British High Commission

Shantipath
Chanakyapuri
New Delhi – 110 021
Tel: +91 11 2687 2161

http://ukinindia.fco.gov.uk

ज्ञान प्रथम
Knowledge First

UK & India: Partners in Research and Innovation

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Foreword

India and the UK have a strong track record of collaborating in science and research. Jointly-authored research publications between our two countries have doubled over the past decade. Since 2008, Delhi has been home to one of the three international offices maintained by the UK Research Councils, and, in the last year, UK bodies have committed over £30 million (INR 2 billion) to jointly-funded research programmes.

But the British Government is keen to see further engagement. The challenges that our two societies face are increasingly global in nature – and solutions will increasingly be found in scientific breakthroughs and applications.

I therefore welcome this booklet, which provides a useful snapshot of our work together, and I look forward to regular interaction between Indian and British scientists in the years to come.

RT Hon David Willetts
UK Minister for Universities and Science

As the first Prime Minister of India, Jawaharlal Nehru said "the future belongs to science and those who make friends with science". I am delighted that this document has clearly articulated the depth and breadth of partnerships between Indian and British scientists in so many diverse areas.

I am also excited about our growing joint aspirations and future plans to step up the level of engagements and cooperation between Indian and British research institutions on such programmes which promote synergistic impact on economic, social and environmental challenges faced by people of both countries.

I urge our scientists to seize the opportunities offered by collaborations between India and the UK and wish them well with their future endeavours.

Prithviraj Chavan
Minister for Science and Technology,
Government of India

Introduction

In an increasingly globalised knowledge economy, the rapid expansion of scientific and research collaboration between the UK and India is helping us to find solutions to local and global problems, supporting innovation and driving economic growth. This is a particularly exciting time. The British Government has set out its commitment to an "enhanced relationship" with India, with science and research playing a central role. Already in 2010, we have seen new commitments to jointly funded research on key global challenges including renewable energy, food security, water resources and health. These commitments put India on track to become the UK's largest bilateral research partner.

The UK and India are serious about science and research. Our work together shows why, in so many areas, it is important to "put knowledge first". In this booklet we provide an introduction to the breadth of our collaboration. We demonstrate the commitment which our governments have shown to science and research; how the world-class institutions and researchers in our countries work together; and how businesses in our countries contribute, not just to help shape and prioritise research, but to ensure the fruits of research are turned into real societal and economic benefits.

Governments working together

Governments have a key role in providing the framework and infrastructure for science and research. As Vince Cable, British Secretary of State for Business, Innovation and Skills has put it, "science is a vital public good – one that the market unprompted will not provide at the level needed in a modern knowledge economy".

The UK is proud to be ranked first or second in many research disciplines. Based on investment and output per researcher, the UK also has the most efficient research of all G8 countries. Increasingly, however, world-class research and innovation are driven from outside the most developed economies. That is why our partnership with India is so important.

Indian investment on research and development is increasing sharply. In 2009, Nature reported this to have reached INR 284 billion (over £4 billion). Under the 2007-12 Five Year Plan, the Indian Government aims to reach 2 per cent of GDP spent on research. Plans to create another eight of the world-renowned Indian Institutes of Technology, seven new Indian Institutes of Science, Education and Research, and five new Indian Institutes of Management, as well as huge expansion of higher education underlines that commitment. UK institutes

are partners in some of that expansion, for example with several UK universities working with the new IIT Ropar and IISER Pune under agreements signed in January 2010.

In order to formally set the priorities for the research partnership, our governments meet every two years at the UK-Indian Science and Innovation Council. The latest meeting of the Council, in New Delhi in 2010, enabled us to reach seven new agreements, covering four global challenges, with commitments for joint funding of up to some £60-70 million (INR 5 billion). The agreements mean that over the coming years our focus will include research that will help our governments to deliver sustainable energy, to secure food and water supplies and to fight disease.

Shared approaches for shared challenges: Outcomes of the UK-India Science and Innovation Council 2010

Sustainable Energy Supply: Both the UK and India are committed to developing low-carbon, secure energy sources for the future, and have identified a number of areas to achieve this. The following programmes were agreed to help realise the immense potential of renewable energy in enabling the access to energy for all:

- **Solar Energy:** Two new collaborations led by UK's Loughborough University and India's National Physical Laboratory and IIT Bombay, worth £10 million (INR 70 crores), to develop cost-effective and efficient solar power
- **Civil Nuclear Research:** Five new collaborative projects, worth over £1 million (INR 7 crores)
- **Efficient Energy Storage:** A new programme to be developed for research into fuel cell technology to address the world's energy storage problems; and
- **Off-grid Energy Supplies:** A new programme to be developed for off-grid alternative energy supplies that will improve access to services, including information technology for people in rural areas

Food Production and Food Security: To meet the common challenge of finding a sustainable, secure supply of good quality food from less land and with lower inputs, a new research initiative on sustainable food crop production will be developed by a consortium of government departments and research funders from both countries.

Water Supply and Security: The UK and India share the global concern on water security as both will be directly affected by the predicted impacts of climate change and the growing shortage of freshwater. A new agreement to develop joint programmes of research into changing water cycles and the supply of clean, safe drinking water has been reached between research funders in both countries.

Health and Disease: Chronic disease now accounts for more than 50 per cent of global premature mortality. The cost of premature morbidity and mortality is enormous with India estimated to lose between £130 billion (INR 9 trillion) and £360 billion (INR 24 trillion) in national income over the next 10 years as a result of heart disease, stroke and diabetes alone. The cost to the UK of non-communicable diseases is estimated at £21 billion (INR 1.5 trillion) over the next 10 years. The UK's Medical Research Council and the Indian Council for Medical Research committed to funding research partnerships on non-communicable diseases (such as type 2 diabetes, respiratory and cardiovascular disease) that are increasingly affecting both countries.

As well as these key agreements, the joint conclusions to the Council by the UK Government Chief Scientist, and the Secretary of the Department of Science and Technology, highlighted the importance of how we work together, including the importance of strong basic science, effective coordination between research funding agencies and government departments, and an active private sector role.

UK-India collaborative study on the transfer of low-carbon technology

Between June 2008 and February 2009, The Energy Research Institute, India (TERI) and University of Sussex, UK (SPRU), conducted a collaborative study focused on five transformational low-carbon technologies: wind power; solar photovoltaics; hybrid vehicles; energy efficiency in small and medium enterprises; and Integrated Gasification Combined Cycle (IGCC) for power generation.

The result of this collaboration has been the development of practical solutions for policymakers to overcome some of the biggest challenges in technology transfer, including a decision-making guide for policymakers, and a guide that addresses some of the perceived barriers around Intellectual Property Rights (IPRs).

A long standing partnership

The major new agreements reached in 2010 represent a real scaling up of the UK-India partnership in key areas of research. But that partnership itself is not new. Our close collaboration covers a wide range of issues beyond those discussed at the Council, ranging from research at the laboratory level to application in people's daily lives.

The flagship UK-Indian programme of collaboration in recent years has been the 2006-11 UK-India Education and Research Initiative (UKIERI). UKIERI is a five-year programme aiming to achieve a step change in education and research links between India and the UK. It has committed almost £25 million (approx INR 175 crores) to support almost 500 partnerships between institutions in our countries, many of these in key areas of research. Some of the UK's most innovative companies were also among business sponsors of UKIERI, reflecting their commitment to both research and to the UK-India partnership.

The scale and success of UKIERI has helped take forward the existing UK-India partnerships and boost new ones. For example in 2008, UK and Indian scientists and industrial engineers embarked on a £9 million (INR 63 crores) 'Next Generation Networks' project to bring online education, healthcare and early warning weather/natural disaster systems to remote areas in both countries. This project, led by the University of Ulster and IIT Madras, was funded by Research Councils UK and the Indian Department of Science and Technology, and received

The UK India Education and Research Initiative (UKIERI)'s support to research includes

- 6 Major Research Awards (of up to £500,000 each)
- 67 Research Awards (of up to £150,000 each)
- 30 DST-UKIERI Research Awards (of up to £150,000 each)
- 20 PhD Scholarships
- 43 Research Fellowships
- 35 Events in Policy Dialogue and Networking

Examples of how sharing knowledge through UKIERI research collaborations has led to innovative and multi-disciplinary developments:

- Indira Gandhi National Open University (IGNOU) and the University of Central Lancashire are collaborating to generate innovative methodology and technology for hearing-impaired sign language users. IGNOU has now launched Bachelor of Arts programme in Applied Sign Language which prepares hearing-impaired students for higher education. It is the first-of-its-kind in the world.
- Indian Institute of Technology, Delhi (IITD), the All India Institute of Medical Sciences (AIIMS) and Aligarh Muslim University (AMU) are collaborating with Loughborough University and Kingston College to develop a device to use mobile communication to provide patient data to doctors directly. This technology will allow the transmission of data representing vital signs such as the Electrocardiogram (ECG), blood pressure and blood glucose level, so that patients need not travel to a hospital for check-ups. This will lead to more efficient use of clinician's time allowing more time for diagnosis.
- Indian Institute of Toxicology Research and the University of Bradford are collaborating to determine the impact of the application of nanomaterials which have useful functions because of their size – technology on humans. Exposure of humans to nanomaterials is possible from the initial stages of manufacture, through to their release in the environment. The team is working to assess 'persistence' in biological systems – discovering how, as a result of long-term exposures to low concentrations, the accumulation of these nano particles in our bodies may lead to adverse effects on health.
- Birla Institute of Technology, Pilani and the University of Dundee are working together to provide techniques to significantly lower the environmental impact of concrete use of the building industries in both countries. This includes significantly lowering CO_2 emissions, and increasing the use of waste materials in concrete.

£4 million (INR 28 crores) of industrial funding from British Telecom, Infosys Technologies, Wipro, Sasken Communication Technologies and Tata Consultancy Services.

This project has led to the development of the India-UK Advanced Technology Centre (IU-ATC) of Excellence in Next Generation Networks Systems and Services, which is a joint research initiative with a focused agenda to support collaborative PhD and post doctoral projects, joint research programmes, and technology transfer in the ICT sector. The IU-ATC already represents a body of 110 people in both countries, ranging from faculty professors and post doctoral scientists and engineers, through to PhD and postgraduate students and is now working with United Nations Disaster Prevention in South Asia to apply its expertise to the area of landslide detection and prevention.

The funding of collaboration also enables the development of career pathways for scientists. Each year in India, thousands of PhDs are awarded in the field of biomedical research, but the opportunities for researchers to continue post doctoral work in their home country have been limited. Many work outside India, only returning to fill research leader roles far later in their careers. In 2009, the Government of India's Department of Biotechnology and the largest charity in the UK, the Wellcome Trust, announced an £80 million (INR 560 crores), five-year, jointly funded scheme to strengthen the research base of Indian biomedical science by providing fellowship programmes to support researchers staying in the country. These new fellowships aim to empower the best scientists to succeed through building excellent career pathways – from postdoc to senior researcher level in India for scientists working in basic biomedical, clinical and veterinary research.

Technology transfer is an important output of research relationships in a number of areas. As part of efforts to tackle climate change, in 2008-09 The Energy Research Institute, India (TERI) partnered the University of Sussex in a study of a range of low-carbon technologies. More recently, the UK and Indian Governments have been working together on proposals for Climate Innovation Centres, further deepening research links on climate change.

Research to help reduce poverty

In the same way that the application of collaborative research can help drive economic growth, so research itself is an important part of how the UK and India work together to tackle poverty.

The UK's Department for International Development (DFID) is one of the largest funders of development research in the world. India's strong scientific capability and commitment to development make the UK and India ideal partners in supporting research that contributes to poverty reduction. That means, not just research in India, but research done in India that is fed into DFID programmes and other initiatives in the developing countries around the world – helping countries in, for example, Africa to benefit from the work done in India.

In a wide range of areas, from the direct application of scientific insights in areas such as health or agriculture, to innovative approaches to systems of government or social policy making, the outcomes of research can have a huge impact on the daily lives of some of the poorest in our communities. One example is

food production. Through the Rice-Wheat Consortium, DFID-supported research has shown how direct planting of wheat seeds into paddy fields without ploughing after the rice harvest increases yields by up to 10 per cent, but also requires one million less litres of water per hectare, and reduces carbon emissions from the production process. The technique is known as 'zero tillage', and has huge potential for application for the 300 million people living in the Indo-Gangetic plain of India and its neighbours.

On health, one important area of joint work is through the Effective Health Care Research Programme Consortium, funded by DFID and led by the Liverpool School of Tropical Medicine working with Indian partners. This has already helped improve national guidelines for malaria prevention and improved free access to clinical data for Indian clinicians, policymakers and patients.

On the social side, the Young Lives programme funded by DFID is a unique long-term international study of childhood poverty tracking the changing lives of 12,000 children in India (in the state of Andhra Pradesh) over a 15-year period, starting in 2001. The programme is part of an international project including children in Vietnam, Peru and Ethiopa. The data collected so far is already being used in the Andhra Pradesh State Plan of Action. The research insights will multiply as the full 15-year set of data is put together.

On social policy, work on improved mother and infant care in India has highlighted how work through women's groups has reduced newborn mortality rates by 30-40 per cent (this research was done in parallel with similar work in Nepal and Bangladesh, multiplying the regional impact). The findings have helped strengthen health and nutrition support programmes across Indian states. It also informs DFID's support to the Indian Government's National Rural Health Mission, improving access to quality healthcare – especially in rural areas.

These are just a few examples of DFID's India-based research. More widely, DFID also supports joint work by UK and Indian experts as part of international development research initiatives, such as the International AIDS Vaccination Initiative, where the Indian Council of Medical Research is a partner in helping develop safe, effective and accessible vaccines.

India: Destination of choice for British research

Alongside the UK's well-established Government Science and Innovation Network with its offices in New Delhi, Mumbai and Bangalore, India is one of the few places where other government research offices have been set up:

- In 2008, the UK's Research Councils (RCUK) set up one of its only three overseas offices in New Delhi. RCUK supports and represents each of the UK's seven autonomous Research Councils in identifying world-class research partnerships across India.
- In 2010, the UK's Department for International Development (DFID) set up its first, and so far only overseas Research and Evidence Hub in New Delhi. The office will work closely with Indian and other research partners in the region to help ensure that DFID research responds to Indian and other regional needs. It will also identify opportunities where research in India has applications in other places where DFID works, for example in Sub-Saharan Africa. This is another example of the UK and India collaborating on solutions for global application.

Indian Department of Science and Technology-Research Councils UK Science Bridges

Bioenergy: Technology and Business Solutions for the UK and India – A three-year, £3 million (INR 21 crores) award was granted to Aston University and the Indian Institute of Technology, Delhi. The project aims to deliver sustainable decentralised bioenergy for both the developed and developing world, with a focus on growing biomass using wasteland and wastewater in order to provide energy for heating in the UK and energy for cold storage and food processing in India.

Sustainable Indo-UK Agricultural Initiative – A four-year, £1.5 million (INR 10.5 crores) award was given to the University of Leeds, the Indian Agricultural Research Institute and the Indian Institute of Science, Bangalore. This project aims to enhance existing interactions to exploit and develop advances in biotechnology applicable in an agricultural context. This initiative facilitates two-way interaction between Indian and UK basic science and applied agriculture in India.

BioPharm 2020: Entrepreneurial Opportunities for Indian/UK Scientists in the Pharmaceutical and Biotechnology Industries – A two-year, £1.5 million (INR 10.5 crores) was awarded to the University of Nottingham, the Indian Institute of Management, Bangalore and the Indian Institute of Technology, Kanpur. The three partners are committed to create a step-change in collaborative innovation in target identification, drug discovery, drug delivery and manufacturing. They are building on existing collaborations with the goal of producing clinical and commercial benefits from patent protected research.

Innovation creating opportunities for businesses – and their customers

The UK and India have a history of working together to encourage the translation of research into real world changes, bringing together the best scientists in both countries to focus on how industry can use new scientific discoveries to transform their businesses. In 2008, Research Councils UK and the Indian Department of Science and Technology jointly funded three 'Science Bridges' to facilitate innovation from existing research. These Science Bridges are specifically designed to encourage wealth creation by improving the transfer of research between countries and from academic institutions to businesses.

Increasingly, universities in the UK and India are reaping benefits from bringing the results of their research to market. For example, in 2008, Imperial Innovations, the technology commercialisation arm of Imperial College London, opened i2india Ventures Pvt. Ltd., which is specifically designed to facilitate innovation and entrepreneurship in India. Initiatives like this show how the success of UK-India scientific collaboration goes far beyond the role of governments.

Just as universities reach out to businesses, so businesses in India and the UK are driving their own research to help bring new products and solutions to the market. This is a fast-moving and two-way process. More than 50 per cent of Indian businesses investment in the European Union goes to the UK. As well as having head offices in the UK, that often also means bringing research and development operations to the UK.

Imperial Innovations in India: i2india Ventures

i2india Ventures uses its unique business model, developed by mixing UK best practice and experience with India-specific intelligence, to bridge the gap between research and industry. i2india has already signed several commercial agreements with leading R&D institutes including Indian Institutes of Technology (IITs), Indian Institutes of Science (IISc) and Council for Scientific and Industrial Research (CSIR) to help fund the development of innovations from research institutes into business ventures. i2india has also announced a collaborative effort with the Indian Government to set-up a world-class Innovation Centre in Bangalore.

UK-India Young Scientists' Networking Conferences

With the objective of sharing knowledge and research among young post doctoral students, the British Council's "Young Scientists' Networking Conferences" have focused on low-carbon technologies and new and renewable energy research to maximise the partnership potential between UK and India.

The first conference, hosted in Chennai in March 2009, resulted in the establishment of nine specialist networks. Three of these networks have advanced further and are already writing proposals for joint research. As an example, the British Council funded Dr Jorge Rodriguez (Glamorgan University) and Dr Eileen Hao Yu (Newcastle University) to work with Dr Priyangshu Sarma (TERI) and visit TERI's laboratory in April 2009. Following this, Dr Sarma obtained funding from the Royal Society to visit both Glamorgan and Newcastle to develop joint research proposals. Since then, more visits between both the UK and Indian partners have been undertaken to take forward shared research interests.

Businesses have a key role in research, and in technological innovation. The UK and India's partnership in industrial research and innovation covers a range of scientific disciplines. Tata Consultancy Services have teamed up with Rolls-Royce to expand the footprint of Rolls-Royce engineering services in India. Likewise, ARM, the British semiconductor chip design company, has its largest design centre outside of the UK in Bangalore. ARM's India design centre develops intellectual property in semiconductors, products and solutions for a range of ARM markets. Another model of partnership is exemplified by BAE Systems, who are developing joint ventures (as well as partnerships and acquisitions) in India to enable it to develop, design, and manufacture innovative new products.

It is the same in the other direction. According to the Commonwealth Business Council, the UK is the largest investor in India, for example in areas such as telecommunications and energy where innovation is a real driver of expansion and growth. Several leading UK firms are investing in research and market entry partnerships, such as British Telecom in the Next Generation Networks project for advanced communications technology applications, or British Petroleum's (BP) work with Tata bringing solar energy solutions designed through partnership in India to the rest of the world. In pharmaceuticals, Astra Zeneca for example has chosen Bangalore as a location for tuberculosis research.

As businesses use research to open up opportunities, sometimes they come up against obstacles such as regulatory frameworks or intellectual property rules that are different to those they are used to. For this reason, addressing the practical processes and institutional arrangements through which research reaches the market also forms part of the UK-India research relationship. In 2010, as well as the major research collaborations agreed at the UK-India Science and Innovation Council, both countries agreed to work together to improve research processing. This includes developing new methods to maximise the economic, societal and intellectual outcomes of joint research. As part of this, an IMPACT conference towards the end of 2010 will highlight the wider impacts of Indo-UK collaborations to policymakers, innovators, the private sector and venture capitalists as well as research funders and researchers themselves, including looking at shared challenges in areas like intellectual property.

Individuals change the world

Behind many of the governmental and institutional initiatives described in this booklet lies the role of individual researchers whose knowledge, insights and hard work are often what drive real breakthroughs. The UK and India are rightly proud of the Nobel Prizes which our respective researchers have earned over the years. As well as that select group, we work together to support our large pools of outstanding early and mid-career stage scientists and researchers engaged in cutting-edge innovation.

The UK Foreign and Commonwealth Office (FCO) Chevening Scholarship Programme, and DFID's support to Commonwealth Scholars are two ways in which the UK Government helps some of the brightest young Indians to study in the UK. Across all disciplines, between 1983-84 and 2009-10 over 1,800 Indians were awarded Chevening Scholarships. Up until now, scholars have tended to be focused on social science research, although this has already included the study of such issues as climate change or energy. In 2010, the launch of a science and innovation scholarship for mid-career Indians, as part of a unique programme only available in India, further illustrates the growing importance of study in these areas.

It is also important for us that more British researchers come to India. To this end, in 2009, Research Councils UK introduced the Early Career Researcher's Travel Support Opportunity. It is designed to enable the best UK-based PhD students and post doctoral researchers to travel to India to meet and network with Indian academics and early career researchers. Feedback from these researchers indicates that this support offers the opportunity to develop and enhance research methods and knowledge, as well as the skills to undertake international collaborations.

Nobel Laureates: British excellence made in India; Indian excellence made in the UK

Scientific discovery is something that India and the UK have always done well together.

Sir Ronald Ross, a British-Indian physician, won the 1902 Nobel Prize in Medicine for his research linking malaria transmission to mosquitoes, which was undertaken during his time in Bangalore.

Prof Venkatraman Ramakrishnan, winner of the 2009 Nobel Prize in Chemistry, was born in Chidambram, Tamil Nadu and won his prize for work carried out to discover the structure and function of the ribosome at the MRC Laboratory of Molecular Biology in Cambridge.

Chevening Rolls-Royce Science and Innovation Leadership Programme

The Foreign and Commonwealth Office (FCO) Chevening Scholarship Programme has already sent over 1,800 Indians to study in the UK. Building on this success, in 2010, we are launching a unique new Chevening award for India, supported by one of the UK's most innovative companies and delivered by a premier UK university. This is the Chevening Rolls-Royce Science and Innovation Leadership Programme – a tailor-made programme for mid-career Indian professionals working in the fields of science, innovation, and related public administration.

The objectives of the programme will include promoting the role of science and innovation as drivers of growth and opportunity, and forging lasting ties between the UK and India's future leaders. The four-month programme will include a wide range of modules, including bridging pure research and business/scientific entrepreneurship, practical processes of innovation, commercialisation of research and technology transfer. We hope the course will attract some of India's brightest scientists, business people and public servants.

The application process will be advertised on the British High Commission website www.ukinindia.fco.gov.uk.

Conclusion

One of the striking features of research collaborations between the UK and India is that although it is often the science departments of our governments which drive collaborative opportunities forward, the benefits of this reach across departmental and thematic borders. A real difference, for example on adaptation to and mitigation of the effects of climate change, tackling social and health problems and creating new opportunities for businesses in our countries.

The different collaborations outlined in this booklet give a flavour of the breadth of subjects covered by joint UK-India research. This is only a flavour. As well as many more examples in the areas we have illustrated in this booklet, our joint work stretches to many areas of research often hidden from the headlines, for example the British Library and Arts and Humanities Research Council are working together with their Indian counterparts to improve access to archives and deepen understanding of UK and Indian culture and history. The digitalisation of archives is another example of new applications of information technology through research. The story of our research collaboration also closely complements the other ways the UK and India work together. Our related publication "Knowledge First: UK and India: Partners in Education" illustrates how we work together from the level of primary schools up to the levels of advanced research illustrated in this booklet.

Our governments have a shared understanding of the importance of science, innovation and research, and the value of new knowledge. The closeness of our work also creates a framework where we can address perceived barriers to collaboration, in areas such as intellectual property which can be complex – but which managed well, offer opportunities for mutual benefit.

Our research institutions and businesses in turn play a vital role in turning the engagement of governments into practical reality of benefit to our citizens. The agreements reached in 2010, and the work now in hand to build up detailed joint research plans under those agreements show how the UK-India partnership on science and research is going from strength-to-strength, offering a bright future with, we hope, some as yet barely imagined new ideas and innovations.

Further Information

	Main programmes and activities featured (includes joint programmes)	Website
British High Commission	BIS/FCO Science and Innovation Network	http://ukinindia.fco.gov.uk/en
	Secretariat for the Indo-UK Science and Innovation Council	
	BIS/FCO Global Partnership Fund	
Research Councils UK Office in India	Representation of UK's seven Research Councils including joint programmes with Indian partners	www.india.rcuk.ac.uk
	Science Bridges Programme	
	Early Stage Career Awards	
British Council India	UK-India Education and Research Initiative	www.britishcouncil.org.in
Department for International Development	DFID Regional Research Hub	www.dfid.gov.uk/research/ www.research4development.info/
UK Trade and Investment	UK-India Industrial Innovation Forum	www.uktradeinvest.gov.uk
The Royal Society	Scientific Seminars Scheme	www.royalsociety.org www.newtonfellowships.org/
	Newton Fellowships (together with BA and RAEng below)	
The British Academy	South Asia Fellowships	www.britac.ac.uk
The Royal Academy of Engineering	Particular emphasis on the energy sector	www.raeng.org.uk