



Office of Science and Technology



Capitalising on Growing Environmental Markets – Global opportunities for UK universities

Event Summary

10th November 2005

Thistle Westminster, Victoria, London

Background

UK researchers are often world leaders in fundamental and applied environmental sciences, technologies, engineering and services. However, based on consultations with universities¹ and experts in the university knowledge transfer area, the Environmental Innovations Advisory Group (a joint DTI/Defra business-led Advisory Group) believes that much more could be done by the UK research base (universities and research & technology organizations, RTOs), to exploit these capabilities commercially, particularly within rapidly expanding global markets.

Successful new business development will yield substantial benefits including:

- ❑ New employment and wealth creation;
- ❑ Returns on investment;
- ❑ More follow on funding for R&D in the product pipeline;
- ❑ Fulfillment of environmental regulations at least cost; and,
- ❑ Improvements to the environment

Introduction

On 10th November, the Environmental Innovations Advisory Group in collaboration with OST, NERC and ESPRC, ran a successful event in London, entitled “Capitalising on Growing Environmental Markets – global opportunities for UK universities”.

Attended by more than 120 people from university technology transfer officers, leading academics, environmental firms and venture capital funds (see Annex 1), the conference was organized to:

- ❑ Raise awareness of opportunities that currently exist in a £350bn global market;
- ❑ Draw attention to how environmental markets are developing in response both to environmental pressures and new environmental regulations; and,
- ❑ Showcase companies that have been successfully spun out of UK universities.

The conference was also timed to coincide with the third round of the Higher Education Innovation Fund (HEIF3)². This provided a timely funding source for aiding university developments in this area.

¹ Universities included: Cranfield, Lancaster, Oxford, Reading, Surrey, West of England

² HEIF3 covers £238 million over the years 2006-07 and 2007-08.

Agenda

The conference was comprised of four interlinked themes:

- ❑ Global environmental market opportunities and the impact of legislation and regulation;
- ❑ Government and industrial funding of environmental sciences, technologies, engineering and services;
- ❑ Good practice in exploiting environmental sciences, technologies, engineering and services;
- ❑ Planning future capacity for successful exploitation.

The conference was opened by Dr Stephen de Souza, Director of EIU with the Keynote Address given by Professor Sir Keith O’Nions, Director General of the Research Councils. Speakers followed from the Environmental industries sector (Will Pope, Chairman of IEG Technologies UK Ltd), Environment Agency (Dr Robert Huggins) and Research Councils (Stephen Loader, NERC and Dr Claire Tansley, EPSRC).

The core of the conference revolved around the following sessions:

“Lessons learnt from environmental spin-outs”

Chaired and facilitated by Nick Smailes, Director of the SETsquared Partnership, the session had the following speakers:

- ❑ Dr. Sue O’Hare, Technology Transfer Manager at The University of Reading, speaking on behalf of Whitfield Solar Ltd
- ❑ John Catling, Executive Chairman of Water Innovate Ltd, a recent spin-out from Cranfield University which specialises in water technologies.
- ❑ Derek Barr, Chairman of HeliSwirl Technologies Ltd - formed in February 2005 under the auspices of Imperial College Innovations Ltd.

“How to build technology transfer capacity”

Chaired and facilitated by Dr Stephen Mahon, Centre for Sustainable Engineering, the session had the following speakers:

- ❑ Peter Raymond, Chairman of MerseyBio Incubator & past Chairman of UMIST Ventures - “Successful spin outs – how to achieve them”
- ❑ Dr Mark Bacon, Director, Enterprise and Business Partnerships at Lancaster Environment Centre (LEC), Lancaster University - “Building capacity for successful exploitation”
- ❑ Ashley Malster, Assistant Director, Knowledge Transfer, OST “Leveraging Government funding: Current and future technology transfer practices in universities”, which focused primarily on HEIF3
- ❑ Rob Wylie, WHEB Ventures – “Leveraging the financial sector”

Key conclusions

The research and exploitation of underpinning science was considered crucial to continued global success by UK plc in environmental markets. It was recognised that recent increases in Government expenditure on the knowledge transfer infrastructure, for both universities and public sector research establishments, as well as the DTI Technology Programme and initiatives like the Carbon Trust and WRAP, together with capital grant schemes for renewables projects, were enabling a new wave of environmental technologies to be developed and deployed in the marketplace, many through university spin-outs.

Environmental markets are evolving, moving steadily away from regulatory driven opportunities (which represent the historical core of the sector) through to growing opportunities arising out of resource efficiency and new drivers such as climate change, pressure on resources and the need to improve the 'bottom line'.

The conference showcased a number of recent environmental spin-outs (from Cranfield, Imperial and Reading Universities) to demonstrate that UK universities are beginning to create new businesses in this market area - something that to date has been limited due to greater technology transfer capacity in pharma-bio and ICT. In fact, two of the three companies featured were the first environmental companies that Cranfield and Reading had spun out, so progress is in evidence and these institutions have learnt valuable lessons for ensuring success in future ventures. A few universities, such as Imperial College, appear to have a slightly longer track record in this area, as evidenced by the success of Imperial Innovations.

There is now a healthy interest from the financial community in environmental technologies. Whilst the low-carbon energy agenda is undoubtedly the most significant driver behind this (and the 'clean tech' label is often used to describe this subset), the fact that large corporations like General Electric are now fully immersing themselves in the resource efficiency arena are giving the financial markets confidence – something that regulatory drivers alone have failed to achieve in the past, given the inherent risk profile in many policy areas.

It was clear from the feedback received from delegates that teething issues encountered by environmental technology spin-outs were common to all firms with university origins. Notable obstacles mentioned which required good planning included:

- ❑ the need for the right management team;
- ❑ mentoring support throughout;
- ❑ need for an exit strategy to be developed quickly; and,
- ❑ unsatisfactory delays caused by bureaucracy within universities (e.g. Vice-Chancellor committees and lack of standard contracts for intellectual property etc).

Delegate feedback from the event was excellent, with 60% saying the conference totally met their expectations. This was clearly evident on the day with much enthusiasm for the subjects being covered and active networking. In fact, many delegates appreciated the

opportunity to meet the entire technology transfer "community" for the first time and would like to attend further events, with a similar mix of delegates, to hear more best practice; learn lessons from success stories; as well as accessing accurate market data.

There is clearly a need for further awareness raising and networking in this nascent community and it is hoped that the range of Knowledge Transfer Networks that have an environmental technology dimension - such as those in Resource Efficiency, Integrated Pollution Management, Sensors etc. - will be able to facilitate this exchange of knowledge and build relationships between different communities.

EIU and other sponsors hope that the event will ultimately lead to greater exploitation of environmental market opportunities by both UK universities (perhaps as a result of HEIF3) and RTOs.

Jonathan Lonsdale

Environmental Industries Unit (DTI/Defra)

Postscript

EIU was pleased to hear that the University of East Anglia and a wide range of public and private partners were awarded £4.8 in June 2006 for their "Carbon Connections" project in the HEIF3 competitive round – one of 11 projects funded in total. Carbon Connections will focus on exploiting low-carbon technologies in the area of sustainable buildings and renewable energy.

USEFUL REFERENCES

HEIF3 awards (including competitive round)
<http://www.hefce.ac.uk/reachout/heif/heif3.asp>

Carbon Connections - one of 11 successful HEIF3 projects, led by University of East Anglia
http://www1.uea.ac.uk/polopoly_fs/1.592!UEA_press_release_18.05.06_Carbon+Connections.pdf

BVCA, "Creating Success from University Spin-Outs", November 2005 (Review conducted by Library House on behalf of BVCA) – see www.bvca.co.uk/publications/univspinout.pdf

ANNEX 1

DELEGATE LIST

Hassan Abdalla	Head of Product & Spatial Design (incorporating Leicester School of Architecture), De Montfort University
James Arscott	Business Development Manager, Barbour Index/CMPi Ltd
Carla Asquer	Researcher, Institute for Environment & Sustainability Research, Staffordshire University
Mark Bacon	Director, Lancaster Environment Centre
Richard Baldwin	Head of Academic Consultancy University of the West of England
Steven Banwart	Professor of Environmental Engineering Science The University of Sheffield
Mary Barkham	Secretary to the Environment Research Funders' Forum, NERC
Derek Barr	Chairman, HeliSwirl Technologies Ltd
Margaret Bates	Manager, Centre for Sustainable Wastes Management The University of Northampton
Colin Bell	Development Manager, Winning Moves Ltd
Mike Bell	Head, National Centre for Ocean Forecasting, Met Office
Cliff Billings	Group Technical and Quality Manager, STL Ltd
Graham Bing	Medici Fellow, Warwick Ventures University of Warwick
David Boardman	Deputy Technical Director National Industrial Symbiosis Programme (NISP)
Noel Botha	Partner, Orion Innovations LLP
Neil Bowering	Medici Fellow - Environmental & Energy related Technologies, Research & Innovation Services, University of Nottingham
James Brighton	Cranfield University
John Butlin	Environment & Resource Management Sector Manager, University of Portsmouth

Steve Callister	Managing Director, Water Innovate Ltd
John Catling	Executive Chairman, Water Innovate Ltd
Alison Cavey	Partner, Orion Innovations LLP
Stephen Clements	Environmental Technology Cluster Manager Yorkshire Forward
James Clipson	Business Liaison Manager - Knowledge Transfer, NERC
David Cobb	UCL Business
Chris Coggins	Waste Management Consultant
Andy Compton	Analyst – DTI International Technology Promoters, Pera
Sean Connick	International Manager, Welsh Development Agency
Dean Cook	Commercial Development Manager Central Science Laboratory
Bill Corry	Investment Manager, Impax Asset Management Ltd
Fionnuala Costello	Construction and Environment Sector Team Leader, EPSRC
Trevor Crichton	Technical Consultant, Oakdene Hollins
Manyi Cristofoli	Senior Technology Transfer Manager Queen Mary, University of London
William de Maré	London Technology Fund
Stephen de Souza	Director, Environmental Industries Unit, DTI
Laura Dietz	Innovation & Technology Service Manager Business Link for Cambridgeshire
Adam Edwards	British Geological Survey
Antony Ellis	Associate, Burgess Salmon
Mr Nick Ertl	Partner, Elkington & Fife
Charles Forester	Director, Nviro-CleanTech Inc
Patrick Foss-Smith	Nviro-CleanTech Inc

Tom Fourcade	Chief Executive, Envirobusiness South East
John Frankland	Deputy Director, The University of Hull
Richard Gillard	Partner, Elkington & Fife
Simon Goldsmith	Director, London Metropolitan University
Mark Griffiths	Programme Manager, Sustainable Technologies, DTI
Alan Grundy	Head of Business Development, UCL Business
Dave Gunn	NERC Business Development Manager National Oceanography Centre Southampton
Adrian Hallett	Head, Innovation Unit, Environmental Industries Unit
Paul Hamley	Technology Transfer Scientist, University of Nottingham
Claudia Hawke	Science Programmes Officer - Earth Observation, NERC
Oliver Heidrich	School of Civil Engineering and Geosciences University of Newcastle upon Tyne
Ben Herbert	Enterprise Fellow, Lancaster Environment Centre
David Hicks	Programme Manager, Integrated Environmental Management by distance learning, University of Bath
Stephen Hill	Policy Adviser, Environmental Industries Unit
Jonathan Hodrien	Business Development Manager - Environment & Sustainability, University of Surrey
John Howarth	Managing Director, Newton Industrial Group Ltd
Bob Huggins	Science Manager - Horizon Scanning & Web Technologies Environment Agency
Charlie Hunt	Investment Manager, NESTA
Louise Hunter	Business Development Manager University of Wolverhampton
Caroline Jackson	Director of Sustainable Business Solutions, Institute for Environment & Sustainability Research, Staffordshire University

Thecla Keizer	Marketing and Business Development Plymouth Marine Laboratory
Sam Kemp	Technology & Telecoms, Barclays
Jeremy Kirkpatrick	Managing Director, MyIP Limited
Jenny Knapp	Environmental Programme Manager Begbroke Science Park, University of Oxford
Peter Leverkus	Head of Technology Transfer, Cranfield University
Alan Lindsay	Senior Technology Transfer Manager (Nat Sci & Engineering), Queen Mary, University of London
Annie Linley	Plymouth Marine Laboratory
Stephen Loader	Knowledge Transfer, NERC
Jonathan Lonsdale	Project Manager - Technology & Sector Skills Environmental Industries Unit
Amanda Lyne	ACAL Energy Ltd
Lynne Macaskie	Research Manager, University of Birmingham
Stephen Mahon	Chief Executive, Centre for Sustainable Engineering
Ashley Malster	Assistant Director, Technology Transfer Office of Science & Technology
Trudie Mansfield	Head, Domestic Sponsorship Environmental Industries Unit
Julie Masters	Environmental Goods & Services Project Manager (North) Welsh Development Agency
Brian Matthews	Business Development Manager, Queen Mary College University of London
Colin McKinnon	Business Manager (Engineering, Maths & Science) University of Southampton
Keith Melton	Director, Environmental Industries Forum
Helen Merrett	Group Microbiological Development Manager, STL Ltd

Chris Miller	Head of Commercial Team, NERC
Adrian Monaghan	Manager, ESRC Sustainable Technologies Programme Brunel University
Brian More	Business Development Manager Coventry University Enterprises Ltd
Tim Moreby	Innovation and Technology Executive, SUIP Ltd
Glyn Morton	Head of Centre of Waste Management University of Central Lancashire
Edward Mott	Oxford Capital Partners
David Mott	Oxford Capital Partners
Martijn Mugge	Director of Enterprise and Entrepreneurship QED Consulting
Noah Myers	Project Manager – Regulation, Environmental Industries Unit
Peter Newell	Director, KleenAir Systems Int. plc
Darryl Newport	Director of Sustainability, University of East London
Sue O'Hare	Technology Transfer Manager, University of Reading
Zoe Osmond	Business Development Manager for Environment, Business Services, University of Brighton
Jag Pabla	Senior Consultant, ECOTEC Research & Consulting Ltd
Krishna Persaud	SCEAS, University of Manchester
Will Pope	Chairman, IEG Technologies UK Ltd
Gareth Probert	Senior Associate, Eric Potter Clarkson
Ian Proctor	Business Development Manager, Keele University
Peter Raymond	Chair, MerseyBio Ventures
Stephen Rhodes	Head, Fixed and Mobile Communications Equipment Section, DTI
George Rice	Medici Fellow, Research Innovation Services University of Nottingham

Steve Richmond	Office of Science & Technology
Peter Rignall	Business Development Manager, University of Gloucester
Allison Robertshaw	Ruston WHEB Ltd
Wendy Ross	Technology Transfer Officer (Biosciences), Cardiff University
Michael Schultz	Business Manager, Scientific Facilities & Technology, NERC
Jackie Seddon	Chair, UK Forum for Environmental Industries
Andrew Shaw	Office of Science & Technology
Mark Shepherd	Associate, Burgess Salmon
Vaughan Shilton	Business Development Manager, University of Wolverhampton
Khalid Shukri	Director, Genacys Ltd
Lorna Sillar	Associate Director, Research & Enterprise Services University of St. Andrews
Peter Simmonds	Business Development Manager, University of Wales
Lionel Simons	Chairman, KleenAir Systems Int. Plc
Ian Simpson	NERC Commercial Team, Lancaster Environment Centre
Will Sinnott	Business Manager, Intellectual Property and Ventures University of Wales Ventures
John Slater	Commercial Manager - Earth, Energy & Environment, Interdisciplinary Institute, University of Leeds
Nick Smailes	Director, SETsquared Partnership
Richard Southern	Head of Geography and Environmental Sciences University of Hertfordshire
Mark Spratt	Centre for Research in Energy, Waste and the Environment, Cardiff School of Engineering
Julia Stegemann	Senior Lecturer, University College London
Patricia Stoneham	Technology Manager, London Development Agency

Josephine Sutcliffe	Business Development Officer, Research & Enterprise Services, University of St. Andrews
Claire Tansley	Construction and Environment Sector Team Leader, EPSRC
Jean Taylor	Business Development Manager, University of Exeter
Paul Thomas	Business Development Manager, University of Essex
Dick Thompson	Director, National Soil Resources Institute
Gareth Thornton	Associate Director for Knowledge Transfer FIRST Faraday Partnership
Mike Tricker	Consultant working on Science and Industry Advisory Council, SEEDA
Karen Underwood	Technology Transfer Officer - Environment, Agriculture & Other Life Sciences, Reading Enterprise Hub
April Vesey	Head of Sustainable Technologies, DTI
Gareth Wakefield	Vice President Research, Begbroke Science Park
Lydia Whyatt	Foursome Investments Ltd
Don Wight	Deputy Head, Science & Technology Unit UK Trade & Investment
David Wilkinson	Research Analyst, Environmental Industries, DTI
Adam Workman	Investment Manager, The Carbon Trust
Aleksandra Wright	Foursome Investments Ltd
Rob Wylie	WHEB Ventures Ltd

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