Minutes of the first meeting of the Industrial Biotechnology and Bioenergy Strategy Advisory Panel held on 30 June 2011 in Birmingham

Participants

IB Panel members

Professor David Lawrence	(Syngenta, recently retired) – ***Chairman***
Professor Colin Brownlee	(Marine Biology Association, Plymouth)
Dr Mike Dawson	(Novacta Biosystems)
Professor Mike Goosey	(Shell, recently retired)
Professor Nilay Shah	(Imperial College, London)
Professor Alison Smith	(University of Cambridge)

Apologies: Professor Jens Nielsen (Chalmers, Sweden)

BBSRC Office

Dr Celia Caulcott	(Director of Innovation and Skills)
Dr Andy Cureton	(Head of Business and Innovation Unit)
Duncan Eggar	(Bioenergy Champion)
Dr Natalia Gillies	(Strategy and Policy Officer / Industrial Biotechnology & Bioenergy Panel secretariat, portfolio, priorities and highlight areas)
Dr Vicky Jackson	(Strategy and Policy Manager / Industrial Biotechnology, Bioenergy, BSBEC)
Dr Colin Miles	(Sector Head Bioenergy and Industrial Biotechnology / chair of Cross-Office Industrial Biotechnology and Bioenergy Team)

Introduction

1. The first meeting of the Industrial Biotechnology and Bioenergy Strategy Advisory Panel (the Panel) started with welcome from its chair Professor David Lawrence and introduction of the meeting participants. Involvement of Professor Nilay Shah with the EPSRC meetings dealing with the IB agenda was commended as an opportunity to achieve better synergy in the IB strategy development by BBSRC and EPSRC.

2. ***Action:*** *Presence of an EPSRC representative at Panel meetings was proposed.*

3. Dr Miles described the role and method of working of the new IB Panel and how its advice will be implemented by BBSRC. The Panel was presented with information on the Industrial Biotechnology and Bioenergy sector within BBSRC and the BBSRC Cross Office Industrial Biotechnology and Bioenergy Team (COIBT). Dr Miles outlined the current landscape in which BBSRC is operating, its interim strategy in industrial biotechnology and bioenergy and developments in the cross-council strategy in bioenergy.

4. ***Action:*** *In addition to objectives proposed by the Office, Panel members considered that the Panel should be working towards building a diverse multidisciplinary research community and supporting delivery of the thriving platform in industrial biotechnology in the UK.*

Working with EPSRC, other RC and other players in IB

5. The Panel discussed the importance of having visibility across the various schemes promoting industrial biotechnology and agreed that cooperation with other research councils (EPSRC in particular, as the leader in the RCUK Energy Programme), Technology Strategy Board (TSB), other funding bodies, special groups and Knowledge Transfer Networks (KTNs) will be essential for successful implementation of the industrial biotechnology strategy and the exploitation of the opportunities at a national level.

Interim BBSRC strategy in industrial biotechnology and bioenergy

6. The interim BBSRC strategy in industrial biotechnology and bioenergy, developed to date and used at present as guidance, should be complemented with more refined recommendations from the new Panel. BBSRC is well placed to lead the partnership with various players involved with the industrial biotechnology and needs to develop and communicate key strategic messages and provide steering in the current landscape.

BBSRC investment in industrial biotechnology and bioenergy to date

7. BBSRC should build on the experience to date and lessons learned from its investments in industrial biotechnology, including the BBSRC Sustainable Bioenergy Centre (BSBEC), Integrated Biorefining Research and Technology Club (IBTI Club), Bioprocessing Research Industry Club (BRIC) as well as through the responsive mode and Institute Strategic Programme grants.

8. BBSRC has organised an initial meeting between the key players in BSBEC and IBTI to consider how the programmes have progressed and which parts could be developed for future funding. This report should be available for discussion by the Panel at its November 2011 meeting.

Engaging industry

9. The Panel discussed the vital need for industrial biotechnology science base to be successful in term of translation to commodities. In the long-term, it is paramount to work towards delivery of a cost effective industrial biotechnology platform, even if cost effectiveness may not always be attained short-term. Panel members mentioned the need for commodity and specialty chemicals manufacturers to become aware of the potential of IB; in the past it had been dismissed as not being cost effective.

10. The Panel noted that working successfully with industry in the area of industrial biotechnology and bioenergy proved to be challenging. The Panel stressed the need to engage both larger companies and SMEs, and recognised that the industrial biotechnology sector in the UK is very fragmented and not yet driven by strategic importance of industrial biotechnology and bioenergy. To date, industry's interest in industrial biotechnology R&D appeared to be relatively short term, as opposed to

BBSRC's long term strategic view focussing, for example, on optimising technologies and processes for the production of advanced biofuels.

11. Divergent views were often expressed by industry representatives on e.g. The Leadership Forum because the members were focussed on their own company needs rather than the wider strategic needs for the UK.

Building the community

12. The Panel discussed the possibility of building on current strengths in the UK and channelling existing expertise (e.g. from 'omics' and enzymology research with current relatively narrow focus on biomedical applications and related to the pharmaceutical industry) towards areas of industrial biotechnology that are more strategically relevant to BBSRC.

13. In order to build a strong industrial biotechnology community, it is essential to overcome cultural barriers and encourage joint working of representatives of biological, chemical, physical, engineering sciences and other relevant disciplines. Getting sufficient connection with the chemistry community is considered to be one of the top priorities.

Building the community: Learned Societies

14. In addition to those already identified within Paper 3, the Panel advised that BBSRC should specifically target the Biochemical Society, the Institution of Chemical Engineers (IChemE), the Royal Academy of Engineering, the Society for General Microbiology as well as the Royal Society and other relevant bodies with a view to reach to the science community and raise awareness among representatives of relevant disciplines of the challenges and strategic importance of industrial biotechnology and bioenergy, and funding opportunities available to tackle these challenges.

Building the community: Strategic Partnerships

15. BBSRC needs to build on its strategic partnerships with HEIs and use other existing links with the senior management as well as seek support from Research Offices within universities in order to communicate key messages to the community. Thematic workshops, seminars and other raising awareness events could provide a medium for this engagement, and senior management and Research Offices could become first points of contact in identifying potential participants for these events.

Highlight notices for responsive mode grant proposals

16. The summary of Panel's discussion on potential topics for highlight notices in industrial biotechnology and bioenergy is presented at **Annex 1**. A three outcome framework was proposed, which could subsequently be built on to identify (a) key breakthrough possibilities, and (b) common areas of science and HEI's where they are strong (**Annex 2**).

Skills in industrial biotechnology and bioenergy

17. The Panel noted that ensuring appropriate skills level is one of the key blocks in building a thriving and diverse industrial biotechnology platform in the UK. This work can start with identification of bottlenecks in finding solutions of key scientific problems, technologies that could help to solve them and then focus on identifying what skills are required to deal with the above.

18. It was agreed that it would be useful to discuss industrial biotechnology skills issues in more detail at the second Panel meeting in November 2011.

Potential international partners

19. Following introduction by Dr Miles on existing international partnerships relevant for industrial biotechnology and bioenergy (e.g. the USA, Brazil and India), the Panel discussed further opportunities for international cooperation which are listed below:

Sugar conversion – Brazil;
Various possibilities with China;
Algae, sugar conversion – South Africa.

RISD
November 2011