences and material engineering. The industrial sectors of national economy with the largest R&D spending from private sources are digital economy, automotive and precise machinery. The Czech Republic spends almost 2 % of its GDP in R&D expenditures which is slightly below the European Union's average. According to the Innovation Union Scoreboard, the Czech Republic belongs to the group of moderate innovators.

1. Policies and Strategies in Science, Technology and Innovation

Drafting of a new law on Support of Research, Experimental Development and Innovation from the Public Funds

The current legal framework of the Czech Republic for supporting research, development and innovation – Act No 130/2002 Coll. on Support of Research, Experimental Development and Innovation from the Public Funds and on the Amendment to Some Related Acts – is no longer fit for actual needs of the system of public support of R&D. The current government of the Czech Republic considers the support of research and development as one of its priorities. In accordance with the government priorities, the Cabinet of the Vice Prime Minister for Science, Research and Innovation has been currently working on a new law to supersede the Act no. 130/2002 Coll. that regulates public support of R&D in the Czech Republic nowadays. The new legal framework is to centralize so far fragmented public support for R&D, establish one coordinating body for national R&D policies and set new principles of state funding of applied research. In this context, the amendment suggests establishing of an independent ministry for R&D&I that will manage and coordinate national policies in this area. That would mean a major systematic improvement of state support for R&D.

The National Research, Development and Innovation Policy of the Czech Republic

The National Research, Development and Innovation Policy of the Czech Republic (NRDIP) is a key document on national level that sets strategic priorities in R&D. NRDIP aims to set conditions for effective realization of R&D within the Czech Republic. Last up-date of the NRDIP was conducted 2 years ago, nevertheless since then the European as well as national R&D policies have undergone profound changes in their general approach, set goals and key tools to reach them. Therefore a new up-date of NRDIP is being worked on that takes into account current needs and trends in the field of R&D on national, European as well as global level. These trends create a need for increasing efficiency of actual system of coordination and management of R&D that would be able to move the Czech Republic towards the knowledge-based economy. Therefore, NRDIP focuses on the following policy areas:

- Effective and productive R&D system
- Production of knowledge and know-how that is used to increase innovation capacity
- Innovative businesses
- Stable and strategic management of R&D system

Since the Czech Industry accounts for more than one third of national GDP, the Czech Republic needs to keep up with ongoing digital revolution that will have a profound structural impact also on traditional industrial sectors. Hence, the National Research, Development and Innovation Policy pays special attention to the support of applied research.

The National Policy also reflects the mandatory and referral documents of the European Union authorities. Attention is paid to the operational programs partly funded by EU structural funds, as they significantly affect the R&D&I basis in the Czech Republic and its development.

National Innovation Strategy for Smart Specialization

The Cabinet of the Vice Prime Minister for Science, Research and Innovation is also the manager of National Innovation Strategy for Smart Specialization (RIS 3) that has been designed to ensure more effective use of European Structural Investment Funds and to increase synergy between different EU, national and regional R&D policies as well as private and public investments in this area. The RIS 3 aims to focus policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development while building on each country/region's strengths, competitive advantages and potential for excellence.

Research infrastructures policy of the Czech Republic for the years 2016 – 2022

Particular approach of the Czech Republic towards the research infrastructures agenda, including the level of European Strategy Forum on Research Infrastructures, is developed by the Ministry of Education, Youth and Sports and specified in two inter-connected documents – “Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016 – 2022” and methodology of research infrastructures evaluation.

Legal framework of the Czech Republic for supporting research, development and innovation – Act No 130/2002 Coll. on Support of Research, Experimental Development and Innovation from the Public Funds and on the Amendment to Some Related Acts – defines a large infrastructure for research, experimental development and innovation as: *“a unique research facility, including its acquisition and related investment costs and the costs of ensuring its activities that are essential for comprehensive research and development with heavy financial and technological demands and which is approved by the Government of the Czech Republic and established by one research organisation for the use of other research organisations”*.

Facilities complying with this definition and all the qualitative criteria of a large infrastructure for research, experimental development and innovation (subject to an international evaluation) are included in the Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation. Currently there are altogether 58 facilities included in the Roadmap. A major part of the facilities will receive a direct financial support from the Ministry of Education, Youth and Sports for funding their operational and investment costs incurred in the forthcoming multiannual financial framework 2016 – 2022 (subject to the adoption by the Government of the Czech Republic expected in November / December 2015).

Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016 – 2022 will be issued in October 2015 and made available in the Czech and English languages at the official websites of the Ministry of Education, Youth and Sports <http://www.msmt.cz/vyzkum-a-vyvoj/velke-infrastruktury-vyzkumu>.

Operational Programme Research, Development and Education 2014 – 2020

The “Operational Programme Research, Development and Education” will represent the principal financial tool supporting research and development in the Czech Republic by using instruments of the EU cohesion policy in the years 2014 – 2020. The total allocation of nearly 40 billion CZK, which has been devoted to research and development topics of the Operational Programme, will follow the implementation mechanisms of the European Structural and Investment Funds and will be focused on a broad range of activities aimed at further development of the Czech research and innovation ecosystem.

The Operational Programme has been prepared and implemented by the Ministry of Education, Youth and Sports in close cooperation with all the relevant stakeholders in the Czech Republic and provides the research community with opportunities to significantly modernize their infrastructure.

Particular calls of the Operational Programme will be launched in order to upgrade the technical instrumentation of research organisations (including building of new research and development centres in the City of Prague), to support the international mobility of researchers, technicians and managers, to promote the cooperation between public research sector and private/business area, including the inter-sectorial mobility, and to encourage development of a strategy governance of

the Czech research and innovation ecosystem both at the level of the public administration (policy making) and the level of research organisations (strategy management).

Further information on the Operational Programme Research, Development and Education and particular calls is available at the official websites of the Ministry of Education, Youth and Sports <http://www.msmt.cz/strukturalni-fondy-1/op-vvv>.

2. National Programmes and Initiatives

Programme Title	Contents
<p style="text-align: center;">Programme DELTA (https://www.tacr.cz/index.php/cz/programy/program-delta.html)</p>	<ul style="list-style-type: none"> ▪ Cooperation Type: Joint Research Funding Organisation: Technology Agency of the Czech Republic ▪ Call Opening/Closing Date: 14th July – 30th September 2015 ▪ Participation Qualification: company from the CR (research organizations from the CR only together with the company) that has a partner in Sichuan, Zhejiang or Jiangsu provinces ▪ Project Duration: up to 3 years ▪ Funding Scale and Funding Scheme: TA CR is funding only Czech R&D institutions, funding is provided in accordance with the EU Regulation no. 651/2014 ▪ Research Fields: bottom-up approach, however it must be in accordance with the National priorities of the oriented research, experimental development and innovation mentioned in the programme. ▪ Matching fund from Chinese government: Yes, funding process depending on the specific Chinese province

3. Joint Activities with China in 2015

Czech-Chinese inter-governmental science and technology cooperation

Within the implementation framework of the Agreement on Science and Technology Cooperation concluded between the Government of the Czech Republic and the Government of the People's Republic of China on 1st June 1995, the Ministry of Education, Youth and Sports of the Czech Republic and the Ministry of Science and Technology of the People's Republic of China announce

every two years a call for Czech-Chinese joint research project proposals. Eligible applicants on the Czech side are research organisations and small- and medium-sized enterprises while the calls are focused on basic / fundamental and applied research developed in all scientific fields. Currently, there are 13 Czech-Chinese joint research projects in their implementation phase (2014 – 2016) approved by the Czech-Chinese Joint Committee on Science and Technology Cooperation formed by representatives of both partner Ministries.

Programme Title	Contents
<p>Czech-Chinese Research Projects Programme</p>	<ul style="list-style-type: none"> ▪ Activity (Programme) Outline: Financial support for implementation of the Czech-Chinese joint research projects granted by the Ministry of Education, Youth and Sports of the Czech Republic and the Ministry of Science and Technology of the People’s Republic of China ▪ Major topic or agenda: Funding the Czech-Chinese joint projects developed in the areas of basic / fundamental and applied research in all scientific fields ▪ Target Participants: Research organisations, small- and medium-sized enterprises

4. Others

There exists a direct cooperation between number of Czech research institutions and Chinese partners. Some examples of cooperation are listed in the table below:

* Key Research Organisations and Companies

Organisation Name	Detailed information
<p>The Czech Academy of Sciences (http://www.cas.cz/index.html)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: geology, applied physics, ICT, astronomy, chemistry, biology, environmental studies, economy, modern history, oriental studies, international relations, ▪ Major Activities with China: The Czech Academy of Sciences cooperates in a long-term with the following institutions : <ul style="list-style-type: none"> - Chinese Academy of Sciences - Chinese Academy of Social Sciences - National Natural Science Foundation in China
<p>Czech Technical University in Prague/Faculty of Electrical Engineering (https://www.fel.cvut.cz/en/)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: Electrical Engineering ▪ Major Activities with China: cooperation in the framework of joint Czech-Chinese research centre based at the Czech Technical University in Prague , Faculty of Electrical Engineering

<p>Crop Research Institute (http://www.vurv.cz/?p=index&site=default_en)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: Plant protection, plant breeding
<p>Research Institute of Fish Culture and Hydrobiology /University of South Bohemia in Ceske Budejovice (http://www.frov.jcu.cz/en/research-institute-fish-culture-hydrobiology)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: fish culture
<p>Veterinary Research Institute (http://www.vri.cz/en/)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: biotechnology, cattle breeding ▪ Major Activities with China: cooperation with Anhui Agricultural University
<p>Agrovýzkum Rapotín Ltd. (http://www.vuchs.cz/agrovyzkum-rapotin/index.php)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: soil study ▪ Major Activities with China: cooperation with Northwest A&F University (Prof. Tong) in the framework of Horizon 2020
<p>Research Institute for Fodder Crops, Ltd. (http://www.vupt.cz/en/english/basic-information/)</p>	<ul style="list-style-type: none"> ▪ Organisation type: Research Organisation ▪ Major Research Area/Product: plant breeding, genetics ▪ Major Activities with China: cooperation with Heilongjiang Academy of Agricultural Sciences
	<ul style="list-style-type: none"> ▪ FOR MORE INFORMATION ON SCIENCE, TECHNOLOGY AND INNOVATION ORGANIZATIONS IN THE CZECH REPUBLIC PLEASE SEE A CZECHINVEST AGENCY MATERIAL: http://czechinvest.org/data/files/randd-brozura-komplet-web-4970.pdf

* The organisations/companies should be present in China or having active cooperation programmes with China.