



INDUSTRIAL BIOTECHNOLOGY IN ESTONIA

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INTRODUCTION

In 2007, there were 55 biotechnology companies active in Estonia and this number is increasing every year. Estonian biotech companies can rely on a strong research base in the field of biotechnology as well as on a well structured network of biotech actors (national association and Scanbalt). Today, the Estonian biotech sector is still in its incubation phase. The main competences of Estonian biotechnology lie in medical biotechnology – immunology, genomics and cancer research. Industrial biotechnology is also rather developed both on the research and industry side, including biochemistry, organic synthesis, environmental and food biotechnology. This interest in (industrial) biotechnology has recently been recognised by the Estonian Strategy for Research and Development 2013 which marked biotechnology as a key technology for the country.

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 total volume of funding of Estonian research and development (R&D) activities has increased from 0.61% of GDP in 2000 to 0.94% of GDP in 2005. Nevertheless, Estonia falls considerably behind the EU average, 1.85 % of GDP in 2005. Estonia has set an objective to take R&D funding up to 1.9% of GDP by 2010 and 3% in 2014. A noteworthy positive trend is the intensive growth of R&D investments from the private sector; in 2005 the private sector investments into R&D was 45.1% of the total R&D support.

Currently, in term of R&D support in Estonia, there are only sector-neutral programmes and no specific focus or sub-budgets for key technologies/key sectors.

The Estonian Science Foundation² allocates research (i.e. science grants) to private persons and research groups in public competition.

Also, at the beginning of 2009 Estonia plans to launch a thematic R&D programme on biotechnology which has been identified as one of the key technologies in the R&D and innovation strategy 2007-2013 "Knowledge-based Estonia"³. The concept of the future R&D programme means that the currently sector-neutral support programme will have an earmarked part of the budget targeted for the implementation of the activities of the biotechnology R&D programme.

Research and development in Estonia:

http://www.smartestonia.ee/public/files/Guide_2007_final.pdf

B. Pilot and demonstration plants

i. pilot plants

a) Open to all

Tartu

Bioconversion research facilities in the Laboratory of biochemistry and environmental chemistry	
General, products, feedstocks	This laboratory has basic equipment for studies of methanogenesis (anaerobic degradation reactors up to 20 litres) and supporting lab equipment for chemical analyses (gas chromatographs, spectrophotometres, equipment for image analyses, etc).
Services	Access to the lab and its facilities is not restricted to researchers from outside.
Financing	The cost of the facilities is approx 300 000 euros. The funds to build the facilities were provided by public sector (60% Estonian University of Life Sciences), 40% Governmental Agency- The centre of Environmental Investments).
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² <http://www.etf.ee/>

³ <http://www.hm.ee/index.php?popup=download&id=7669>

b) Partly restricted

c) Restricted

ii. demonstration plants

There is no demonstration plant for industrial biotechnology processes.

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 dedicated policy or regulation for industrial biotechnology in Estonia.

In “The Estonian Strategy for Research and Development 2002-2006”, biomedicine was defined as one of the three key areas in the country’s economy. The follow-on document for 2007-2013 has extended the status of “strategic key technology” to biotechnology in general. The aim of the current strategy document is to increase R&D investments to 3.0% of GDP.

B. Public procurement

There is no national action plans on green procurement.

C. Standardisation, labelling and certification

Estonian authorities are using labelling methods (notably for hotels via the Green Key label as well as for organic products). However, there is no standardisation, labelling and certification scheme for bio-based products.

D. Access to finance

Enterprises Estonia is the main provider of funding support for innovation and development.

- The R&D Financing Programme⁴ supports feasibility studies, applied research and product development. It provides opportunities to launch new or improved products and services. The programme creates a foundation for the advancement of business competitiveness by introducing new and improved products and services to the market and implementing new technologies. The Government participates by offering financial support through the programme and sharing in the technological and marketing risks related to the projects.
- The Export Marketing Programme⁵ aims to improve competitiveness through well planned, targeted and integrated marketing activities.
- The International Cooperation Networks Programme⁶ helps to find organizations that can partner to carry out international research and product development projects as well as engage in technology transfer.

⁴ <http://www.eas.ee/?id=1224>

⁵ <http://www.eas.ee/?id=1146>

⁶ <http://www.eas.ee/?id=1239>

The Tartu Biotechnology Park and its business incubator provide physical infrastructure as well as business development and consultancy services to companies and R&D institutions in the fields of biotechnology, medicine and veterinary medicine. It supports companies in finding co-operation partners and is active in the establishment process of new companies.

Tehnopol,⁷ a technology park in Tallinn hosts industrial biotechnology companies among its 140 companies. Among other services Tehnopol also facilitates investments.

E. Communication

Biotechnology enterprises are represented by the Estonian Biotechnology Association⁸.

⁷ www.tehnopol.ee

⁸ <http://www.biotech.ee/>