

**Summary of the Roundtable on
Industrial Biotechnology in Lithuania**

4 September 2008, Vilnius

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Introduction

The roundtable on industrial biotechnology in Lithuania took place on the 4th of September 2008 in Vilnius (Artis Centrum Hotel). The event was initiated by EuropaBio in the framework of the European Technology Platform on Sustainable Chemistry - "SusChem".

The roundtable has been locally organised by the Lithuanian Institute of Biotechnology.

Participants to the roundtable were representatives from academia, enterprises, development agencies and ministries/government bodies with an interest in the field of biotechnology (see Annexes).

Roundtable on industrial biotechnology in Lithuania

- Virginija Būdienė (Ministry of Education and Science) welcomed participants to the roundtable and briefly described the situation of biotechnology in Lithuania. Camille Burel (EuropaBio) thanked participants to take part in the roundtable and explained the objectives of the meeting.
- A tour de table was organised to let participants introduce themselves.
- Kęstutis Sasnauskas (Institute of Biotechnology) presented a global overview of biotechnology in Lithuania. Modern biotechnology started in Lithuania in 1961 with the first programme of biochemistry studies at the University of Vilnius. When Lithuania gained its independence, the Institute of biotechnology was established. He then presented enterprises active in the field. 4 of them are spin-off from the Institute of Biotechnology and 3 of these enterprises are today the leaders of the Lithuanian modern biotechnology industry.
The Lithuanian National Biotechnology Platform gathers together academia and industry. It has been established in July 2006 and distinguishes two main priority areas: industry and agricultural biotechnology as well as pharmaceutical biotechnology.
Finally, he presented programme supporting biotech research and their funding as well as the main research centres (institutes and universities). In July 2007 has just started the Lithuanian Industrial Biotechnology programme which beneficiates from € 8,7 million.
- Rolandas Kriščiūnas (Ministry of Finance) presented structural funds for research and innovation in Lithuania. He firstly introduced structural funds in general and the way they are managed in Lithuania. Two operational programmes are relevant to further support biotechnology in Lithuania: development of human resources and research and development for competitiveness and growth of the economy. Both programmes included several measures that allocate funds to research and innovation.
Finally he explained how to submit a proposal for EU assistance in the framework of the structural funds and gave some advices.
Discussions after this presentation stressed the fact that there are lots of restrictions in the use of funds allocated, notably due to procedures and bureaucracy. Participants said that there is a need to change the paradigm of management and go for „process management“ which could notably help in saving time.
- Arūnas Keraminas (Ministry of Economy) presented the policies supporting industrial biotechnology in Lithuania. He firstly presented a general overview of policies supporting innovation, enterprises, research and technologies. In 2006, high and medium-high technology sectors represented 20,8% of the industry contribution to the Lithuanian GDP of which a large part comes from the biotech sector.
Two of the 5 priority trends of the Research and Development in Lithuania are related to biotechnologies.
Finally he presented the policies supporting innovation and R&D in Lithuania, notably the structural funds and some financial engineering measures such as risk capital funds, micro loans, guarantees, etc.
- Maurice Lex (DG Research, European Commission) presented biotechnology and the Knowledge-Based Bio-Economy (KBBE) in the 7th Framework Programme for Research and Development. More specifically, he presented
 - The major trends/challenges affecting bio-economy today and the current situation

- The European Life Sciences and Biotechnology Strategy for Europe and its review in 2007.
 - A general picture of FP7 as well as KBBE thematic that are covered by FP7.
 - Some statistics on the first and second calls in the field of biotechnology as well as the way work programmes are prepared and the evaluation processes
 - The main lines of the 3rd call that had just been published as well as some elements on the joint biorefinery call.
 - The different platforms and networks related to biotechnology in Europe. He notably stressed the fact that that success will depend on coordination and mobilisation of all actors.
 - The lead market initiative for bio-based products that has been announced by the Commission in December 2007.
- Camille Burel (EuropaBio) presented the Technology Platform on Sustainable Chemistry (SusChem) and the Strategic Research Agenda for Industrial Biotechnology. The Industrial Biotechnology section ensures a coherent policy framework and the most effective use of R&D resources. It guarantees that biotechnology is properly integrated in the chemical industry. She presented the impact of industrial biotechnology on the knowledge based-bioeconomy and its potential (notably environmental).

The strategic research agenda that has been developed by SusChem looks into the future impact of Industrial Biotechnology and lays out the major research areas which must be addressed to move from a flourishing set of scientific disciplines to a major contributor to a future knowledge-based economy. It focuses in particular on the research needed to underpin three broad topics: biomass, bio-processes and bio-products, including bio-energy. Finally, she presented the different initiatives that exist in industrial biotech research: ERA-IB and KBBE-NET saying like Maurice Lex that critical mass and leadership are needed to create a true knowledge based bioeconomy.

She also presented the Policy Agenda for Industrial Biotechnology developed by EuropaBio and briefly the Lead Market Initiative that was adopted by the European Commission in December 2007. The Policy Agenda developed by SusCshem aims to:

 - establish a coherent European Policy Agenda for tse Knowledge Based Bioeconomy (KBBE)
 - stimulate and support innovation in plant science and industrial biotechnology
 - promote production and use of bio-based products and processes
 - create awareness amongst all stakeholders
 - improve investment in IB SME's

She also stressed that cooperation is needed between ALL actors (research, agriculture, enterprises, environment...) and at all levels (local, regional, national, european...) to ensure a coherent, consistent and certain framework supporting bioproducts and industrial biotechnology.
 - Arvydas Janulaitis (Fermentas Intenational Inc.) presented his company. Fermentas is a world leader in developing and manufacturing of molecular biology products which are used in genetic engineering, cloning, diagnostics and other fields of biotechnology. He noted that the company has created a global distribution network: today Fermentas sells over 700 products to more than 70 countries. After introducing Class D Clean-Room Facilities in 2007, the company is also booming in a medical molecular diagnostics market.
 - Rolandas Meškys presented the state of enzyme research for industrial biotechnology in Lithuania (R&D started more than 40 years ago). He firstly explained the role of enzyme and the state of development today. Then he presented the main research centres/programmes that are developing, improving and screening enzymes as well as working on bioelectrocatalysis.

Finally, he proposed a swot analysis of the industrial enzymes R&D situation. He said that Lithuania has a strong tradition in terms of researcher but has difficulty to commercialise research results. He also noted the lack of appropriate political support and the lack of investment. However, he stressed two positives opportunities with the “national programme development of industrial biotechnology in Lithuania 2007-2010” and the “national programme biotechnology and bio-pharmacy 2008-2013”.

- Vladas Bumelis (Sicor Biotech) presented a general overview of the biopharmaceutical sector in Lithuania. He then introduced Sicor Biotech, the Lithuanian leader in the sector. Sicor biotech mainly produces biosimilar products.
- Violeta Makarevičienė (Lithuanian University of Agriculture) presented the R&D, problems and prospects in the Lithuanian biofuels industry. She situated Lithuania in the European situation and noted that 50% of the current fuel consumption could be replaced by biofuels. At national level, there are three national technology platforms dealing with biofuels at national level (“biofuel for transport”, “biomass and biofuel” and “biotechnology”). Finally, she presented the current research in the field at the Lithuanian University of Agriculture.
- Danas Tvarijonavičius (Malsena AB) presented the state of biopolymers for non-food research and application and the research that is currently done in Lithuanian Universities and in his company. He concluded his presentation levering some R&D problems and proposing some solutions to speeding-up commercialisation and development of the sector.
- Vidmantas Stanys (Lithuanian Institute of Horticulture) presented the feedstock resources in Lithuania. He said that today only 20 species (on more than 20 000) provide 90% of our food and that many other plants could be used. After a contextualisation of the raw material availability in the world, he presented the Lithuanian situation where 20 million tons of biomass is produced every year. Finally, he presented 7 projects of biomass improvement with industrial biotechnology application objectives.
- Saulius Grigiškis (JSC Biocentras) presented his company which work in the field of environmental biotechnology. He presented 4 projects the company is working on (oil pollution clean up of environment from oil pollutants; purification of leachate from dumpsites; development of sorbent materials; accident management system).

The end of the roundtable was dedicated to discussions between participants to the roundtable. This was the occasion for industry and academia representatives to discuss with government representative on how to further develop and support industrial biotechnology in Lithuania. The roundtable ended with a press conference and a dinner.

SWOT analysis of (industrial) biotechnology in Lithuania

Strengths

- Very strong academia / research in biotech
- Good level of scientists
- Organised sector (association)
- Labour costs

Weaknesses

- Lack of communication campaign
- R&D funding / R&D from private sector
- Lack of understanding of biotech specificities by decision makers
- bring research results to marketable products
- lack of appropriate political support
- rather limited resources in term of biomass

Opportunities

- Structural funds
- State aid scheme rules
- Industrial Biotech development in Lithuania Programme for 2007-2010 (€ 5,8 million)
- National biotechnology platform
- Lithuanian High Tech Programme
- Compensation of patenting related expenses (cf. ministry of economy)
- Current debate on legal improvement regarding tax incentives

Threats

- Lack of funding
- Seeds funding / risk capital / death valley between R&D and Access to market, lack of investor interest
- Lack of links, connections and contacts between industry and research
- Bureaucracy and restrictions in the use of allocated funds.

Recommendations

- Participants to the roundtable recognised the benefits of structural funds for the establishment of new infrastructures and their renovation. They stressed that the costs of one hour of research in Lithuania is still 40% cheaper than the EU research average cost but that more financing and partnerships is needed for day to day research
- Academia and industry underlined that more fund and incentive for applied science are needed.
Participants also noted that scientists are currently only evaluated on scientific papers they published and this situation does not encourage researchers to transform knowledge to products that lead to commercially viable business. Generally, participant agreed that there is a lack of incentives to pass the border from science to business
- Industry participants to the roundtable noted that one of the major problems is the pre-industrial process (scale-up) development and that demonstration plants were needed to develop and test new processes and products.
- From collaboration comes success. During the roundtable, it has been stressed that more collaboration and team working was needed between universities; between enterprises and between universities and enterprises. The lack of understanding and contacts between industry and the research world has been underlined as a key hurdle to further industrial biotech development. Participants agreed to say that there is an urgent need to have business and universities more integrated.
- Industrial biotechnology is a long term risky business where returns are not always guaranteed. Participants to the roundtable agreed to say that the current improvements in term of tax and incentives legislation go in the right way but that further incentives to attract investors (seeds capital and venture capitalists) would be very welcomed.
- Biotechnology research, development and commercialisation is a long term process that need predictability and vision. Therefore, it is important for researchers and industry to be sure of the long term political support of the Lithuanian Government.
- Regarding structural funds and management of projects, participants said that there is a need to change the paradigm of management and go for “process management” which could notably help in saving time and avoid unnecessary bureaucracy.
- To meet the challenges to become competitive in the global world Lithuania seeks to complement the supply-side innovation measures with the demand-side policies.

Annexes

Programme

Thursday 4 September 2008 – Roundtable on industrial biotechnology <i>Artis Hotel, Vilnius</i>		
Session I	Chairperson: Virginija Būdienė	
9.00 – 9.10	Opening	
9.10 – 9.25	Introduction of participants	
9.25 – 9.45	Biotechnology in Lithuania. An overview	<i>Kęstutis Sasnauskas</i>
9.45 – 10.05	Structural funds for research and innovation	<i>Rolandas Kriščiūnas</i>
10.05 – 10.30	The policies supporting Industrial Biotechnology in Lithuania	<i>Arūnas Keraminas</i>
Coffee Break		
Session II	Chairperson: Valdas Laurinavičius	
11:00 – 11:25	Biotechnology in FP 7	<i>Maurice Lex, European Commission (DG Research)</i>
11:25 – 11:55	SusChem platform, the Strategic Research Agenda & Policy Agenda	<i>Camille Burel, EuropaBio</i>
11:55 – 12:10	Molecular tools for molecular biology and medicine	<i>Arvydas Janulaitis</i>
12:10 – 12:25	Enzymes for Industrial Biotechnology	<i>Rolandas Meškys</i>
Lunch		
Session III	Chairperson: Gervydas Dienys	
13:30 – 13:45	Recombinant protein therapeutics	<i>Vladas Bumelis</i>
13:45 – 14:00	Biofuels – research and development, problems and prospects	<i>Violeta Makarevičienė</i>
14:00 – 14:15	Biopolymer based non-food products	<i>Danas Tvarijonavičius</i>
14:15 – 14:30	Feedstock resources for Industrial Biotechnology	<i>Vidmantas Stanys</i>
14:30 – 14:45	Environmental biotechnology	<i>Saulius Grigiškis</i>
14:45 – 15:30	Discussion and evaluation of the meeting	
Coffee Break		
15:50 – 16:30	Press conference	
Dinner (at “Artis” hotel)		

List of participants

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