

**Knowledge Transfer Networks**  
Accelerating business innovation  
A Technology Strategy Board Programme

## Current UK Funding Opportunities in the renewables sector



Dr Tom Jenkins  
Biosciences KTN  
Norwich, 15<sup>th</sup> October 2009

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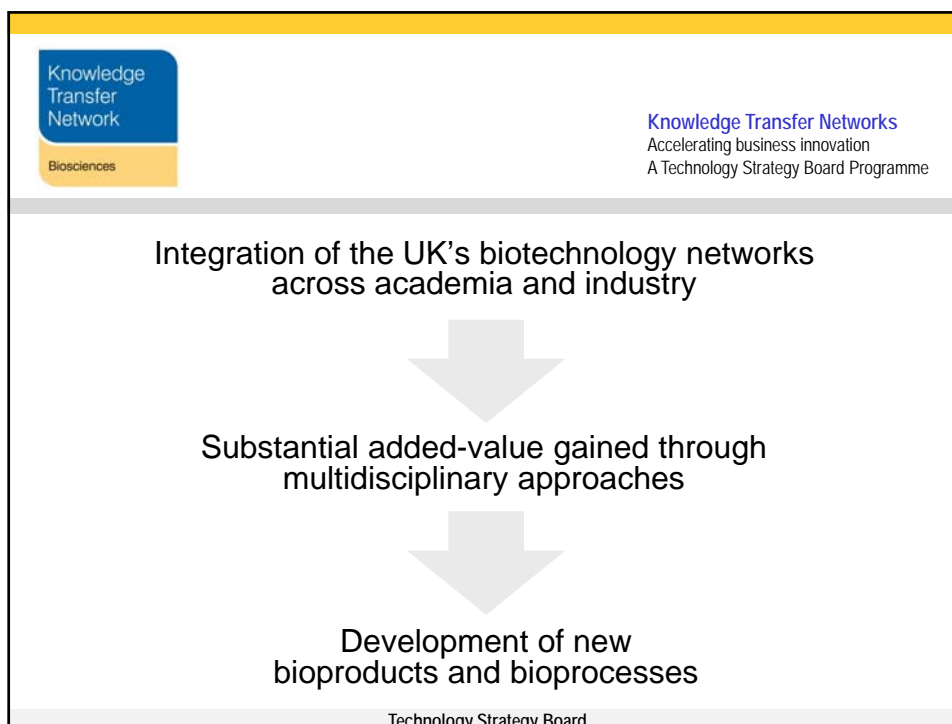
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## We are here to improve the performance of UK business

Industry Relevant  
Commercially Led  
£££ for UK  
Driven by Technology Strategy Board

We are here to help business & researchers identify their biotechnology needs and provide solutions for them

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The slide features a white background with a yellow border at the top and bottom. In the top left corner is the 'Knowledge Transfer Network Biosciences' logo. In the top right corner is the text 'Knowledge Transfer Networks Accelerating business innovation A Technology Strategy Board Programme'. The main content is a blue heading 'Integrated Biorefining Technologies Initiative' followed by a bulleted list of four points. At the bottom center is the text 'Technology Strategy Board'.

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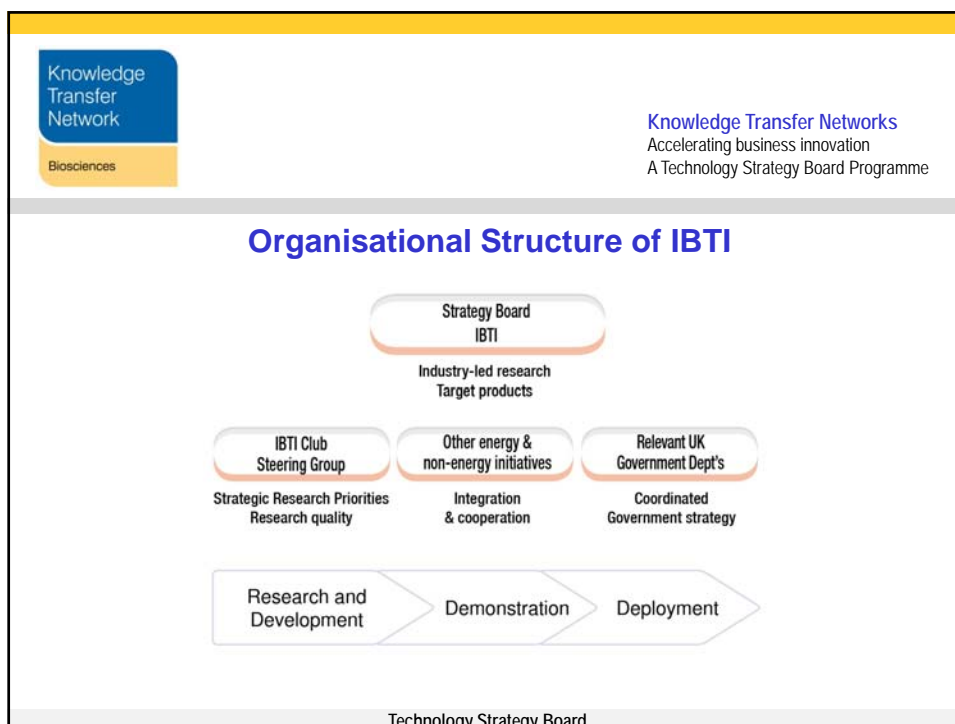
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**Integrated Biorefining Technologies Initiative**

- IBTI is a Public-Private Partnership (PPP) of leading industries, UK Government departments and Research Councils
- Industry and academia are working together to define strategic R&D projects through an IBTI Industry Club, ensuring their future market relevance
- R&D projects will be taken forward to demonstration with industrial members of IBTI ensuring the deployment of new technologies and products
- IBTI will help to underpin UK progress in developing a competitive bio-based economy in the coming century

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IBTI - INTEGRATED BIOREFINING RESEARCH AND TECHNOLOGY CLUB

## IBTI Club Funding

- Partnership between BBSRC, EPSRC and industry
- Combined funding pot of up to £6M to fund strategic R&D
- BBSRC provides £4M funding
- EPSRC provides £1M funding
- Industry provides up to £1M
- IBTI Club will run for 5 years with 2 calls for proposals
- IBTI has established a virtual research centre across the UK

[http://www.bbsrc.ac.uk/business/collaborative\\_research/industry\\_clubs/ibti/index.html](http://www.bbsrc.ac.uk/business/collaborative_research/industry_clubs/ibti/index.html)

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## Research themes for the first IBTI Call

**Optimisation of feedstock composition**  
Optimising feedstock quality to increase the yield of valuable components and the ease with which these can be extracted to improve plant biomass for biorefining applications

**Integrative bio-processing**  
Development of more efficient and intense microbial bioprocesses, which can be integrated both with separation technologies and with further (bio)chemical transformations

**Enhancing product value**  
The use of novel chemical and bioprocessing technologies to convert low-value products into fine chemicals and to recover higher-value molecules from biorefinery by-products (e.g. fermentation residues)

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## Industry Needs

- **Speciality oils**
- **Surfactants**
- **Polymers, oligomers and their monomeric precursors**
- **Heteroaromatic and pseudoaromatic compounds**
- **Flavours and nutraceuticals**
- **Terpenoids**
- **Cosmeceuticals, essential oils, vitamins**
- **Phytopharmaceuticals**
- **High-value chiral compounds**

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**BBSRC**  
bioscience for the future



**EPSRC**  
Pioneering research and skills

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## Application Procedure and deadlines

- Outline proposals must be submitted in the first instance through Je-S, **closing date is 5 November 2009 at 4pm**
- Research proposals are sought for feasibility studies (max of 12 months funding) and standard grant applications of up to 5 years
- Successful applicants will be invited to write a **full application** in December 2009 for **submission by February 2010** (date TBC)
- The primary criteria for assessment are the quality of science proposed and the strategic relevance to the IBTI Club

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### National Industrial Biotechnology Facility (CPI)

- Bioprocessing facilities provide unique gene to kilo service for IB, through partnership with the CoEBio3 at Manchester
- **Open-access facilities**
- Can produce trial quantities of product, process scale-up design and real-time monitoring of fermentations
- Facilities are designed to provide POC or sufficient quantities of product to take away and develop further in house

**cpi** The Centre for Process innovation  
...the future inspired

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## National Industrial Biotechnology Facility (CPI)

Current bioprocessing facilities available for use include:

- 2 x 1000 L fermentors
- Development labs to 10 L scale
- Dedicated 50 L solvent facility and integrated chemical processing capability
- Marine fermentation capacity
- Novel bioreactor design, build and optimisation



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## Industrial Biotechnology Innovation and Growth Team

**IB-IGT Report published in May 2009**

2 key recommendations relevant to the KBBE/biorefining:

**The Demonstration Plant**

IB-IGT Report recommended establishing an open-access facility, by 2010, with capacity for chemicals production at the 1-10 T scale

**The IB Fund**

IB-IGT Report recommended that a fund should be set up by the end of 2009 to provide industry with access to demonstration facilities



www.berr.gov.uk/files/file51144.pdf



www.berr.gov.uk/files/file51891.pdf

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## The IB Fund

### Developing high-value chemicals through IB

- TSB is running a competition to fund development & commercialisation of innovative processes to generate high-value chemicals through IB
- Projects should be business-led, either as part of a collaborative consortium or by a single company
- £2.5 m is being invested to support feasibility projects, particularly those led by SMEs
- It is envisaged that the majority of feasibility projects will:
  - Operate at or below 1,000 L batch processing capacity
  - Last up to 6 months
  - Be able to commence in April 2010

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## The IB Fund – Application Process

### Developing high value chemicals through IB

- Guidance for applicants available at [www.innovateuk.org.uk](http://www.innovateuk.org.uk) which explains the process in more details
- Key dates for the 2009 competition are:
  - 18<sup>th</sup> September 2009 – competition opens
  - 6<sup>th</sup> October – Briefing Day (London)
  - 12<sup>th</sup> October – Open Day at NIBF
  - 12<sup>th</sup> November 2009 – registration of intent to submit
  - 19<sup>th</sup> November 2009 – last date when an application can be submitted
  - 18<sup>th</sup> December 2009 – all applicants informed of the outcome by this date, following assessment by an independent panel

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## The IB Fund

### Developing high-value chemicals through IB

- Successful feasibility projects, once nearing completion, can then provide a stepping stone for the autumn 2010 collaborative R&D competition
- It is anticipated that a further £2.5 m will be available to take forward successful, high quality projects from the 2009 competition
- The 2010 R&D competition will give preference to applications proposing to use the new large-scale demonstration plant at the NIBF
- Projects wishing to use the current or planned larger scale facilities at the NIBF should contact staff at the NIBF **prior to submission of an application** – for scheduling purposes on either:
  - 01642 447 278 or
  - NIBF@uk-cpi.com

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## The Demonstration Facility

- BIS is investing £12 m towards the creation of the IB demonstration plant on the site of the NIBF
- The larger scale (10,000 L) plant is envisaged to be operational by Dec 2010
- The facility is aimed at developing renewable chemicals production operating at the 1-10 tonne scale
- One North East has earmarked up to £1.5 m to secure the day-to-day running of the new demonstration plant
- The new larger-scale plant, together with existing NIBF facilities, will help deliver new innovative bioprocesses, chemicals and materials from renewable feedstocks, helping to translate R&D innovation into new market products

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## RENEWABLE MATERIALS LINK

**Government-wide initiative**  
**Framework for collaborative pre-commercial research**  
**Stimulating industrial R&D**  
**Accelerating commercial exploitation**  
**Enabling industry to adapt to change**




## Renewable Materials LINK Programme


- Programme launched in November 2005
- To encourage the exchange of knowledge between the private sector and the research base to further the non-food uses of renewable materials to support sustainable development
- Provides Government grant-aid to partnerships between the private sector and the public research base for high quality, innovative pre-commercial R&D





## Successful Project Characteristics

- Address researchable pre-commercial constraints identified as important by industry
- Have significant potential for commercial impact
- Provide a demonstrable route to market and potential for uptake and impact
- Innovative and contains high quality science
- Comply with Sponsors' policies
  - assist to inform or deliver policy


## The Means

Provision of 50% grants for:

Supporting research involving the assembly of latest knowledge and concepts in:

- Crop science
- Molecular biology
- Microbiology
- Industrial chemistry
- Engineering
- Information technology

Encouraging technology transfer








**Further Information**

**Website – see the LINK pages on...**  
<http://defra.farmingandfoodscience.csl.gov.uk>  
<http://www.nnfcc-link.co.uk>

**Facilitator**                      **Adrian Higson**  
**a.higson@nnfcc.co.uk**  
**Tel 01904 435182**

**Secretariat**                      **Renewable Materials LINK**  
**Tel 020 7238 1543**  
**renewablematerials.link@defra.gsi.gov.uk**








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**Thank you**

**Email:**                      [tom.jenkins@biosciencektn.com](mailto:tom.jenkins@biosciencektn.com)  
**Tel:**                              **+44 (0)1904 561582**



Biosciences KTN is the most important conduit for bio-based technology business to engage with Government, other business, research & trade organisations.

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