



INDUSTRIAL BIOTECHNOLOGY IN THE CZECH REPUBLIC

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INTRODUCTION

The Czech Republic has a famous brewery tradition and used to be very strong in traditional biotechnology, particularly in fermentation. It was also a pioneer of antibiotic production (penicilin).

Today, the Czech Republic is lagging behind and has limited advanced biotech research, little biotech intellectual property and few high-tech biotech SMEs.

However, the sector is growing and industrial biotechnology is being seen as an opportunity to reinforce Czech competitiveness. The Czech Republic benefits from a well established education system with well qualified and affordable manpower as well as a Government that is increasing R&D funding. At the same time, academia and industry are working to establish a new cluster of Czech biotech companies and discussions on going about the construction of an open-to-all pilot facility.

I. RESEARCH AND INNOVATION

Modern industrial biotechnology is a relatively new discipline, with major areas of knowledge still to be explored. Public support to research as well as the establishment of pilot and demonstration facilities to scale-up individual processes will therefore help in the development of a European bio-based economy.

A. Public research funding

The Czech Republic used to be very strong in traditional biotechnology notably in fermentation.

The “Expert Commission for life sciences” of the Czech Research and Development Council² determined molecular biology and biotechnology as one of its main long-term research directions. The Council is in charge of putting together the long-term strategic research agenda for molecular biology and biotechnology in the Czech Republic. The proposal needs to be approved as a part of the overall allocation by the government and / or by the responsible ministry.

The Council of the Government sets the budget for R&D, the area where applications for funding for projects in industrial biotechnology can fall.

From 2011 the Technology Agency of the Czech Republic will be allocating research budgets for applied research. In order to estimate the public funding needs for biotechnology, the Agency is consulting the directors of the largest Czech biotech companies.

Today there is no specific public research funding for industrial biotechnology.

More generally, public funding for research are granted by these institutions:

- Ministries: the main funding source is the Ministry of Education, Youth and Sports³ as well as the Ministry of Trade and Commerce⁴ and the Ministry of Agriculture⁵. Other ministries are supporting research but at a much lower level.
- Grant Agency of the Czech Republic⁶ funds basic research
- Grant Agency of the Academy of Sciences⁷ is currently funding basic research, but this support is to be shut down and no new class for applications will be open.
- EU funding in the frame of R&D Framework Programmes⁸

Biotechnology research and development is mainly concentrated in the regions of Prague and Brno. More than 56 000 students are undertaking life sciences studies. This represents approximately one sixth of the total students in the Czech Republic.

B. Pilot and demonstration plants

i. pilot plants

There are no pilot plants for industrial biotechnology in the Czech Republic.

² <http://www.vyzkum.cz/Default.aspx?lang=en>

³ <http://www.msmt.cz/>

⁴ http://www.mpo.cz/default_en.html

⁵ <http://www.mze.cz/en/>

⁶ <http://www.gacr.cz/>

⁷ <http://www.gaaav.cz/en/>

⁸ <http://cordis.europa.eu/>

A proposal for the construction of an open to all / partly open pilot plant is currently under discussion. This initiative is led by the newly founded Institute of Biotechnology AS C. v.v.i. Commercial partners (Lonza⁹, Sevapharma and CPN a.s.), as well as the governmental development agency CzechInvest and the Institute of Microbiology AS CR, v.v.i. are involved in the project.

ii. demonstration plants

There are no demonstration plants for industrial biotechnology in the Czech Republic.

⁹ http://www.lonza.cz/website_lonza_czech/welcome.html

II. POLICY

Public authorities can promote the quick take-up of industrial biotechnology innovations by implementing a number of “instruments” or policy initiatives. This can be the improvement of the regulatory framework; the integration of specification for bio-based products in public procurement; the establishment of standardisation, labelling and certification schemes to overcome perceived uncertainty about product properties and weak market transparency; the development of financial instruments and supports to increase investments into research, technology development and innovation as well as the elaboration of communication and information campaign to communicate the benefits of bio-based products to users.

A. Policies and regulations

There is no specific policy or action plan supporting industrial biotechnology in the Czech Republic.

In February 2008 the Czech Government approved a multiannual programme supporting biofuels in road transport. This action plan was prepared by the Ministry of Agriculture.

The long-term strategic research agenda for molecular biology and biotechnology in general is defined by the Council of the Government for R&D.

The use of and handling of genetically modified organisms is regulated by Act No. 153/2000¹⁰ and by the Act No. 78/2004¹¹.

B. Public procurement

Specific public procurement for bio-based products does not exist.

The Czech Government is supporting green public procurement on a voluntary basis.

C. Standardisation, labelling and certification

There is no recognised national labelling, certification or standardisation scheme for bio-based products in the Czech Republic.

The labelling of biotechnology crops and product follows EU legislation.

Biofuels quality and norms are checked by the Czech business inspection¹².

D. Access to finance

The Czech authorities allow investment incentives for three types of projects of which research and development projects that encourage the establishment or the expansion of a development centre aimed at research, development and innovation of products and technologies¹³.

The main source of support is EU structural funds.

¹⁰ www.oecd.org/dataoecd/52/12/1940923.pdf

¹¹ [www.mzp.cz/www/webdav_biosafety.nsf\\$files/Biosafety/pdf/actno-78-2004.pdf](http://www.mzp.cz/www/webdav_biosafety.nsf$files/Biosafety/pdf/actno-78-2004.pdf)

¹² <http://www.col.cz/>

¹³ <http://www.czechinvest.org/en/financial-support-for-investment>

E. Communication

There are several national societies, which handle communication regarding (industrial) biotechnology. However, there is a great deal of room for improvement (cf. the recommendation listed in the summary of the roundtable on industrial biotechnology in the Czech Republic, Brno, 14-15 May 2008).

Recently, the newly established Institute of Biotechnology of the Academy of Sciences of the Czech Republic started to organize a Czech biotech cluster– CzechBio, putting the groundwork in place for a Czech national biotech association. The Institute is working with Czech Invest on this initiative.