

**Draft Summary of the Roundtable on
Industrial Biotechnology in Hungary**

4 December 2008, Budapest

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Introduction

The roundtable on industrial biotechnology in Hungary took place on the 4th of December 2008 in Budapest (Novotel Budapest Congress). 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 Hungarian Biotechnology Association.

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 Hungary

- Kornel Kovacs (University of Szeged, Department of Biotechnology) welcomed participants and presented the general objectives of the roundtable:
 - obtaining a better understanding of industrial biotechnology in Hungary
 - presenting the main actions and policies at European level
 - discussing the ways and means to further support industrial biotech in Hungary.
- Monika Sormann (European Commission, DG Research) presented biotechnology and the Knowledge-Based Bio-Economy (KBBE) in the 7th Framework Programme for Research and Development.

She firstly explained what is knowledge-based bio-economy and presented the major trends and challenges in the field: changing patterns in world trade; coping with climate change; feeding the increasing world population; increasing environmental considerations and a shifts in energy supply.

She also resumed actions that were undertaken at European level: stakeholders conference; establishment of networks (KBBE-net, COMP BIO-net, ERA-net IB); European Strategy for Life Sciences; Lead Market Initiative for Bio-based products.

Then, she made a global introduction to the seventh framework programme for research and development (FP7). The cooperation programme of the FP7 dedicates nearly 2 billion to the theme 2: Food, Agriculture and Fisheries and Biotechnologies.

She also presented how FP7 calls are prepared and the rationale as well as the objective for the KBBE in the FP7. Then, she showed some statistics about the participation of new Member States in the Framework Programme. It appears that Hungary is one of the best students of the class in term of responses to calls and participants in consortia.

Then, she introduced the calls that are currently open (calls 2009) and the planning for approval of the 2010 calls. The Commission expects to publish the 2010 calls in July 2009.
- Dirk Carrez (EuropaBio) introduced the European Biofuels Technology Platform as Member of its Steering Committee.

He firstly presented the history of the platform and its structure. The Platform was established in 2005 with several stakeholders (farmer, forest industry, universities, etc.). Like other European Technology Platform, the Biofuels one developed a vision document, a strategic research agenda and an implementation agenda.

 - The vision document states that by 2030, at least 25% of transport fuel could be covered by CO₂- efficient biofuels and that a substantial part could be provided by a competitive European industry.
 - The strategic Research Agenda stresses that three main areas of technology development are critical to ensure successful development of sustainable biofuels in the EU: feedstock, technologies and logistics and end-use technologies. According to the platform, the winning options will be those best addressing strategic and sustainability targets (high level of GHG reduction with sound management of other key environmental issues; security and diversification of energy supply for road transport; economic competitiveness and social acceptance)
 - The implementation Agenda calls for a coherent, long term and harmonised political and open market framework as well as Joint public/private financing for R&D and Demonstration. It also mentions that biofuels quality standards need to be based on sound science and that a simple, coherent and global certification system is needed.

- Dirk Carrez (EuropaBio) presented the work done by the industrial biotech section of SusChem: an European Strategic Research and Policy Agenda for Industrial Biotechnology.
He firstly introduced the bio-based economy by presenting its concept (integrated biorefinery, industrial biotech in the chemicals system) as well as the barriers and drivers for bio-based products in Europe. He also presented some market figures for bio-based products in Europe (it is expect to reach 10% of chemical sales by 2010 according a McKinsey study).
He then presented the Vision, Research and Policy Agendas developed in the framework of the Technology Platform on Sustainable Chemistry (SusChem) which objectives are to boost sustainable chemistry, industrial biotechnology and chemical engineering research, development and innovation in Europe.
The strategic research agenda 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.
The Policy Agenda developed by SusChem aims to establish a coherent European Policy Agenda for the KBBE (he showed several slides with all legislations and policies having and impact today on the sector). The Policy agenda also wants to stimulate and support innovation in plant science and industrial biotechnology; to promote production and use of bio-based products and processes; to create awareness amongst all stakeholders and to improve investment in IB SME's
Finally, he introduced the Lead Market Initiative (LMI) that was adopted in December 2007 by the European Commission and endorsed by the Council in March 2008. The LMI for Bio-based products aims at turning industrial production to a more sustainable way and builds on key European strength: excellent biotechnology research base; strong chemical and enzyme industries; availability of biological resources; strong political support for advanced concepts of sustainable production.
- Gábor Szabó (Hungarian Association for Innovation and University of Szeged) introduced the innovation policy in Hungary.
The Hungarian Association for Innovation regroups around 500 members of which the Hungarian Biotechnology Association.
According to the association, Hungarian innovation capacity goes down because innovation capacity drivers are going lower: science and engineer degree, high education degree, broadband penetration and youth education attainment. He pointed out that Hungary is below the EU average in term of science and engineer degrees. He also said that, according to a company survey in Hungary, the main bottleneck in innovation is the lack of highly qualified human resources.
Although Hungarian innovation capacity drivers are becoming lower, the country is fairly good in applications because of the attraction of direct foreign investment ("imported technology"). Also, he stressed that if we compare Hungarian innovation results to Hungarian innovation capacity drivers, the country has a fairly good result.
Currently, the investment balance in innovation between business and State is 1:1. Mr Szabó also said that the support system is continuously changing and that the governance is fragmented. However, he noted some ameliorations and potential for improvement. Indeed, in March 2007, the Hungarian Government adopted a new R&D strategy and an action plan. But as of May 2008, no action had been implemented. To overcome fragmentation in the R&D&I policy, the Government has recently (June 2008) nominated a Minister for R&D who will be in charge of the R&D and Innovation policy of Hungary (before, R&D&I was managed by 3 Government institutions: Ministry for education, Ministry for Economy and the National Development Agency).

- Finally, he stressed that most of the necessary support instruments exist but are not used in a coherent way (notably the slow financial processing of grant allocations).

- Gergely Maróti (BayGen Institute, Bay Zoltán Foundation for Applied Research) presented the viewpoint of a research on industrial biotechnology in Hungary.
First, he shortly described the R&D support system in Hungary (managed by the National Office for Research and Technology, National Development Agency). From his point of view, the system is working quite well for traditional sectors/industries but it seems that it has some difficulties to adapt to biotechnology specificities (huge capital demand, high risk and novelty of technologies).
He said that due to its characteristics, white biotech needs multi-year plans and multi-level programs and explained it through the example of a US DOE project for hydrogen.
He concluded saying that the R&D support system in Hungary is too fragmented. He said that dedicated long term (+5 years) calls for comprehensive competitive areas (5+ years) are needed. These calls should be multidisciplinary (biotech, engineering, chemical, physical sciences, etc.) and regroup a large number of participants. He also noted that cooperation should be further enhanced and that the information flow between industry and researchers shall be improved.

- Attila Kovacs (First Hungarian Biogas Ltd) presented the viewpoint of an enterprise on industrial biotechnology in Hungary.
Hungary has a competitive position and high development potential in red biotechnology as the Hungarian pharma industry has a long standing scientific and manufacturing tradition with strong domestic industrial base and global market presence.
Industrial biotechnology is very limited in Hungary and this is mainly due to the fact that the sector is lacking an established domestic industrial base which could support its development and finance its R&D activity. Today, the main industrial biotech activities in Hungary are based on technology transfer from abroad. Also, the research activity which is limited is mainly carried out in universities and not linked to industry needs.
He then presented a few examples of white biotech enterprises active in Hungary (Corax Bioner, Hungrana) as well as the state of the biogas industry which is increasing in the last few years.
From his point of view, the main problems / barriers toward the development of industrial biotech in Hungary are the fact that spin-off activities are not supported; that specific industrial biotech focused funds are non-existent; that there is a lack of seed- and early stage private financing; that domestic R&D is totally dependent on scarce public funding and that the technology transfer is very limited.

- András Bakács (Ministry for National Development and Economy, Department for Knowledge Economy) presented the present and future of industrial biotechnology in Hungary.
Firstly, he said that the Hungarian Government does care of the biotech sector in Hungary and mentioned that there is now a special minister for R&D&I.
He shortly summarised the consequences of the financial crisis on the Hungarian economy which seems to be very vulnerable to global turbulences.
The Hungarian Government is currently developing a new long term Development strategy with sector specific strategies. The strategy selected high priority, knowledge-intensive sectors with high growth and value added capacity that contribute to the competitiveness of the economy. Biotechnology has been defined a specific sector in this new policy. The sector specific priorities are reflected in the 2008-2010 action plan of the current Government.

Finally he said that it is also in the objective of the Government to combine this new strategy with existing ones (strategy for the development of SMEs, development of foreign trade policy, strategy for science technology and innovation policy).

The afternoon of the roundtable was dedicated to discussions on the situation of industrial biotechnology in Hungary and the ways and means to further develop the sector in the country (cf. recommendations below).

SWOT analysis of (industrial) biotechnology in Hungary

Strengths

- Good level of education and research (in general) (cf. level of sc. publications)
- high level of development in red biotech
- Biomass availability
- Presence of an Innovation association
- Large number of Hungarian participants in FP7 calls (cf. stats DG Research presentation)

Weaknesses

- Missing an well established domestic industrial base which could endorse IB
- Lack of innovation / Lack of S&E degrees
- Death valley of innovation problem / technology transfert is very limited
- Lack of funding (VCs, Seeds funding) for innovation
- Incubation infrastructures exist but do not run properly.
- Low level of patents (patenting is not seen as reward of research, scientists are evaluated on publications).
- Lack of link between industry and academics
- Lack of R&D funding (and R&D is totally dependent on State support)
- Lack of management skills

Opportunities

- Presence of a biotechnology association
- Structural funds
- State aid rules
- New Ministry for R&D
- Incubation infrastructures (?)
- Encouraging measures are slowly introduced
- NFGM (ministry for national development and economy) strategy (under development) which selected biotech as one key priority – biotech strategy (?)

Threats

- Fragmented governance / Lack of coherence in policy
- Lack of stability/continuity in support
- Bureaucracy
- Slow financial processing

Recommendations

R&D&I

- Participants to the roundtable mentioned the lack of science and engineer degrees in Hungary. From a general point of view, they regretted the low number of science students as well as the poor education of the population towards science and technology. The Government should encourage students to start degrees in science. More globally, it should increase the awareness of the population for science and technology via communication campaign.
- It appears that researchers and entrepreneurs were missing information on support programmes available at national and European level although the Government is organising information day, etc. Some participants said that the Government should use other communication channels to reach researchers and enterprises.
- Participants said that funds for research are fragmented in too many programmes. They also said that the value of R&D projects should be better assessed and better controlled at the end. Among other, the output could be commerciable. In this purpose also, research funding authorities shall take into account industrial biotech research specificities (long term research and need for large amount of capital).
- Participants agreed to say that even though communication between industry and academia has improved in the last years, ameliorations still need to be done. There should notably be a better evaluation of the concordance between research and industry needs in term of research. The establishment of consortium between research and industry (public private partnerships) could help in solving this problem.
- Participants came to the conclusions that Hungary is missing managers educated to biotech specificities. They also said that there is enough funding but that it is difficult to obtain it for two reasons: the bureaucracy and the lack of management. They called for more management education.

Policy

- Participants regretted the poor involvement of professional associations in the decision making process due to the quite “closed” position of the Government. They called for a more open decision making process with more input from stakeholders.
- One of the main problems underlined during the roundtable is the communication. Dissemination of benefits of industrial biotechnology should be broader. There is a need to increase citizens and industries awareness of benefits and advantages of (industrial) biotechnology to stimulate the market.
The communication should also be improved between actors of the (white) biotech sector.
- Participants pointed out the political instability, the lack of coherence between policies, the bureaucracy and the lack of continuity in support as key barriers for the development of (industrial) biotechnology in Hungary. They agreed on the fact that to develop (industrial) biotechnology at market scale, a strong political commitment is needed. A national policy/strategy supporting biotechnology could strongly help in reaching this objective.
- They also stressed that important improvements are needed to reduce the bureaucracy and the slowness of the process to obtain financing.

Annexes

Present and Future of Industrial Biotechnology in Hungary

Novotel Budapest Congress, Budapest, 4 December 2008

(1123 Budapest, Alkotás u. 63-67.)

Programme

08:45-09:15	Arrival, registration and refreshment	
09:15-09:25	Introduction and opening	<i>Dr. Kornél Kovács, Head of Industrial Working Group, HBA</i>
09:25-09:50	The Knowledge Based Bio-economy (KBBE) and Industrial Biotechnology	<i>Dr. Monika Sormann, European Commission – DG Research</i>
09:50-10:10	Introduction of the European Biofuels Technology Platform	<i>Dr. Dirk Carrez, EuropaBio</i>
10:10-10:40	A strategic research and policy agenda for industrial biotechnology	<i>Dr. Dirk Carrez, EuropaBio</i>
Coffe break		
11:00-11:20	Innovation policy in Hungary	<i>Dr. Gábor Szabó, Hungarian Association for Innovation</i>
11:20-11:40	Industrial Biotech from the point of researchers	<i>Dr. Gergely Maróti, BAY GEN</i>
11:40-12:00	Industrial Biotech from the point of enterprises	<i>Dr Attila Kovács, First Hungarian Biogas Ltd.</i>
12:00-12:20	Governmental issues in Innovation policy	<i>András Bakács, Ministry for National Development and Economy</i>
12:20-12:40	Questions and answers	
Lunch Break		
13:45-15:30	<i>Closed round table discussion for invited guests</i>	<i>Invited guests</i>

List of participants

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